BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of: Application of Duke Energy Progress, LLC for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C. Gen. Stat. § 62-133.9 and Commission Rule R8-69	))))))	**Docket No. E-2, Sub 1252**

DIRECT TESTIMONY AND EXHIBITS OF

FOREST BRADLEY-WRIGHT

ON BEHALF OF

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

August 26, 2020

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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 ("Justice Center"), and the North Carolina Housing Coalition ("Housing Coalition") (collectively, "Justice Center *et al.*").

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 consultant, I also prepared and filed intervenor comments on

renewable energy dockets before the Mississippi and Alabama Public Service Commissions.

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

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

A. Yes, I filed expert witness testimony in response to Duke Energy Carolina's ("DEC") DSM/EE Recovery Rider 11 in Docket No. E-7, Sub 1192, Duke Energy Progress' ("DEP") DSM/EE Recovery Rider 11 in Docket No. E-7, Sub 1206, and DEC's DSM/EE Recovery Rider 12 in Docket No. E-7, Sub 1230.

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

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

II. Testimony Overview

Q. PLEASE SUMMARIZE YOUR TESTIMONY AND OVERALL IMPRESSIONS OF DEP'S 2019 DSM/EE PERFORMANCE AND 2021 FORECAST.

A. My testimony provides a review of DEP's DSM/EE portfolio performance in 2019, gives reactions to the Company's efficiency saving forecast for 2021, and updates the Commission regarding ongoing activities at the Duke Energy Collaborative. I also focus on issues pertaining to DEP's low-income energy efficiency and implications of the COVID-19 pandemic for the Company's programs. And I identify connections between the Company's DSM/EE savings and related public policy matters.

Overall, I credit DEP for its continued regional leadership in the Southeast. But I also point to the significantly higher overall savings performance and superior low-income savings achieved by DEP's sister company, Duke Energy Carolinas. I encourage DEP to strive to close this efficiency savings gap and attain 1% annual savings.

I also raise concerns following DEP's failure to meaningfully explain future savings declines in its Rider testimony or indicate plans for increasing savings going forward, as directed by the Commission. I also evaluate progress on the five directives included in the Commission's 2019 DEP DSM/EE Rider Order.

III. Summary of Recommendations

Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR DEP?

A. In my testimony, I encourage DEP to continue engaging with the Collaborative and offer the following recommendations:

- Provide details to the Collaborative from the five-year program planning projections that the Company is using as inputs for their DSM/EE modeling in the 2020 IRP.
- Continue to work with the Collaborative to refine its data reporting so that Collaborative members can better understand program and portfolio performance and identify opportunities and solutions that could lead to expanded efficiency savings.
- Work with Collaborative members to establish and utilize project deadlines and create work products for select activities, including but not limited to the report described below related to preventing or correcting future savings declines and achieving or exceeding 1% annual efficiency savings.

Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR THE COMMISSION?

A. In my testimony, I provide the following recommendations to the Commission:

- Direct DEP to explain forecasted declines, when applicable, and show what steps are being taken to prevent them in future DSM/EE Rider filings. If forecasted savings levels are lower than those reported in recent years, DEP should provide a clear and detailed explanation for the reductions—indicating specific factors driving the declines—as well as showing which programs are impacted by those factors, and by how much.
- Direct DEP to provide a detailed plan in subsequent DSM/EE Rider filings for how it could achieve 1% annual savings for any year in which

its projections fall short of that mark. The plan should reflect the Company's best effort to manage costs while delivering effective efficiency programs that result in meaningful savings for customers.

- In support of the previous two recommendations, request that DEP work with the Collaborative to annually prepare a corresponding report aimed at assisting DEP to (a) prevent or correct future savings declines, and (b) meet or exceed 1% annual savings levels. The report should be developed in a joint and fully collaborative manner from start to finish, with an annual target completion date of April 20 to ensure DEP is able to incorporate relevant findings in its annual DSM/EE Rider filings.
- Express affirmative support for DEP to pursue higher levels of efficiency savings for low-income customers, particularly deep saving retrofits. This would require increased annual expenditures for programs directed to low-income households to at least match the DEC budget on a per-residential customer basis, which would result in a floor of $2.4 million annually.
- Direct DEP to provide a plan in its next DSM/EE Recovery Rider filing showing how it could ramp up low-income efficiency savings over the next three to five years. Such a plan should include strategies for addressing energy burdens with deep efficiency savings, serving hard to reach customer groups, and neighborhood-style approaches that reach large numbers of customers.

- State its support for deploying targeted energy efficiency programs to help customers mitigate the impact of COVID-19 and direct DEP to submit a specific plan by no later than thirty days after the Commission's Order in this docket that includes proposed modified program budgets, savings goals, and customer targeting strategies. This report should place a particular emphasis on customers who are at risk of disconnection, such as those who have accrued unpaid electric bills as well as those who are elderly, disabled, have high energy burdens, and who have lost their employment as a result of the pandemic. If DEP is aware of regulatory obstacles that may need to be addressed to proceed with its plan, they should be indicated.
- Direct DEP to provide carbon emissions reduction figures associated with achieved savings (annual and cumulative) in its annual DSM/EE Rider filings and correlate those reductions to both North Carolina's Clean Energy Plan emissions reduction targets and the Company's own corporate carbon emissions reduction goals.

IV. DEP's 2019 Energy Savings Achievements

Q: HOW DID DEP'S EFFICIENCY PERFORMANCE IN 2019 COMPARE TO PREVIOUS YEARS?

A: DEP's efficiency savings were lower in 2019 than in the previous two years. In 2019, DEP delivered 353.2 gigawatt-hours ("GWh") of efficiency savings at the meter, equal to 0.78% of the previous year's retail sales.[1] This reflects a decline

[1] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-17 (Docket No. E-2, Sub 1252) (Ex. FBW-2).

in incremental savings from 2018,[2] for which DEP reported annual savings of 0.88% of the prior year's retail sales. DEP still has not yet reached the 1% annual savings target and continues to lag considerably behind DEC. Nevertheless, the Company should still be commended for delivering savings for its customers that are among the highest in the Southeast, particularly against the backdrop of a disappointing further decline in commercial and industrial customers participating in the DSM/EE Rider. I also recognize that DEP achieves these savings against the headwinds of lower avoided cost rates and changes in efficiency baselines that were identified by DEP in its filing.[3]

Q: WAS THE COMPANY'S EE PORTFOLIO COST-EFFECTIVE IN 2019?

A: Yes. Although cost-effectiveness test scores for the total portfolio declined for the second year in a row, the value of DSM/EE programs continued to significantly exceed costs in 2019, delivering nearly $215 million of net present value benefits[4] and demonstrating that DEP customers realize considerable value from the Company's investment in energy efficiency programs.

Q: HOW DID RESIDENTIAL SAVINGS RELATE TO TOTAL SAVINGS IN 2019?

A: DEP's residential programs were responsible for approximately 258.6 GWh[5] of energy savings, making up nearly 70% of total savings in 2019.[6] Within DEP's

[2] *Id.*
[3] *Direct* T*estimony of Robert P. Evans for Duke Energy Progress*, Docket No. E-2, Sub 1252 at p. 12, lines 13-18 (June 9, 2020) ("Evans Testimony").
[4] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-4 (Docket No. E-2, Sub 1252) (Ex. FBW-3).
[5] For consistency with DEP's filing, unless otherwise specified energy savings figures are at the generator.
[6] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-20 (Docket No. E-2, Sub 1252) (Ex. FBW-4).

residential portfolio, the largest savings came from My Home Energy Report (MyHER), Energy Efficient Appliances and Devices, and the Energy Efficient Lighting program. MyHER alone was responsible for 154.6 GWh in reported savings, making up 41.6% of total savings from just this one program. While such high savings are commendable, overreliance on a handful of short-term savings programs continues to be cause for concern. In 2018, Chris Neme of the Energy Futures Group provided testimony in DEP's DSM/EE Rider docket,[7] raising concerns about the Company's overreliance on these types of measures. Mr. Neme recommended a focus on deeper and longer lived measures to maintain a more balanced and robust portfolio going forward. I share that view and testified to the same issue in last year's docket.[8] The solution to this overreliance is not necessarily to reduce comparatively shallow and short-term savings from MyHER and lighting measures, but rather to increase savings achieved from deeper and longer-term saving measures.

Q: HOW DID NON-RESIDENTIAL SAVINGS RELATE TO TOTAL SAVINGS IN 2019?

A: Non-residential savings declined significantly from past years to 112.7 GWh, or 30.3% of overall savings[9]. In 2018, non-residential savings were 145.5 GWh[10] and in 2017 they were 157.7 GWh[11] – 40% higher than DEP reported for 2019.

[7] *Direct Testimony of Christopher Neme on Behalf of the North Carolina Justice Center, North Carolina Housing Coalition, Southern Alliance for Clean Energy, and Natural Resources Defense Council*, Docket No. E-2, Sub 1174 at pp. 45-54 (Sept. 4, 2018).
[8] *Direct Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center, North Carolina Housing Coalition, and Southern Alliance for Clean Energy*, Docket No. E-2, Sub 1206 (Aug. 19, 2019).
[9] Ex. FBW-4.
[10] Evans Exhibit 1, p. 1, Docket No. E-2, Sub 1252 (June 9, 2020).
[11] Evans Exhibit 1, p. 3, Docket No. E-2, Sub 1192 (June 11, 2019).

These persistent declines in non-residential savings are largely a result of commercial and industrial opt outs, which have driven down overall savings and benefits from DEP's DSM/EE portfolio.

Q: WHAT EFFECT DO COMMERICAL AND INDUSTRIAL OPT OUTS HAVE ON PERCENT OF ENERGY SAVINGS?

A: In 2019, approximately 56% of the non-residential load opted out of DEP's energy-efficiency Rider.[12] Because commercial and industrial efficiency savings can be among the most economic, greater savings among these customers would likely translate into even higher utility-system cost reductions. While I recognize that commercial and industrial customers who opt out also certify that they have implemented their own energy-efficiency or demand-side management measures, there is no requirement to report any resulting savings to the Company or the Commission. This creates uncertainty about how much efficiency savings are actually being captured by customers who opt out, which inhibits DEP's ability to plan.

Q: IS IT REASONABLE TO INCLUDE DEP OPT-OUT CUSTOMERS IN A PERCENTAGE OF RETAIL SALES CALCULATION?

A: Yes. It is important for the Commission and stakeholders to understand the actual impact that energy efficiency program savings have on total load. "Net of opt-out" figures are rarely used outside of DSM rider applications because they are not well-suited for most utility planning purposes, such as integrated resource plan (IRP) proceedings where the utility is required to make plans based on the

[12] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-18 (Docket No. E-2, Sub 1252) (Ex. FBW-5).

total load served. Energy efficiency is a demand-side resource, and is therefore a relevant consideration in such types of proceedings.

It is also important for the Commission and lawmakers to understand how the opt-out provisions reduce overall savings. To illustrate, DEP's total portfolio savings adjusted for net of opt-out was 1.14% of prior-year retail sales in 2019. When sales from opt-out customers are included in the equation, this drops to 0.78% overall.[13]

Q: HOW DID DEP'S LOW-INCOME EFFICIENCY IMPACTS COMPARE TO PREVIOUS YEARS?

A: Total savings from the DEP Neighborhood Energy Saver program increased modestly from 3.5 GWh in 2018 to 3.7 GWh in 2019.[14] Between January 2019 and July 2020, DEP also captured 155.7 MWh of savings from its Pay for Performance low income pilot program.[15] Continued growth of efficiency savings for low-income customers has been a consistent focus at the Collaborative and Duke has shown a willingness to engage on this issue. However, the impact of programs that aim specifically to serve low-income customers at DEP lags far behind what DEC has been delivering, which raises significant concerns. The time has come to raise the bar at DEP to at least match the recent performance of its sister company, as set forth in more detail below in Section VI of my testimony.

V. Issues and Recommendations Regarding Duke's 2021 Savings Forecast

Q. WHAT LEVEL OF SAVINGS DOES DEP PROJECT FOR 2021?

[13] Ex. FBW-2.
[14] Evans Exhibit 1, pp.1 and 3, Docket No. E-2, Sub 1252 (June 9, 2020).
[15] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-14 (Docket No. E-2, Sub 1252) (Ex. FBW-6).

A. DEP forecasts 378.7 GWh of incremental savings at the meter for 2021, which is equivalent to 0.85% of annual retail sales.[16] This projection represents an increase from the 353.2 GWh of at the meter savings DEP reported for 2019 (0.78% of prior-year retail sales), though it is a decline from the 0.88% the Company reported for 2018,[17] which was the Company's highest level of savings yet achieved. Despite agreeing in the Duke-Progress merger[18] to target 1% annual savings (as a percentage of prior-year retail sales), DEP has yet to achieve that threshold. Nor has the Company ever forecast achieving 1% savings in any prior EE/DSM Rider docket filing since the merger. By contrast, DEC exceeded 1% annual savings in 2017 and 2018, and nearly reached it again with 0.98% savings in 2019.[19] Unless DEP increases savings beyond its current forecast, the Company will continue to fall short of the 1% threshold and the higher performance of its sister company. DEP could still exceed its forecast and achieve savings greater than the 2018 savings level. But circumstances driven by the COVID-19 pandemic create additional uncertainty and warrant responsive action that is not discussed in DEP's filing, as discussed further below.

[16] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-16 (Docket No. E-2, Sub 1252) (Ex. FBW-7).
[17] *Id.*
[18] The Merger Settlement with SACE, South Carolina Coastal Conservation League, and Environmental Defense Fund calls for annual energy savings of at least 1% of prior-year retail sales beginning in 2015 and cumulative savings of at least 7% over the period from 2014 through 2018. The Merger Settlement was approved by the Public Service Commission of South Carolina in Docket No. 2011-158-E. The 1% savings target has also been memorialized in the mechanism governing North Carolina programs, which provides an opportunity for the Company to earn a bonus incentive for achieving savings of 1% or more of prior year retail sales. *Order Approving DSM/EE Programs and Stipulation of Settlement*, Docket No. E-7, Sub 1032 (Oct. 29, 2013).
[19] *Direct Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center, North Carolina Housing Coalition, and Southern Alliance for Clean Energy*, Docket No. E-7, Sub 1230 at p. 7 (May 22, 2020).

Q. HAS DEP PROVIDED AN EXPLANATION FOR ITS PROJECTED EFFICIENCY SAVING DECLINES, AS REQUESTED IN DEP RIDER DOCKET E-2, SUB 1206?

A. Yes and no. In response to a data request,[20] DEP provided information that explained which programs were expected to see declines in savings and participation at a greater level of detail than the company has shared in the past. This additional information is useful and welcome. But the Company does not sufficiently explain the forecasted decline in the Company's Rider filing itself. In another data request, [21] the Justice Center *et al.* asked whether DEP had provided a summary of progress made in addressing forecasted energy savings declines in its Rider filing as required by the Commission's Order in last year's DEP DSM/EE Rider docket.[22] In response, the Company referred to the section of Robert Evans's testimony[23] in which he generally restated the Commission's requirement to address forecasted declines. It appears that DEP may have instead meant to refer to a later section of his testimony[24] that includes a reference to Collaborative discussions on this subject.

This latter section of Mr. Evans's testimony mentions falling avoided costs, higher federal equipment standards, and increased market penetration of energy efficient measures as reasons for declining savings. But these explanations are

[20] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-24 (Docket No. E-2, Sub 1252) (Ex. FBW-8).
[21] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-28 (Docket No. E-2, Sub 1252) (Ex. FBW-9).
[22] *Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice*, Docket No. E-2, Sub 1206 at p. 30 (Dec. 13, 2019).
[23] Evans Testimony p. 8, lines 9-18.
[24] Evans Testimony p. 12, lines 13-18.

not new.[25] And importantly, DEP does not provide any concrete "options for preventing or correcting a decline in future DSM/EE savings" as directed by the Commission.[26] To comply with the Commission's directive, the Company needs to provide more information about how it plans to increase savings. I continue to encourage the Company to work on identifying these options with the Collaborative. Furthermore, these efforts should be undertaken in a structured manner with timelines for completion and written reports that can be incorporated into future DEP Rider filings, as discussed further below.

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

A. Yes. DEP has indicated to the Collaborative that the forecasts it provides in its annual Rider filings are conservative by design, to avoid initially over-collecting from customers and then having to issue refunds. While this practice is understandable, it should not preclude the Company from demonstrating its intent to achieve higher levels of efficiency savings or developing plans for doing so. North Carolina has numerous policies that support achieving higher levels of efficiency savings. As noted below, there is strong interest in the Collaborative in supporting DEP to achieve previous saving levels and ultimately reach or exceed the 1% annual savings target.

Q. DOES DEP EXPLAIN THE STEPS IT IS TAKING TO INCREASE SAVINGS FOR 2021 AND BEYOND?

[25] *See, e.g., Direct Testimony of Robert P. Evans on Behalf of Duke Energy Progress*, Docket No. E-2, Sub 1174 at pp. 10-11 (June 20, 2018).
[26] *Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice*, Docket No. E-2, Sub 1206 at p. 30 (Dec. 13, 2019).

A. DEP did not indicate in its Rider filing with the Commission what steps it is or could be taking to keep savings levels up or increase them in the future. At a minimum, DEP should provide a structured approach for the steps it will take to reverse declines and at least match savings levels that it has previously achieved.

Q. WHAT IS THE PURPOSE OF HAVING A STRUCTURED APPRAOCH FOR ACHIEVING HIGHER SAVINGS LEVELS?

A. A structured approach to achieving higher specific level of efficiency portfolio savings is superior to ad hoc conversations that inadequately define the problem to be solved, lack required information and analysis against which potential solutions can be evaluated, and do not produce a sufficiently detailed record from which strategic decisions can be made. DEP repeatedly points to external factors that put downward pressure on efficiency savings as the main cause of declining savings. Even though neither DEP nor the Collaborative have control over those factors, that does not mean that we cannot find a pathway to achieving higher savings. Improvements in program design, delivery, and promotion can have a significant impact on increased participation and savings. The 2019 Portfolio Level Opportunities & Challenges report,[27] was an initial step towards the type of structured effort that can elevate Collaborative discussions to a more robust level, as discussed further below.

Q. SHOULD THE COMMISSION ASSESS DEP'S PERFORMANCE IN COMPARISON TO A 1% ANNUAL SAVINGS TARGET?

A. Yes. The 1% annual savings target is relevant for public policy purposes for several reasons. Notably, research suggests that energy efficiency savings trend

[27] See Exhibit FBW-10, "Portfolio Level Opportunities and Challenges Summary Report," January 2020.

higher in jurisdictions that have enacted savings targets.[28] Even though the time period defined in the Merger Settlement for a cumulative savings target has passed, the 1% annual savings target remains relevant for DEP, both in public policy and among stakeholders.

Q. IS THERE EVIDENCE THAT COLLABORATIVE MEMBERS SUPPORT A 1% SAVINGS TARGET?

A. Yes. A large number of clean energy and public interest advocates in the Collaborative have made clear that the 1% savings target is important. The Commission has also indicated its interest in DEP correcting declines from savings that the Company has previously achieved, which were in excess of 0.88% annual savings. In proposed revisions to the DSM/EE cost recovery mechanisms (Docket No. E-7, Sub 1032), DEP, Public Staff and intervenor parties came to an agreement that included a number of changes to the Company's portfolio performance incentive, including revising and expanding a bonus incentive payment for attaining 1% annual savings.[29] This matter is now awaiting final Commission action. All of these factors demonstrate the continued relevance of the 1% annual savings threshold.

Q. WHAT STEPS SHOULD BE TAKEN TO INCREASE SAVINGS BEYOND DEP'S CURRENT PROJECTIONS?

A. Duke should continue to explore and develop new program concepts and strategies for achieving increased energy savings, and should also increase

[28] 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

[29] *Joint Proposed Revisions of the Public Staff, DEP, DEC, NRDC, SACE, Sierra Club, SC Coastal Conservation League, NC Sustainable Energy Association, and NC Attorney General's Office to the DSM/EE Cost-Recovery Mechanisms of DEC and DEP*, Docket Nos. E-7, Sub 1032 & E-2, Sub 931(Jan. 15, 2020) ("2020 Joint Proposed Revisions to DSM/EE Cost-Recovery Mechanism").

participation in existing programs to grow energy savings. During our work with the Collaborative, Duke has shown a willingness to engage with these ideas, including consideration of new technologies, delivery channels, and financing mechanisms, as well as efforts to reach underserved customer segments and address underutilization of particular measures. Each of these has an important role to play in pursuing higher levels of overall savings and allowing DEP to potentially reach and exceed 1% annual savings.

Q. HOW HAS THIS BEEN ADDRESSED IN THE COLLABORATIVE TO DATE?

A. In 2019, the Collaborative examined Portfolio Level Opportunities and Challenges, which prominently featured the 1% annual savings goal. That work ultimately evolved into many of the 2020 priorities and program development opportunities that the Collaborative is working on now. A constructive next step would be to focus some of the Collaborative's work on developing a plan setting forth the steps DEP could take to bridge the gap between its forecasted lower projected annual savings for 2021 and reaching or exceeding 1% annual savings. Such a plan ought to include recommendations for program modifications and additions along with forecasts for anticipated savings impact and expected cost effectiveness levels. I suggest a completion date of April 20, 2021 for the first report, which would provide the Collaborative with enough time to develop a project schedule, ensure timely discussion, undertake analysis, develop recommendations, and present its final results prior to DEP filing its 2021 DSM/EE Rider.

Q. HAVE THE IMPACTS OF THE COVID-19 PANDEMIC BEEN FACTORED INTO DEP'S 2021 SAVINGS PROJECTIONS?

A. This is a significant concern that I address in detail below. In response to this same question in a data request,[30] DEP stated: "No adjustments to the 2021 savings projections were made because of the COVID pandemic."

Q. WHAT SUGGESTIONS DO YOU HAVE FOR DEP AND THE COMMISSION CONCERNING PLANS TO REACH HIGHER OVERALL LEVELS OF SAVINGS IN THE FUTURE?

A. Last year, the Commission expressed interest in better understanding the reasons for forecasted declines, calling for DEP and the Collaborative to "explore options for preventing or correcting a decline in future DSM/EE savings." While the Collaborative has and will continue to bring considerable value to this subject, I recommend the Commission take the following actions to help ensure progress is made with this objective:

- Direct DEP to explain forecasted declines, when applicable, and show what steps are being taken to prevent them in future rider filings. If forecasted savings levels are lower than those reported in recent years, DEP should provide a clear and detailed explanation for the reductions, indicating specific factors driving the declines, as well as showing which programs are impacted by those factors and by how much.
- Direct DEP to provide a detailed plan in subsequent DSM/EE Rider filings for how it could achieve 1% annual savings for any year in which its projections fall short of that mark. The plan should reflect the

[30] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-27 (Docket No. E-2, Sub 1252) (Ex. FBW-11).

Company's best effort to manage costs while delivering effective efficiency programs that result in meaningful savings for customers.

In support of the previous two recommendations, I request that the Commission direct DEP to work with members of the Collaborative to annually prepare a corresponding report aimed at assisting DEP to (a) prevent or correct future savings declines, and (b) meet or exceeding 1% annual savings levels. The report should be developed in a joint and fully collaborative manner from start to finish, with an annual target completion date of April 20 to ensure that DEP is able to incorporate relevant findings in its annual DSM/EE Rider filings.

VI. Achieving Greater Efficiency Savings Impact for Low-Income Customers

Q: HOW DO OVERALL SAVINGS LEVELS FOR LOW INCOME EFFICIENCY PROGRAMS AT DEP COMPARE TO THOSE AT DEC?

A: DEP's 3.7 GWh of savings in 2019 paled in comparison to the more than 9 GWh DEC saved customers through its low-income efficiency programs.[31] DEC has only about 50% more residential accounts than DEP,[32] but it managed to deliver 234% more efficiency savings for low-income customers in 2019 than did DEP.

Q. WHAT LEVEL OF SAVINGS DOES DEP PROJECT FOR ITS LOW INCOME PROGRAMS IN 2021?

A. DEP's Neighborhood Energy Saver program is projected to decline slightly from the 3.7 GWh achieved in 2019 to 3.6 GWh in 2021, while savings from the DEP's Pay for Performance pilot program are likely to remain modest. As noted above, sister company DEC sets a higher bar that DEP ought to follow, having

[31] Evans Exhibit 1, p. 3, Docket No. E-7, Sub 1230 (Feb. 25, 2020).
[32] Implementation by the North Carolina Utilities Commission (the Commission) of Executive Order Nos. 142 and 124 in NCUC Docket No. M-100, Sub 158, "July Table Final," lines 94 and 95. August 14th, 2020.

delivered far more efficiency savings for low-income customers in both absolute and proportionate terms in 2019 and forecasting an increase to 9.2 GWh in low-income savings in 2021.

Q: HOW DO THE LOW-INCOME PROGRAMS OFFERED BY DEC COMPARE TO THOSE OFFERED BY DEP?

A: Both DEP and DEC operate neighborhood-style low-income programs and both use the same program administrator, Honeywell Building Services. But DEC also operates the Income Qualified Weatherization program, administered by the North Carolina Community Action Association, which delivers deeper individual savings for each participating household. DEP launched a Pay for Performance pilot program in 2019 that includes deeper saving measures, but it currently contributes only a little to the Company's overall savings. Combined, these programs fall far short of the saving levels achieved by DEC. DEC delivered well over double the savings as DEP from its combined low-income programs in 2019. Not surprisingly, DEC also spent more than twice as much on income-qualified programs as well —$3.6 million[33] compared to DEP's $1.7 million.[34]

Q: WHAT ARE SOME OF THE AVAILABLE OPTIONS FOR EXPANDING DEEPER SAVING EFFICIENCY PROGRAMS FOR LOW-INCOME CUSTOMERS?

A: There are several options for expanding deeper efficiency savings programs for DEP's low-income customers. One option is to essentially replicate the regular DEC Income Qualified Weatherization program model, which I advocated for in my DEP Rider testimony last year. Or the company could deploy a modified version of this program, patterned off of the related Income Qualified

[33] Evans Exhibit 1, p. 3, Docket No. E-7, Sub 1230 (Feb. 25, 2020).
[34] Evans Exhibit 1, p. 3, Docket No. E-2, Sub 1252 (June 9, 2020).

Weatherization pilot program DEC offered from late 2018 through the end of 2019 in the Durham area. Another option would be to dramatically scale up the Pay for Performance Pilot, if such an expansion is deemed feasible and likely to deliver comparable results. Or DEP could increase funding and deployment of the expanded set of deeper efficiency saving measures that were approved by the Commission earlier this year. If the Company undertook this route, the Company should also offer programming for low-income customers that includes HVAC equipment replacement, which is the largest source of energy use in a typical home and has been a major component of the DEC Income Qualified Weatherization program. These examples are illustrative and not intended to be exhaustive. Additional approaches could focus on particular housing types like multifamily and manufactured homes, or measures like heat pump water heaters, or new delivery channels.

In addition, if the Commission ultimately approves the partial settlement agreement and stipulation[35] in the pending DEP rate case, to which the Justice Center *et al*. are parties, there will be additional low-income efficiency programs for DEP and members of the Collaborative to consider. Specifically, the settlement agreement calls for the development of low-income efficiency pilot programs, which could significantly boost DEP's ability to deliver greater efficiency savings for its low-income customers.

Regardless of which program designs are considered, there will likely be tradeoffs between potential total savings impact, cost per kWh savings, and

[35] *Agreement and Stipulation of Settlement between DEP, Justice Center, Housing Coalition, SACE, NRDC, and NCSEA*, Docket No. E-2, Sub 1219 (July 23, 2020).

average savings per participant. Whichever approach is ultimately taken, I recommend that these three factors be carefully and transparently weighed in the decision making process with a strong emphasis placed on optimizing to deliver meaningful impact for individual customers with high energy burdens.

Q: HOW MIGHT HELPING HOME FUNDS BE USED TO AMPLIFY THE IMPACT OF DEP'S RATEPAYER FUNDED LOW-INCOME PROGRAMS?

A: Helping Home Funds (HHF) are shareholder dollars designated for low-income efficiency project, which can be used in a more flexible manner than ratepayer funded efficiency programs. DEP could follow the example set by DEC, which has shown how such funds can be strategically deployed to leverage and stretch the impact of ratepayer funded programs.

By using Helping Home Fund dollars alongside its ratepayer funded Income Qualified Weatherization program, DEC was able to serve many more households with comprehensive energy efficiency upgrades and could receive more measure improvements to achieve deeper resulting bill savings. Helping Home Funds can also be used to address incidental repair needs or health and safety issues, which are often required before many low-income households are able to receive efficiency upgrades.

Helping Home Funds were also critical to the success of the Income-Qualified Weatherization pilot program DEC operated in 2018 and 2019, which operated without matching Weatherization Assistance Program funds. And previous reporting has shown that customer benefits extend far beyond lower

energy bills to also include quantifiably better health outcomes and higher work productivity.[36]

DEC exhausted its remaining HHF in 2019, but DEP still had funds remaining that could be leveraged in a similar way alongside ratepayer funded programs. Moreover, the Justice Center, Housing Coalition, SACE, and other co-intervenors in the ongoing Duke rate case proceedings reached a partial settlement agreement that would result in an additional $6 million of HHF over two years, split between DEC and DEP.[37] If this settlement is ultimately approved by the Commission, it could greatly amplify the impact of new DEP deep saving programs.

Q: ARE THERE WAYS THAT DEP COULD LEVERAGE ITS NON-INCOME QUALIFIED EFFICIENCY PROGRAMS TO ENHANCE THE ENERGY PERFORMANCE OF LOW-INCOME MULTIFAMILY HOUSING?

A: Yes, members of the Collaborative have been working with the Company to connect projects receiving Low-Income Housing Tax Credits ("LIHTC") with Duke's New Construction Energy Efficiency Design Assistance, a subset of the Non-Residential Smart $aver Custom program. The aim is to ensure that these low-income housing projects will benefit from energy efficiency upgrades and remain affordable for at least 30 years. While several LIHTC projects have secured efficiency funding with DEC, DEP has yet to serve any of these projects. Further coordination with the North Carolina Housing Finance Agency, which administers the LIHTC program, is encouraged. Such coordination could include

[36] "Evaluation of Duke Energy's Helping Home Fund," Advanced Energy (October 15, 2017) (Ex. FBW-12).

[37] *Agreement and Stipulation of Settlement between DEP, Justice Center, Housing Coalition, SACE, NRDC, and NCSEA*, Docket No. E-2, Sub 1219 (July 23, 2020).

reviewing eligible properties against all of DEP's relevant program offerings, such as the Multi-family or Neighborhood Energy Savers Programs in addition to the Non-Residential Smart $aver Custom program. In addition, new pilot programs could be designed to meet the unique needs of LIHTC properties. Since LIHTC projects could come through multiple DEP efficiency program channels, some of which are themselves subsets of larger programs, I would also encourage the Company to provide ongoing reporting to the Collaborative on these efforts.

Q: HOW DOES DEP CURRENTLY DETERMINE THE AMOUNT FOR ITS LOW-INCOME ENERGY EFFICIENCY BUDGETS AND SAVINGS TARGETS?

A: I do not know. DEP's response to this same question in a data request did not provide a concrete answer:

> "Budget and savings targets are determined by the filed participation numbers for our low-income programs. The participation numbers are generated based on the potential and the workload needed to successfully reach a high completion/ penetration rate that also takes into consideration that these programs are not cost-effective."[38]

Q: WOULD YOU STILL RECOMMEND INCREASING DEP'S LOW-INCOME EFFICIENCY PROGRAM SAVINGS AND BUDGETS?

A: Yes, I would. It would be highly beneficial for the Commission to indicate its support for larger budgets to pursue expanded savings for low-income customers in 2021 and beyond. Last year, the Commission stated:

> "In the event that the modifications filed by DEP in 2020 to the Neighborhood Energy Saver program do not satisfy the weatherization program changes sought by NC Justice Center, et al., DEP should continue to discuss with the Collaborative the adoption of an Income-Qualified Weatherization program comparable to that implemented by DEC."

[38] Duke Energy Progress Response to Justice Center *et al.* Data Request No. 1-30 (Docket No. E-2, Sub 1252) (Ex. FBW-13).

As noted above, even if the modified NES program is successful, an expansion of total spending and overall savings from DEP's low-income efficiency program portfolio is warranted, with a specific focus on delivering deep efficiency savings to customers struggling with high energy burdens. Accordingly, I recommend that the Commission:

- Express affirmative support for DEP to pursue higher levels of efficiency savings for low-income customers, particularly deep saving retrofits. This would require an increase annual expenditures for programs directed to low-income households to at least match the DEC budget on a per residential customer basis, resulting in a floor of $2.4 million annually.
- Direct DEP to provide a plan in its next DSM/EE Recovery Rider filing showing how it could ramp up low-income efficiency savings over the next three to five years. Such a plan should include strategies for addressing energy burdens with deep efficiency savings, serving hard to reach customer groups, and neighborhood-style approaches that reach large numbers of customers.

VII. Responding to the COVID-19 Pandemic

Q. WHAT OBSERVATIONS DO YOU HAVE REGARDING IMPACTS OF THE COVID-19 PANDEMIC ON ENERGY EFFICIENCY PROGRAM DELIVERY?

A. The COVID-19 pandemic has profound near term implications for energy efficiency delivery, which may extend for several years. Most prominently, there has been a substantial expansion of customer need concurrent with significant programmatic disruptions. In response, utilities across the country have had to

make adaptations to energy efficiency policies and program operations to protect worker and customer health, support customers who are struggling from the pandemic-induced economic downturn, and prevent potentially significant declines in overall efficiency portfolio savings. This March, in-person contact between customers and efficiency providers at Duke and across the country was curtailed, leading to many programs being temporarily halted or altered to function in a remote manner. Even when social distancing requirements ease, ongoing adaptations may be needed in how programs are designed and implemented. While this is uncharted territory, there is an emerging discussion across the country on the important role that energy efficiency investments can play in helping to meet the challenge of the economic recession caused by the pandemic. A recent article by the American Council for an Energy Efficient Economy ("ACEEE")[39] provides an overview of eight steps that can be taken to retool energy efficiency programs during the pandemic crisis, including:

- Continue virtually
- Build new participation pipelines and leverage available opportunities
- Engage and educate customers
- Train program staff and contractors
- Pivot and adapt programs to continue serving customers while adhering to public health guidelines and restrictions
- Focus on communities most heavily impacted by COVID-19

[39] Dan York, "8 ways efficiency programs can retool during the crisis and plan for a strong recovery," American Council for an Energy-Efficiency Economy (June 18, 2020) available at: https://www.aceee.org/blog-post/2020/06/8-ways-efficiency-programs-can-retool-during-crisis-and-plan-strong-recovery.

- Use experience gained from this crisis to re-examine, streamline, and improve program designs and services
- Manage funds so efficiency can be a tool for economic recovery[40]

Q. AS FAR AS YOU KNOW, HAS DEP DEVELOPED AN OVERARCHING PLAN TO ADAPT ITS ENERGY EFFICIENCY APPROACH FOR THE COVID-19 ERA?

A. It has not. In response to a data request[41] on this topic, DEP replied that:

"The Company is not planning on broad or significant changes to offerings, incentive levels or delivery channels solely based on the pandemic."

"DEP is not planning on substantially increasing program investments, but will focus on prudent changes that allow the programs to safely meet customer demand for the various programs."

"The programs has [*sic*] not targeted specific COVID-19 impacted customer segments" or customers who have accrued unpaid electric bills.

"At this point, DEP has not requested special authorization to take steps without specific NCUC approval. DEP continues to evaluate options that better serve customers, and some of those may require regulatory approval, but DEP isn't requesting an exception to the normal processes."

Q. OVER THE LAST SIX MONTHS, HAVE THESE SUBJECTS BEEN DISCUSSED AT THE COLLABORATIVE?

A. The intersection between COVID-19 and DEP's energy efficiency programs were discussed during the May and July Collaborative meetings and a recent working group call. These conversations are still at a very early stage. Nevertheless, I appreciate that discussions with the Company on COVID-19 response have

[40] *Id.*
[41] Ex. FBW-11.

begun. I am hopeful that the delivery of energy efficiency will ultimately have a meaningful and positive impact in helping customers though this challenging and still evolving situation.

Q. CAN YOU IDENTIFY AN EXAMPLE OF UTILITY REGULATORS TAKING PROACTIVE STEPS TO ENSURE ENERGY EFFICIENCY PROGRAMS ADAPT TO MEET CUSTOMER NEEDS DURING THE PANDEMIC?

A. Yes, one such example is the Michigan Public Service Commission (MPSC), which on April 15, 2020 issued an order reviewing its response to the COVID-19 pandemic and providing guidance and direction to energy and telecommunications providers and other stakeholders. The MPSC directed "Staff to develop a work plan and to convene energy providers operating these programs and other stakeholders."[42] The focus of the plan was to:

- Identify potential impacts on meeting energy or demand saving targets and ways to mitigate such impacts and ensure program continuity.
- Identify best practices for continuing to serve low- to moderate-income households, including those impacted directly by COVID-19, and related outreach.[43]

The MPSC Staff was given a 60 day period to file its update, which thoughtfully and effectively addressed a broad range of considerations, including safety, workforce development, flexibility, marketing and education, and addressing the growing need for income-eligible households and others facing new financial challenges due to the pandemic. It also suggested that energy

[42] Michigan Public Service Commission Case No. U-20757, Order April 15, 2020.
[43] *Id.*

saving targets for 2020 and 2021 be combined and merged to ensure that overall savings levels did not decline, affording the utilities needed flexibility. This example validates the importance of addressing the intersection between the pandemic and energy efficiency program planning while also showing how the Commission, Public Staff, utilities, and stakeholders can collaborate on solutions. I provide the relevant sections of the MPSC Order and the full staff report in Exhibit FBW-14 as a point of reference for steps that could be taken in North Carolina as well.

Q. WHAT SUGGESTIONS DO YOU HAVE TO HELP ADAPT ENERGY EFFICIENCY PROGRAM DELIVERY TO CONTINUE DURING THE COVID-19 PANDEMIC?

A: I offer the following suggestions that could be part of a larger review of potential program design adaptions:

- Use of virtual audits to (a) increase customer engagement around energy efficiency, (b) promote low- and no-cost steps they can take to immediately lower energy use, (c) provide customized EE kits that can be mailed, and (d) create a queue for comprehensive measure installations once restrictions are lifted.
- Expanding programs (residential and commercial) for replacement of major equipment like heat pumps, heat pump water heaters, and central air conditioning systems. These systems are typically the most energy-intensive equipment in the home or business and installation involves minimal direct customer contact. Accelerated market adoption for these measures could be driven by instant-rebates and midstream delivery

channels that favor high-efficiency systems, rather than mid-efficiency equipment, without increasing contact between participants and workers beyond what would occur for mid-efficiency equipment installs.

- Target large buildings that are unoccupied or have reduced occupancy for major efficiency upgrade projects, such as heating and cooling upgrades and lighting replacements for schools, universities, and office buildings.
- Expand, Market, and Leverage Online Marketplaces - Increase marketing, expand measures offered, and prominently direct customers to also signup for other EE programs (either currently running programs, or to get in the pipeline for other programs once they resume).

These are just a few examples that should be considered as part of a comprehensive review of possible program modifications in response to the pandemic. While steps such as these are meant to help DEP navigate the unique challenges of the pandemic, I also encourage good data collection to capture lessons learned that could assist in making further refinements.

Q. WHAT OBSERVATIONS DO YOU HAVE REGARDING THE NEED FOR LOW INCOME ENERGY EFFICIENCY IN RESPONSE TO THE ECONOMIC IMPACTS OF THE PANDEMIC?

A. Despite the challenges, I believe there should be a large expansion of energy efficiency programs aimed at assisting vulnerable populations and financially struggling families who are being harmed by the economic turmoil of the pandemic, including widespread job loss. Recognizing the painful and financially

untenable situation this has created for large numbers of customers, DEP temporarily halted disconnections for non-payment. But for the more than 450,000 families that DEP serves who were already struggling economically[44] before the pandemic, the added financial stresses and uncertainty of the job market caused by the pandemic create a looming crisis that warrants urgent action to help customers reduce bills, especially now that the temporary moratorium on disconnections is ending and customers are being required to pay past due balances or enter into repayment plans.

Q. WHAT RECOMMENDATIONS DO YOU HAVE REGARDING DELIVERY OF LOW INCOME ENERGY EFFICIENCY PROGRAMS IN RESPONSE TO THE PANDEMIC?

A. Consistent with my general recommendation above in Section VI, I recommend that DEP and the Commission consider a significant expansion of funding for efficiency programs that substantially reduce energy use and customer bills for low-income customers. One possible approach would be to adapt and expand upon the methods developed by DEC last year in its Income-Qualified Weatherization pilot to proactively reach out to low- and moderate-income customers with high energy intensity across its service territory, as well as customers with accumulated past due bills. This deep energy saving program could significantly improve the financial wellbeing of these families, while potentially making the difference between customers successfully repaying past due bills or forcing the utility to write them off as uncollectable, at which point the unpaid costs are passed on to other ratepayers. Even though the total savings

[44] Estimate of DEP residential customers at or below 200% Federal Poverty Guidelines using customer counts from EIA Form 861 and poverty ratios from U.S. Census Bureau American Community Survey (ACS) Table S1701, Poverty Status in the Past 12 Months for North and South Carolina.

per project is lower than Income-Qualified Weatherization, strategic deployment with the expanded set of measures now available through Neighborhood Energy Savers[45] could also produce significant energy bill reductions, and the neighborhood outreach system could serve as another pipeline for identifying customers with high need that could be referred for even deeper efficiency investments.

Q HOW CAN ENERGY EFFICIENCY ASSISTANCE REDUCE THE INCIDENCE AND IMPACTS OF UNCOLLECTIBLE BILLS

A. Energy efficiency reduces energy consumption and lowers monthly electric bills, thereby freeing up money for customers that would otherwise be wasted. For customers who have struggled financially during the pandemic, energy efficiency can provide extra money at the crucial time when they must begin repaying past due electric bills or risk having their lights cut off. DEP knows exactly which customers have overdue balances and has the opportunity to design and deploy efficiency program services directly to those customers. An ideal time for doing so would be when Duke engages with individual customers to establish bill repayment plans. Rather than placing the onus on customers to know about and ask for these efficiency services, DEP could inform all customers who are setting up repayment plans that they will be automatically enrolled in efficiency programs if they are interested. The programs themselves could come in a number of different forms, ranging from customer self-install kits combined with a personalized virtual consultation, to deeper retrofit programs potentially patterned after those offered by DEC's Income Qualified Weatherization

[45] DEP recently informed Collaborative members that this program has still not resumed since it was suspended during the pandemic.

Program. Participation in efficiency programs could even be matched with partial debt forgiveness. Ultimately, these steps could make enough of a difference for customers to complete their repayment plans and prevent uncollectible bills from being passed on to the general body of ratepayers. Doing so could also prevent disconnections and the attendant consequences that can result, like damaged credit scores, health risks, and in some cases eviction.

Q. WHAT CAN THE COMMISSION DO TO ENSURE ENERGY EFFICIENCY SOLUTIONS ARE PUT IN PLACE IN RESPONSE TO COVID-19 DRIVEN NEED?

A. Having a plan to provide energy efficiency solutions to customers suffering from the economic consequences of the COVID-19 pandemic is a matter of great urgency. While I hope the Collaborative will continue to provide useful insights and recommendations to DEP on this matter in the coming months, the Commission should also consider the issue as soon as possible.

I recommend that the Commission state its support for deploying targeted energy efficiency programs to help customers mitigate the impact of COVID-19 and direct DEP to submit a specific plan by no later than thirty days after the Commission's Order in this docket that includes proposed modified program budgets, savings goals, and customer targeting strategies – with a particular emphasis placed on customers who are at risk of disconnection, such as those who have accrued unpaid electric bills as well as those who are elderly, disabled, have high energy burdens, and who have lost their employment as a result of the pandemic. If DEP is aware of regulatory obstacles that may need to be addressed to proceed with its plan, the Company should identify them and indicate what

additional benefit to customers could be indicated if corresponding regulatory action is taken.

Since the Commission can waive regulatory constraints to allow pilot projects, I encourage DEP, the Collaborative, and the Commission to work urgently on develop strategies for delivering energy efficiency services in ways that respond to current circumstances and aim to directly aid customers impacted by COVID-19 and the economic downturn as soon as possible.

VIII. Energy Efficiency Collaborative Update

Q. DID THE COMMISSION DIRECT DEP TO UNDERTAKE ANY SPECIFIC ACTIONS WITH REGARD TO THE COLLABORATIVE IN ITS 2019 ORDER IN DOCKET NO. E-2, SUB 1206?

A. Yes. In its December 12, 2019 Order Approving DSM/EE Rider and Requiring Filing of Customer Notice in Docket No. E-2, Sub 1206 ("Sub 1206"), the Commission ordered "That DEP and the Collaborative participants shall give particular attention to the five directives stated by the Commission in this Order, and DEP shall include in its 2020 DSM/EE Rider application a report on the progress made in satisfying the directives." The Commission summarized the five directives as follows:

1. DEP and the Collaborative participants should continue working to ensure that all interested persons have a reasonable and timely opportunity to contribute ideas for consideration by the Collaborative, especially with respect to proposals for new programs or modifications to existing programs.

2. The Collaborative should continue to place emphasis on developing EE programs to assist low-income customers in saving energy, and in developing EE programs that target savings in new construction, and especially in multi-family housing and manufactured housing.

3. The forecasted decline in DEP's DSM/EE savings in 2020 is a matter of concern. Consequently, the Collaborative should examine the reasons for the

forecasted decline, and explore options for preventing or correcting a decline in future DSM/EE savings.

4. The Collaborative should study the development of a standard annual reporting protocol. In addition, the Commission concludes that it would be helpful for DEP to include in its annual DSM/EE application a table that shows DEP's test period DSM/EE costs and savings, and that shows the same information for the previous five years.

5. With respect to recommendation number five by NC Justice Center, *et al.*, DEP witness Evans testified on rebuttal that DEP is pursuing and has discussed with the Collaborative an expansion of the Neighborhood Energy Saver program to include weatherization measures, and that the Company intends to file proposed modifications to the program to be effective in early 2020. In the event that the modifications filed by DEP in 2020 to the Neighborhood Energy Saver program do not satisfy the weatherization program changes sought by NC Justice Center, et al., DEP should continue to discuss with the Collaborative the adoption of an Income-Qualified Weatherization program comparable to that implemented by DEC.

Q. HAS THE COLLABORATIVE CONTINUED TO MEET BI-MONTHLY?

A. Yes. The Collaborative has met regularly, consistent with the Commission's Order. Full-day meetings were held in September, and November of 2019, and also in January, March, May and July of 2020. The Collaborative meeting in March was scheduled to be held in Raleigh, but due to the pandemic was held virtually instead, as were the meetings in May and July.

Q. DID DEP AND THE MEMBERS OF THE COLLABORATIVE COMPLY WITH THE COMMISSION'S ORDER REGARDING THE FIVE DIRECTIVES?

A. In part, though considerable work is still needed in all five areas. Following is a summary of the Collaborative's activities over the past year, as well as several recommendations that could help advance the five directives from last year's Commission Final Order.

Q. WHAT WERE THE PRINCIPAL FOCUS AREAS FOR THE COLLABORATIVE'S WORK OVER THE PAST YEAR?

A. In addition, to regular updates on program performance and EM&V reports by DEP staff, the Collaborative worked primarily on the following priorities:

1. Exploration and development of new program ideas and new program delivery channels:
   - Targeting affordable multifamily housing projects that utilize the Low-Income Housing Tax Credit program;
   - Expanding the midstream channel as a program delivery method for measures like HVAC systems and heat pump water heaters;
   - Modification of the Small Business Energy Saver program to include larger businesses and features of Efficiency as a Service program design (which Duke later dubbed SmartPath);
   - Savings attribution for codes and standards activities;
   - ENERGY STAR Retail Products Platform; and
   - Heat Pump Water Heater Programs.
2. Increasing savings impact for low-income customers
   - Understanding barriers and exploring potential solutions to deployment of an Income-Qualified Weatherization Program, comparable to the one currently operated by DEC;
   - Possible benefits of leveraging Helping Home Funds alongside ratepayer funded programs; and
   - Partnerships with low-income weatherization providers.
3. Examination of Portfolio Level Opportunities and Challenges for increasing overall efficiency savings

4. Development and presentation of "dashboard" formats for sharing elements of standard annual data reporting discussed in last year's DEP Rider proceeding.

Additionally, Duke Energy staff and members of the Collaborative reviewed and discussed the company's Market Potential Study, Winter Peaking Study (still under development), and explored some of the possible implications for Duke's 2020 IRP. The Collaborative is also now exploring cost-effectiveness testing protocols and assumptions, with a principal focus on non-energy benefits (NEBs). There are also early conversations underway on the intersection between DEP's energy efficiency programs and the COVID-19 pandemic.

Q. WHAT WAS THE FORMAT OF THE IN-PERSON COLLABORATIVE MEETINGS?

A. Agenda item recommendations were solicited by Duke or developed at the close of the prior Collaborative meeting. The meeting agendas were then put together by Duke and circulated to the full Collaborative for review and comment. Meeting materials were also circulated in advance of the meetings. Duke facilitated the meetings, and specific topic area discussions were led by various members of the Collaborative or by Duke Staff. Duke circulated meeting minutes and action items within a week or so after the meetings and subsequently scheduled topically specific working group calls.

Q. DID THE COLLABORATIVE HOLD ANY ADDITIONAL MEETINGS?

A. The Collaborative held working group phone meetings on specific topics in between the regularly scheduled full-day meetings. These meetings focused on several of the topics listed above, and typically were organized either to advance

themes that the Collaborative had prioritized or to prepare for more detailed discussion at the in-person meetings. Two open working sessions were also held in-person on the days preceding the July and November 2019 Collaborative meetings in Raleigh. Both sessions focused on identifying and digging into the topic of Portfolio Level Opportunities and Challenges. The working group meetings conducted virtually or by phone included discussions on low-income energy efficiency, weatherization program for DEP, Portfolio Level Opportunities and Challenges, data reporting, market potential study, cost effectiveness and non-energy benefits, on-bill financing, winter peaking study, and energy efficiency in the age of COVID-19. The level of tangible progress on these subjects has been mixed, but the commitment of time and the opportunity to dive deeper into specific subjects has been constructive overall and greatly appreciated.

Q. WHAT HAS DEVELOPED AS A RESULT OF DISCUSSIONS AT THE COLLABORATIVE REGARDING NEW PROGRAM IDEAS?

A. In the interest of increasing portfolio savings, DEP asked Collaborative members to provide possible program expansion ideas, based on the experience that several Collaborative members have from working in other jurisdictions. Collaborative members raised a number of program concepts that were captured in the Portfolio Level Opportunities & Challenges Summary Report, discussed further below. These include the following:

- DEC Residential New Construction
- DEP Income-Qualified Weatherization
- Energy Star Retail Products Platform

- Mobile/manufactured home programs
- Code Compliance Credit justification
- Leveraging savings from Advanced Metering Infrastructure
- Expanded midstream products, such as residential HVAC
- Leveraging alternative funding opportunities such as the Rural Energy for America Program
- Seeking new program opportunities to increase low income savings impact (including continued support for LIHTC developers)
- Explore expanded low-income program coordination with SC WAP

Since then, more detailed information has been provided on the ENERGY STAR Retail Products Platform (a national initiative for promoting high efficiency retail products) and programs that support the development of and facilitate compliance with enhanced codes and standards. These new program idea discussions are still in the early stages of discussion. Collaborative members are now also working with the Company to develop programs to offer heat pump water heater measures, and preparing recommendations related to efficiency for manufactured home residents, and programs for agricultural customers. Collaborative members have also presented information regarding strategies to increase midstream delivery channels for efficiency measures, and as noted above participated in a series of working group calls aimed at addressing challenges for deploying an Income-Qualified Weatherization program comparable to the one offered by DEC. Duke appears to be finding Collaborative

member contributions to be of sufficient merit that I hope the Company will soon begin bringing new program applications to the Commission for approval.

Q. ARE THERE OTHER PROGRAM CONCEPTS THAT WERE DISCUSSED AT THE COLLABORATIVE?

A. The Collaborative had several discussions with Duke program staff prior to the Company submitting a program application filing to amend its Small Business Energy Saver, which includes the addition of deeper savings opportunities through SmartPath. Duke's willingness to bring this program concept forward at an early stage was very well received by Collaborative members. While it would have been appreciated if the engagement had continued through the remainder of the program development process, the experience was a meaningful step forward for how Duke and the Collaborative work together on programs prior to applications being submitted to the Commission.

Q. WHAT PROGRESS HAS THE COLLABORATIVE MADE TOWARDS ITS PRIORITY TO INCREASE LOW-INCOME SAVINGS IMPACT?

A. Discussion around increasing savings impact for low-income customers at the Collaborative has frequently centered on challenges and obstacles faced by the Company to expanding low-income savings. But participants have gained valuable insights that should help the group work towards possible solutions going forward. If more tangible results are to be achieved at the Collaborative, I expect additional guidance from the Commission may be needed, as I recommend in Section VI above.

Q. WHY DID THE COLLABORATIVE PRIORITIZE PORTFOLIO LEVEL OPPORTUNITIES AND CHALLENGES?

A. The Collaborative decided to prioritize examination of Portfolio Level Opportunities and Challenges in 2019 as a precursor to developing recommendations to help increase Duke's overall efficiency savings levels. The group recognized that increasing portfolio savings would require responding to the challenges created by diminishing cost-effectiveness resulting from decreasing avoided costs and more efficient baselines. The Collaborative's work on the subject culminated in a year-end summary report that is included as Exhibit FWB-10.

The report began with the following statements:

> "The choice to focus on Portfolio Level Opportunities and Challenges was driven by a desire to establish a common understanding among Collaborative participants around the cross-cutting factors that could impact the potential for expanding energy efficiency savings through individual programs. It also provided a way to identify the broader dynamics that would impact total energy efficiency savings in the years to come."
>
> "Through regular convenings of utility staff, energy efficiency advocates and other key stakeholders, the Collaborative strives to facilitate Duke's ability to increase total savings from its energy efficiency and demand response program portfolios and to expand the number and types of customers participating in the company's EE/DSM programs."

Topics covered in the report ranged from Collaborative member perspectives on the 1% savings goal, market dynamics that support and/or limit utility efficiency savings, related state policy and regulatory matters, and potential new programs and delivery channels that could lead to increased efficiency savings.

Q. WHAT OTHER ISSUES DID THE COLLABORATIVE IDENTIFY UNDER THE BROAD CATEGORY OF PORTFOLIO LEVEL OPPORTUNITIES AND CHALLENGES?

A. The group recognized that annual kWh savings is not the only relevant metric for efficiency portfolio performance and that consideration of multiple approaches to DSM/EE delivery could yield additional value. The other metrics identified included:

- Lifecycle savings targets that give the utility credit for a measure's lifetime savings for every year in which the savings occur, rather than only recognizing the first year savings in the year the measure is installed.
- Cumulative savings where a target is set over several years and the incremental savings accumulate year over year.
- Capacity savings targets that recognize the beneficial effects of demand response and efficiency programs that shift load to periods of lower demand.
- Customer-related targets that set specific goals to encourage efforts to increase savings among historically underserved demographics.
- Growth-related targets focus on proactively capturing savings from new load and new customers coming onto the system.

Q. HAS THE COLLABORATIVE IDENTIFIED SOLUTIONS TO DEP'S DIMINISHING COST-EFFECTIVENESS?

A. The Collaborative first discussed industry best practices for assessing program cost-effectiveness to ensure that Collaborative members were well-informed and thus able to have productive discussions on issues and potential solutions. Through these discussions, some Collaborative members came to understand that the application of the Total Resource Cost ("TRC") test as used by DEP does not

fully reflect the monetary value of the benefits that energy efficiency provides to program participants. As a result, some of the Collaborative participants came to support a recommended change to DEC's mechanism, in which the Utility Cost Test, ("UCT") rather than the TRC test would determine cost-effectiveness.[46]

As discussed above, the Collaborative also continues to seek new program opportunities and delivery channels that reduce cost and increase benefits to maintain value and make up for lower avoided costs and rising baselines.

Q. WERE THERE OTHER TOPICS RELATED TO COST-EFFECTIVENESS DISCUSSED BY THE COLLABORATIVE?

A. The Collaborative also discussed the inclusion of a more complete accounting for the benefits of energy efficiency in cost-effectiveness testing. This could include the addition of both additional energy benefits (such as natural gas savings and reduced costs from uncollectable bills) and so-called non-energy benefits ("NEB"), such as reduced operations and maintenance costs, health benefits, and lower emissions of harmful pollutants. The Collaborative is presently considering how such benefits could be quantified so that in the future they could be included in TRC test results to provide a full accounting of cost-effectiveness results using this test. This effort is notable in part because the corresponding working group is preparing a set of specific written recommendations for the Commission on a defined completion timeline, which is an approach I endorse for other priorities at the Collaborative as well.

[46] Merger Settlement (*supra* Note 20).

Q. HAS THE COMPANY PROVIDED ANY UPDATES REGARDING THE STANDARD REPORTING TEMPLATE THAT YOU DISCUSSED IN YOUR TESTIMONY IN DOCKET NO. E-2, SUB 1206?

A. The Company facilitated a phone conference with stakeholders on this topic, and then provided a preview of its development work in this area during the March Collaborative meeting. Company Witness Evans states in his Direct Testimony that "The Collaborative has studied and developed, for its use, reporting protocols for future Collaborative discussions and the Company has provided, on Evans Exhibit 12, a table that shows DEP's test period DSM/EE costs and savings and the same information for the previous five years."[47] More recent requests for additional information, including associated workbooks, have hit roadblocks, but this effort is still ongoing.

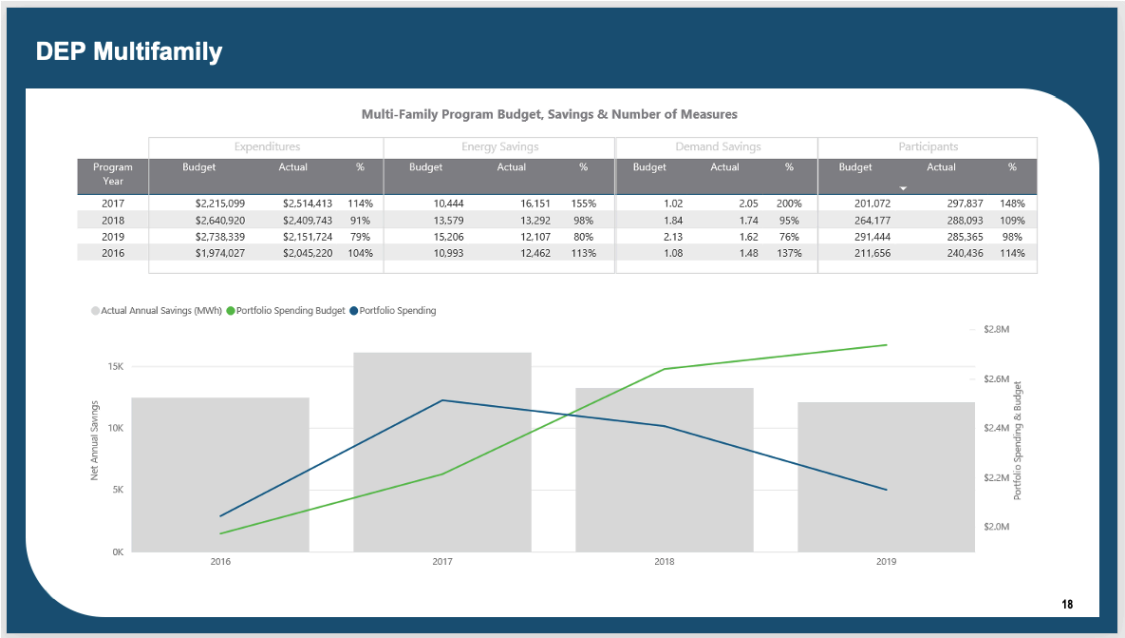
Q. WHAT WAS INCLUDED IN THE COMPANY'S PRESENTATION TO THE COLLABORATIVE?

A. At the March 2020 Collaborative meeting, the Company presented a prototype visual "dashboard" that compared projections to reported values for expenditures, savings, and participation, by program as well as at the portfolio level. The dashboard allowed one to quickly understand, for the most recent four years of program implementation, how the program achievements in those categories compared with the Company's projections at the outset of each program year. A sample from the Company's presentation, for the Multifamily Program, is provided below in Figure 1. The full presentation is attached as Exhibit FBW-15.[48]

[47] Evans Testimony, p. 13 lines 1-4.

[48] DEC noted some minor formatting issues in some of the materials included in the draft presentation, which its team will correct if it has not already done so.

Figure 1: DEP "Dashboard" for Multifamily Program



Q. IN WHAT WAY IS THIS USEFUL?

A. The dashboard shows program performance at a glance, and importantly also shows trends in budgets, actual costs, and savings. For example, Figure 1 shows that program savings peaked in 2017 at over 16,000 MWh and then declined over each of the next two years to just over 12,000 MWh. Prior to the development of this dashboard, drawing year over year comparisons or comparisons of projected to actual savings would have required manually tracking down the data in four different reports and assembling it to provide a year by year comparison. The prototype dashboard is a vast improvement.

Q. DO YOU RECOMMEND FURTHER IMPROVEMENTS TO THE COMPANY'S DATA REPORTING?

A. Duke has asked members of the Collaborative for feedback on the prototype and other data needs, and it is expected that it will continue to be refined through these Collaborative discussions. As noted above, this effort has hit some

roadblocks recently with respect to accessing the electronic workbooks containing the information provided in the dashboard, but there may still be options for expanding the flow of useful information going forward.

Q. WHAT SPECIFIC REQUESTS DO YOU HAVE OF DEP REGARDING PROGRAM EVALUATION AND REPORTING?

A. As noted above, DEP has shown a real willingness to provide useful topline, trend, and comparative data through its program performance reporting to the Collaborative. The Company also appears willing to provide additional data and respond to input from Collaborative members on further refinements to its data reporting.

I recommend that DEP continue to work with the Collaborative to refine its data reporting so that Collaborative members can better understand program and portfolio performance and identify opportunities and solutions that lead to expanded efficiency savings.

Q. ARE THERE ANY SPECIFIC RECOMMENDATIONS YOU WOULD LIKE TO MAKE TO IMPROVE THE VALUE PROVIDED BY THE COLLABORATIVE?

A. In general, scheduled deadlines and written work product improve work quality and lead to better outcomes from stakeholder working groups like the Collaborative. The Portfolio Level Opportunities and Challenges Summary Report and current efforts to identify and quantify non-energy benefits are two examples where this approach is working. The work of the Collaborative in other areas would benefit from having project timelines and concrete work product, particularly around developing plans to attain 1% annual savings, increasing impact from low-income efficiency programs, and developing approaches to

adapt energy efficiency delivery in response to new needs and challenges brought on by the pandemic and economic downturn. In each of these efforts, deadlines and work products could help to maintain momentum and ultimately enable attribution of certain outcomes to the work of the Collaborative. It would also provide a more tangible opportunity for the Commission to track the work of the Collaborative for matters it has referred to the group.

I recommend DEP work with Collaborative members to establish and utilize project deadlines and create work products for select activities, including but not limited to a report related to preventing or correcting future savings declines and achieving or exceeding 1% annual efficiency savings.

IX. DSM/EE Rider Intersection with Related Public Policy Considerations

Q. DO THESE DSM/EE RECOVERY RIDER PROCEEDINGS INTERSECT WITH OTHER POLICIES BEFORE THE NORTH CAROLINA UTILITIES COMMMISSION?

A. Yes. The Collaborative's 2019 Portfolio Level Opportunities & Challenges Summary Report noted that state policy and regulatory matters "have a direct or indirect effect on the Company's ability to achieve energy savings through regulated customer programs."[49] Examining these types of policy interactions between DEP's DSM/EE Recovery Rider proceedings and related matters before the Commission serves multiple purposes. It provides valuable context on past and future savings levels and allows us to consider whether there are policy gaps that warrant attention to improve energy efficiency impact for customers. In my testimony in the recent DEC DSM/EE Rider Docket No. E-7, Sub 1230, I identified several related Commission policies that are equally relevant to DEP:

[49] Ex. FBW-10.

- Integrated Resource Planning
- New Program and Program Modification Applications
- Review of the performance mechanism, rate impact, and possible efficiency targets
- Rate Cases and Rate Design
- DSM/EE Rider of Duke Energy's sister company

I have attached an excerpt from my DEC testimony[50] that covers these interrelated policy issues.

Q. HOW DO THE DSM/EE RECOVERY RIDER PROCEEDINGS INTERSECT WITH THE GOVERNOR'S EMISSION REDUCTION COMMITMENTS?

A. The Collaborative identified a connection between Duke's energy efficiency efforts and Governor Roy Cooper Executive Order 80, issued on October 29, 2018, wherein he established "North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy."[51] The corresponding NC Clean Energy Plan ("CEP")[52] outlines a path to reduce electric power sector greenhouse gas emissions by 70% below 2005 levels by 2030 and attain carbon neutrality by 2050. The CEP expounded on the importance of energy efficiency for achieving the state's goals. It also incorporated a number of recommendations

[50] Exhibit FBW-16, Section VI of Testimony of Forest Bradley-Wright
[51] North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy, Exec. Order No. 80 (Oct. 29 2018) at 1.
[52] In 2019, the Nicholas Institute at Duke University undertook creation of a North Carolina Energy Efficiency Roadmap that substantially informed the Clean Energy Plan prepared by the state's Department of Environmental Quality.

from the stakeholder-generated North Carolina EE Roadmap,[53] including many that should be done in partnership with DEP and the Collaborative.

With regard to the Clean Energy Plan, I reiterate that it would be useful for Duke to provide emissions reduction data associated with its DSM/EE portfolio performance as part of its annual Rider filings. Accordingly, I recommend the Commission direct DEP to provide carbon emissions reduction figures associated with achieved savings (annual and cumulative) in its annual Rider filings and correlate those reductions to both North Carolina's Clean Energy Plan emissions reduction targets and the Company's own corporate carbon emissions reduction goals.

X. Conclusion

Q. DO YOU HAVE ANY CONCLUDING STATEMENT?

A. I would like to thank the Commission for the opportunity to submit this testimony. I look forward to continuing to work with Duke, the Commission, Public Staff, and the Collaborative to increase efficiency savings for customers as an integral part of the transition to a clean energy future. This concludes my testimony.

[53] In 2019, the Nicholas Institute at Duke University undertook creation of a North Carolina Energy Efficiency Roadmap that substantially informed the Clean Energy Plan prepared by the state's Department of Environmental Quality. https://nicholasinstitute.duke.edu/publications/north-carolina-energy-efficiency-roadmap.

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 26th day of August, 2020.

s/ David L. Neal

David L. Neal

Forest Bradley-Wright

4532 Bancroft Dr. New Orleans, LA 70122
(504) 208-7597; forest@forestwright.com

Docket E-2, Sub 1252
FBW Exhibit 1

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 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, 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, 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

SACE et al.
Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-17

DUKE ENERGY PROGRESS, LLC

Request:

Please provide a calculation of cumulative 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 from 2014 through 2019.

Response:

Please refer to "CCL-SACE DR1-17.xlsx."

CCL-SACE%20DR1-17.xlsx

Duke Energy Progress

SACE DR 1-17

	At Generator	At Meter	2014 Res LL	4.23%	
			2014 Non-Res LL	4.09%	
			2015-2019 LL	5.10%	
2014 Incremental Energy Savings	291,031,950	278,927,402		kWh	Docket E-2 Sub 1145 Exh 1 pg. 1
2014 Opt Out Electricity Sales - NC	11,300,733,172	10,838,533,185		kWh	workpapers
2014 Opt Out Electricity Sales - SC	2,794,534,233	2,680,237,783		kWh	workpapers
2013 System Retail Billed Electricity Sales	44,997,669	43,132,132		MWh	2013 RAC Report
2015 Incremental Energy Savings	325,816,928	310,006,592		kWh	Docket E-2 Sub 1174 Ehx 1 pg. 1
2015 Opt Out Electricity Sales - NC	11,538,253,881	10,978,357,641		kWh	Miller Exhibit 6
2015 Opt Out Electricity Sales - SC	2,852,954,257	2,714,514,041		kWh	Exhibit 3 pg 1 of 2
2014 System Retail Billed Electricity Sales	46,268,370	44,023,187		MWh	2014 RAC Report
2016 Incremental Energy Savings	339,917,574	323,423,001		kWh	Docket E-2 Sub 1206 Exh 1 pg. 1
2016 Opt Out Electricity Sales - NC	11,788,785,866	11,216,732,508		kWh	Miller Exhibit 6
2016 Opt Out Electricity Sales - SC	2,870,425,716	2,731,137,694		kWh	Exhibit 3 pg 1 of 2
2015 System Retail Billed Electricity Sales	46,114,059	43,876,365		MWh	2015 RAC Report
2017 Incremental Energy Savings	378,262,008	359,906,764		kWh	Docket E-2 Sub 1206 Exh 1 pg. 3
2017 Opt Out Electricity Sales - NC	12,046,836,667	11,462,261,339		kWh	Miller Exhibit 6
2017 Opt Out Electricity Sales - SC	2,863,405,551	2,724,458,184		kWh	Exhibit 3 pg 1 of 2
2016 System Retail Billed Electricity Sales	45,819,130	43,595,747		MWh	2016 RAC report
2018 Incremental Energy Savings	399,097,704	379,731,403		kWh	Docket E-2 Sub 1252 Exh 1 pg. 1
2018 Opt Out Electricity Sales - NC	12,347,900,784	11,748,716,255		kWh	Miller Exh 6, Line 10
2018 Opt Out Electricity Sales - SC	2,957,330,614	2,813,825,513		kWh	Exhibit 3 pg 1 of 2, Line 14
2017 System Retail Billed Electricity Sales	45,248,506	43,052,813		MWh	2017 RAC Report
2019 Incremental Energy Savings	371,219,630	353,206,118		kWh	Docket E-2 Sub 1252 Exh 1 pg. 5
2019 Opt Out Electricity Sales - NC	12,028,707,060	11,445,011,475		kWh	Miller Exh 6, Line 10
2019 Opt Out Electricity Sales - SC	2,863,405,551	2,724,458,184		kWh	Exhibit 3 pg 1 of 2, Line 14
2018 System Retail Billed Electricity Sales	47,498,781	45,193,892		MWh	2018 RAC Report

17. 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 2019, with and without adjustment for line loss.

2014 Incremental Energy Savings	291,031.95	MWh
2013 System Retail Electricity Sales	44,997,669	MWh
2013 System Retail Electricity Sales, net of 2014 Opt Out	30,902,402	
Savings as % of 2013 Sales	0.65%	
Savings as % of 2013 Sales, net of 2014 Opt Out	0.94%	
2015 Incremental Energy Savings	325,816.93	MWh
2014 System Retail Electricity Sales	46,268,370	MWh
2014 System Retail Electricity Sales, net of 2015 Opt Out	31,877,161	
Savings as % of 2014 Sales	0.70%	
Savings as % of 2014 Sales, net of 2015 Opt Out	1.02%	
2016 Incremental Energy Savings	339,917.57	MWh
2015 System Retail Electricity Sales	46,114,059	MWh
2015 System Retail Electricity Sales, net of 2016 Opt Out	31,454,848	
Savings as % of 2015 Sales	0.74%	
Savings as % of 2015 Sales, net of 2016 Opt Out	1.08%	

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DUKE ENERGY PROGRESS, LLC

Request:

Please provide a spreadsheet of total energy savings achieved by each of the Company's DSM/EE programs, in GWh, for 2017, 2018 and 2019.

Response:

Please see attached file "SACE DR 1-20" for spreadsheet of total energy savings in year requested.

SACE%20-%20DR1-20.xlsx

SACE DR 1-20

1-20. Please provide a spreadsheet of total energy savings achieved by each of the Company's DSM/EE programs, in GWh, for 2017, 2018 and 2019

	Residential Programs	2017 System Energy Reduction (GWh)	2018 System Energy Reduction (GWh)	2019 System Energy Reduction (GWh)
	EE Programs			
1	Appliance Recycling Program	-	-	-
2	Appliances and Devices	-	-	20.46
3	Energy Education Program for Schools	2.35	2.56	3.28
4	Energy Efficient Lighting	29.68	25.64	33.35
5	Residential Service – Smart $aver	7.36	7.23	6.76
6	Low Income Weatherization Pilot	-	-	0.13
7	Multi-Family Energy Efficiency	16.15	13.29	12.11
8	Neighborhood Energy Saver	2.20	3.54	3.70
9	Residential Energy Assessments	7.73	7.75	7.83
10	Residential New Construction	12.25	14.26	16.34
11	Save Energy and Water Kit	25.02	15.25	-
12	Total for Residential Conservation Programs	102.74	89.53	103.96
13	My Home Energy Report (1)	117.85	164.07	154.60
14	Total Residential Conservation and Behavioral Programs	220.59	253.60	258.56
15	EnergyWise	-	-	-
16	Total Residential	220.59	253.60	258.56

		2017 System Energy Reduction (GWh)	2018 System Energy Reduction (GWh)	2019 System Energy Reduction (GWh)

Non-Residential Programs

EE Programs

17	**Business Energy Report**	-	-	-
18	**Energy Efficient Lighting**	7.87	6.76	8.78
19	**Energy Efficiency for Business**	103.37	-	-
20	**Non-Residential Smart $aver - Prescriptive**	-	84.98	54.59
21	**Non-Residential Smart $aver Custom**	-	11.90	13.13
22	**Non-Residential Smart $aver Performance Incentive**	0.44	1.52	1.36
23	**Small Business Energy Saver**	45.01	40.30	34.74
24	**Total for Non-Residential Conservation Programs**	156.68	145.46	112.60
25	**EnergyWise for Business**	0.98	0.04	0.06
26	**Commercial, Industrial, & Governmental Demand Response**	-	-	-
27	**Total for Non-Residential DSM Programs**	0.98	0.04	0.06
28	**Total Non Residential**	157.67	145.50	112.66
29	**Total All Programs**	378.26	399.10	371.22
30	DSDR	35.52	47.82	38.08
31	**Total with DSDR**	413.78	446.91	409.30

(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 PROGRESS, LLC

Request:

For the years 2019, 2020 (forecasted), and 2021 (forecasted), please identify the following:

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

Response:

DEP does not forecast future opt-outs. Actual 2018 opt-outs are used as a proxy for estimating projected 2020 opt-outs. Actual 2019 opt-outs are used as a proxy for estimating projected 2021 opt-outs. Docket E-2 Sub 1252 Listebarger Exhibit 6 provides actual 2019 and projected 2021 opt outs and actual 2019 and forecasted 2021 sales. Docket No. E-2 Sub 1206 Miller Exhibit 6 provides projected 2020 opt outs and 2020 forecasted sales.

To summarize:

2019:
Non-residential DSM opt outs 12,105,104,831
Non-residential EE opt outs 12,036,461,522
Non-residential sales 21,573,532,827

2020 (projected Docket E-2 Sub 1206):
Non-residential DSM opt outs 11,850,797,144
Non-residential EE opt outs 11,748,716,255
Non-residential sales 21,405,950,172

2021 (projected Docket E-2 Sub 1252):
Non-residential DSM opt outs 12,105,104,831
Non-residential EE opt outs 12,036,461,522
Non-residential sales 21,169,125,507

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Data Request No. 1
Item No. 1-4

DUKE ENERGY PROGRESS, LLC

Request:

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

a. UCT and TRC cost-effectiveness test scores with corresponding total costs and benefits for 2015, 2016, 2017, 2018, and 2019, 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 2020 and 2021 forecasts;
c. The measures and programs offered in 2017, 2018, and 2019 that were removed because there were deemed no longer cost effective for 2020 and 2021;
d. Measures and programs that have UCT and/or TRC cost effectiveness score between 0.85 and 0.99 that were not included in DEP's 2020 and 2021 portfolios along with their respective cost effectiveness scores and projected kW and kWh savings impact that would have been expected if they had been included.

Response:

Please refer to "SACE DR 1-4 a and b.xlsx" and "SACE DR 1-4 c and d.docx."


SACE%20DR%201-4%20a%20and%20b.xl


SACE%20DR%201-4%20c%20and%20d.dc

CCL-SACE DR1-4

1-4.For each program in DEP's DSM/EE portfolio, please provide:
a.UCT and TRC cost-effectiveness test scores with corresponding total costs and benefits for 2015, 2016, 2017, 2018, and 2019, 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 2020 and 2021 forecasts;

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

	2015						2016						2017						2018						2019						2020						2021					
a/b	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	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	1,508,567	1,220,465	486,368	-	1.24	2.05	76,177	(129,701)	(50,266)	-	-0.59	-0.96	-	5,339	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Appliances and Devices	-	-	-	-			-	-	-	-			-	-	-	-			-	-	-	-			10,832,320	2,160,799	1,099,624	1,371,641	5.01	4.45	13,327,506	913,406	677,462	629,216	14.59	15.40	13,099,464	1,552,345	946,542	687,571	8.44	10.13
Energy Education Program for Schools	1,576,241	703,689	232,771	-	2.24	3.35	1,693,087	783,357	213,524	-	2.16	2.97	1,376,442	799,072	216,906	-	1.72	2.36	1,365,918	676,815	191,202	-	2.02	2.81	1,039,694	747,483	186,360	200,113	1.39	1.37	1,213,998	900,402	253,596	236,013	1.35	1.38	1,372,059	998,933	280,177	264,916	1.37	1.39
EnergyWise Home	32,617,641	5,205,545	4,140,396	-	6.27	30.62	70,854,171	6,887,758	5,487,905	-	10.29	50.62	62,410,503	6,502,032	6,094,495	-	9.60	153.14	56,020,297	5,817,271	5,179,747	-	9.63	87.87	53,221,850	5,806,874	5,617,524	-	9.17	281.08	42,915,886	8,148,740	5,454,030	-	5.27	15.93	13,517,088	6,906,770	4,588,239	-	1.96	5.83
Home Energy Improvement	6,858,804	5,298,232	3,923,669	6,312,662	1.29	0.89	6,991,688	5,692,422	4,298,396	9,582,983	1.23	0.64	6,313,442	6,654,031	5,151,334	11,690,091	0.95	0.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neighborhood Energy Saver	1,134,613	1,586,061	938,050	-	0.72	1.75	1,167,680	1,943,051	1,203,816	-	0.60	1.58	1,117,743	1,702,549	1,177,799	-	0.66	2.13	1,835,857	1,845,739	1,264,146	-	0.99	3.16	1,438,897	1,671,298	1,095,666	1,174,420	0.86	0.82	933,642	1,888,543	1,312,894	1,312,750	0.49	0.49	1,834,467	2,102,637	1,727,124	1,674,021	0.87	0.90
Multi-Family Energy Efficiency Program	9,816,135	2,615,745	995,800	-	3.75	6.06	7,155,924	1,936,126	697,690	-	3.70	5.78	10,163,052	2,403,372	961,410	-	4.23	7.05	8,187,422	2,409,743	768,609	-	3.40	4.99	6,131,940	2,156,484	567,005	640,104	2.84	2.75	7,175,347	2,710,531	703,594	696,881	2.65	2.65	7,060,550	2,673,548	746,801	734,182	2.64	2.65
My Home Energy Report	5,791,217	5,808,941	-	-	1.00	1.00	7,524,461	5,575,910	-	-	1.35	1.35	6,972,509	6,454,921	-	-	1.08	1.08	9,837,510	7,687,891	-	-	1.28	1.28	11,676,738	6,299,307	-	-	1.85	1.85	6,414,470	6,349,938	-	-	1.01	1.01	11,325,840	7,016,406	-	-	1.61	1.61
Residential Energy Assessments	-	-	-	-			4,853,362	1,342,291	202,452	-	3.62	4.26	5,512,365	1,781,190	213,628	12,908	3.09	3.49	5,362,264	1,851,965	242,814	10,940	2.90	3.31	4,344,111	2,113,798	168,539	189,464	2.06	2.03	3,860,896	1,792,502	162,192	135,253	2.15	2.19	7,550,953	3,713,085	343,145	473,797	2.03	1.96
Residential New Construction	12,081,218	7,447,258	6,222,820	8,483,795	1.62	1.24	19,280,066	8,903,911	7,975,698	12,942,488	2.17	1.39	21,481,837	11,156,278	9,654,017	15,834,693	1.93	1.24	22,730,532	13,189,949	11,169,768	9,823,602	1.72	1.92	19,396,567	15,113,951	12,656,251	11,233,867	1.28	1.42	18,677,081	12,060,743	10,367,731	2,096,611	1.55	4.93	19,911,473	15,182,173	13,448,496	12,650,072	1.31	1.38
Energy Efficient Lighting	47,462,180	16,392,094	13,864,906	7,185,615	2.90	4.89	44,883,085	16,511,512	14,347,450	6,858,992	2.72	4.97	39,549,493	11,689,156	10,354,220	7,648,783	3.38	4.40	33,699,094	9,815,496	7,837,838	-	3.43	17.04	35,415,049	13,447,031	11,329,673	7,252,374	2.63	3.78	9,514,559	4,732,539	3,515,957	2,304,340	2.01	2.70	7,651,434	3,850,337	3,225,136	1,957,577	1.99	2.96
Save Energy and Water Kit	-	-	-	-			13,873,513	638,558	371,460	-	21.73	51.94	17,187,186	849,614	622,934	-	20.23	75.82	10,188,660	825,279	408,963	-	12.35	24.47	-	-	-	-			-	-	-	-			-	-	-	-		
Residential Service - SmartSaver	-	-	-	-			-	-	-	-			-	-	-	-			6,288,314	7,168,833	5,595,885	9,077,791	0.88	0.59	5,417,341	6,411,758	4,338,824	6,539,280	0.84	0.63	5,047,920	3,148,287	2,771,000	4,807,992	1.60	0.97	2,764,092	4,842,705	2,909,158	5,023,872	0.57	0.40
Low Income Weatherization Pilot																									75,533	27,356	19,092	-	2.76	9.14	-	-	-	-			-	-	-	-		
Energy Efficiency for Business																									-	-	-	-			-	-	-	-			-	-	-	-		
Business Energy Report	-	74,374	-	-	0.00	0.00	309,365	65,808	-	-	4.70	4.70	737	19,432	-	-	0.04	0.04	-	-	-	-	-	-	-	-	-	-			-	-	-	-			-	-	-	-		
Non-Res SmartSaver Performance	-	-	-	-			-	24,482	-	-	0.00	0.00	335,899	140,661	46,706	209,151	2.39	1.11	808,778	201,559	138,274	646,499	4.01	1.14	606,333	267,186	129,784	482,944	2.27	0.98	3,692,143	912,376	691,603	3,506,083	4.05	0.99	1,721,451	608,576	392,157	1,358,245	2.83	1.09
Commercial, Industrial, & Governmental Demand Response	1,025,439	569,444	529,549	-	1.80	25.70	(10,684,733)	-	-	-			3,551,967	1,393,650	1,269,200	-	2.55	28.54	2,124,692	1,154,642	1,187,855	-	1.84	(63.97)	4,394,068	1,811,347	1,242,733	-	2.43	7.73	11,315,319	6,148,693	5,745,056	-	1.84	28.03	4,596,557	2,590,719	2,435,930	-	1.77	29.70
EnergyWise for Business	-	65,456	-	-	0.00	0.00	164,697	1,053,456	46,835	-	0.16	0.16	858,655	1,329,140	-	-	0.65	0.65	(505,938)	2,108,030	629,260	-	(0.24)	(0.34)	540,478	2,412,880	1,005,890	-	0.22	0.38	826,038	3,062,633	1,255,184	-	0.27	0.46	941,042	3,446,547	1,724,705	75,666	0.27	0.52
Small Business Energy Saver	25,239,036	9,780,196	8,975,182	12,857,392	2.58	1.85	32,988,897	8,838,269	8,173,844	13,318,382	3.73	2.36	26,945,514	8,383,422	7,733,531	12,633,064	3.21	2.03	22,297,905	8,858,213	7,857,678	11,929,015	2.52	1.72	16,064,477	7,301,790	6,380,717	10,258,377	2.20	1.44	19,156,040	7,634,059	7,006,137	11,748,292	2.51	1.55	14,886,828	7,420,102	6,756,705	11,361,733	2.01	1.24
Non-Residential Smart Saver Prescriptive	-	-	-	-			-	-	-	-			-	-	-	-			65,186,982	11,515,913	9,131,886	23,055,883	5.66	2.56	34,686,216	7,877,838	5,763,360	12,264,290	4.40	2.41	38,000,115	10,434,481	7,549,297	17,041,685	3.64	1.91	39,254,442	11,648,055	8,726,018	20,761,927	3.37	1.66
Non-Residential Smart Saver Custom	-	-	-	-			-	-	-	-			-	-	-	-			8,889,904	2,174,163	1,111,868	4,935,057	4.09	1.48	9,658,177	2,776,482	1,580,493	4,849,778	3.48	1.60	10,348,052	3,972,088	2,256,731	7,098,008	2.61	1.17	10,047,403	3,932,557	2,301,091	7,130,008	2.55	1.15
Total Portfolio	**175,013,463**	**62,993,952**	**45,026,245**	**37,056,984**	**2.78**	**3.18**	**248,956,375**	**73,471,249**	**54,177,117**	**71,471,423**	**3.39**	**2.74**	**281,668,716**	**82,053,151**	**61,898,563**	**99,811,427**	**3.43**	**2.35**	**254,318,192**	**77,301,500**	**52,715,794**	**59,478,787**	**3.29**	**3.03**	**214,939,790**	**78,403,665**	**53,181,535**	**56,456,650**	**2.74**	**2.63**	**192,419,012**	**74,809,960**	**49,722,463**	**51,613,125**	**2.57**	**2.51**	**157,535,145**	**78,485,496**	**50,551,423**	**64,153,584**	**2.01**	**1.71**

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 et al.
Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-14
Page 1 of 1

DUKE ENERGY PROGRESS, LLC

Request:

Please provide a detailed breakdown of the Buncombe pilot project associated with DEP's Income-Qualified Energy Efficiency and Weatherization Assistance Program including budgets, number of customers served, kW and kWh energy savings, and any work papers associated with any cost-effectiveness calculations that have been conducted. Also, please provide the findings of any qualitative and quantitative review of the pilot, including lessons learned. Please provide an indication of DEP's intentions regarding any planned future programmatic activities related to the specific approaches used in this pilot program.

Response:

Information concerning the Buncombe Pay for Performance pilot is provided in the attached document.

Response%20Docum
ent%20-%20SACE%2

Pay for Performance Pilot

Budget

2019 Forecast	2019(Actuals)	2020 Forecast	2020(YTD)*	2021 Forecast
$19,462	$22,282	$27,400	$5,751	$27,400

*2020 YTD results are affected by the Covid-19 work stoppage

Total Customers Served- Jan. 2019 – July 2020

142 participants received 1,712 total energy saving measures

Energy Savings – Jan. 2019 – July 2020

kWh - 155,710

KW (Summer) - 28.01

KW (Winter) - 32.77

Cost-effectiveness Evaluation

No new cost-effectiveness evaluations have been performed since the original program filing.

Lesson Learned

The Pay for Performance Pilot has been well received by the two participating agencies. The program has been an efficient method to assist the two non-profit weatherization providers with funding that increased their ability to provide energy efficiency savings to applicable Duke Energy Progress customers. Also, the work effort required to apply for the rebates was not burdensome for the participating agencies. The Company determined through administering the program that some non-weatherization organizations that may want to participate may need training verifying client eligibility.

Planned Future Programmatic Activities Related to the Pilot

Current evaluation of the accomplishments and successes of the program are positive and at this point in the pilot there is favorable opinion for expanding the program to other DEP weatherization agencies upon completion. Upon completion, plans are to further evaluate the cost-effectiveness to confirm any recommendations for approval to expand the program.

SACE et al.
Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-16

DUKE ENERGY PROGRESS, LLC

Request:

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

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

Response:

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

CCL-SACE%20DR1-16.xlsx

E-2, Sub 1252
Exhibit FBW -7

Duke Energy Progress

CCL_SACE DR 1-16

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

16a. Please provide a calculation of DSM/EE portfolio savings with and without line loss (1) as a percentage of total annual sales; and (2) as a percentage of annual sales to non-opt-out customers:
a. for the year 2019 (as a percentage of 2018 retail sales);

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

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

16b. Please provide a calculation of DSM/EE portfolio savings with and without line loss (1) as a percentage of total annual sales; and (2) as a percentage of annual sales to non-opt-out customers:
b. forecasted for the year 2021 (as a result of forecasted 2020 sales).

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

SACE et al.
Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-24
Page 1 of 1

DUKE ENERGY PROGRESS, LLC

Request:

Please provide an explanation and analysis related to the principal factors leading to forecasted declines for DEP's 2020 and 2021 projections compared to the savings levels achieved in 2017, 2018, and 2019. Please describe the drivers and where the effects show up, including:

a. What are the top five measure categories that account for the greatest reduction impacts?
b. What internal and / or external factors led to these reductions?
c. Which programs are the most affected and what are the corresponding impacts of each major factor on each program?
d. Which programs are the most affected by assumed changes in customer participation and what are the corresponding impacts on each program?
e. Please provide all relevant work papers used to provide responses to the above questions.

Response:

Please refer to "SACE DR 1-24.docx" and "SACE DR 1-24.xlsx."


SACE%201-24.docx


SACE%20DR%201-24.xlsx

1-24. Please provide an explanation and analysis related to the principal factors leading to forecasted declines for DEP's 2020 and 2021 projections compared to the savings levels achieved in 2017, 2018, and 2019. Please describe the drivers and where the effects show up, including:

a. What are the top five measure categories that account for the greatest reduction impacts?

Res/Non-Res	Program	Product Code	Sum of Average 2017-19	Sum of Average 2020-2021	Change in kwh	% change
Residential	Energy Efficient Lighting	RCFL	37,360,570	12,003,306	(25,357,264)	-68%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRLTG	74,138,763	63,354,652	(10,784,111)	-15%
Residential	My Home Energy Report	HECR	137,978,331	131,942,883	(6,035,448)	-4%
Non-Residential	Small Business Energy Saver	SSBDIR	40,018,082	37,482,931	(2,535,151)	-6%
Residential	Residential Service – Smart $aver	SSSTN	2,337,114	936,821	(1,400,293)	-60%

b. What internal and / or external factors led to these reductions?

Response: For Energy Efficiency Lighting, A-line bulbs will continue to be offered but in a much smaller scale focusing on retail locations (e.g. Dollar store, Habitat, Goodwill etc.) to target low income customers who may not have transitioned to energy efficiency lighting. Strategically limiting the Company's targeting to these customer and retailers have contributed to the declines for DEP 2020-2021 projections.

Non-residential Smart $aver Prescriptive Lighting (NRLTG) projected a reduction to savings based on downward trends in participation.

MyHER (HECR) impacts were projected to be lower due to the most recent EMV not being included in the 2020 projection (due to timing). This EMV caused an increase to kwh for 2018 and 2019 but is not included in the 2020 projection. In addition, participation was projected to decrease slightly in 2020 and 2021 due to normal program attrition.

SSBDIR was reduced due to downward impact/participation trends in the Small Business Direct Install program.

SSSTN is calculated as a percentage of all AC and HP participation that will come through the program since an HVAC replacement is required to receive the SSSTN incentive. Due to EM&V, the Company removed all tier 1 AC and HP measures both referred and non-referred beginning in Q1 2019, which ultimately will lower the participation in the out years for the program (including the 2021 projection). In the 2020 projection, the Company believed that an all referred model would be required to sustain cost effectiveness, so the non-referred AC and HP participation were reduced.

c. Which programs are the most affected and what are the corresponding impacts of each major factor on each program?

Response: See table above for the program name and the percent reduction to the programs' savings.

d. Which programs are the most affected by assumed changes in customer participation and what are the corresponding impacts on each program?

Res/Non-Res	Program	Product Code	Sum of Average 2017-19	Sum of Average 2020-2021	Change in participation	% change
Non-Residential	Small Business Energy Saver	SSBDIR	37,370,121	35,000,000	(2,370,121)	-6%
Residential	Energy Efficient Lighting	RCFL	2,439,334	741,127	(1,698,207)	-70%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRLTG	1,012,483	956,607	(55,876)	-6%
Residential	Appliances and Devices	RCFLSP	34,589	-	(34,589)	-100%
Residential	Residential Energy Assessments	HEHC	27,580	8,822	(18,759)	-68%

Response: In anticipation of the enforcement of EISA Standards, A-line bulbs were removed from the online store (RCFLSP) and the Energy Efficiency Lighting program except for in stores likely to be patronized by hard-to-reach low-income customers (e.g., Goodwill, Habitat for Humanity Store, Dollar General).

Non-Residential Smart Saver Energy Efficient Lighting Products projected a significant drop in participation due the reduction of incentives (up to 50% lower). The lower incentive amounts reflect lower prices in the market.

SSBDIR was reduced due to downward impact/participation trends in the Small Business Direct Install program.

In 2017 and 2018, additional LEDs were part of the HEHC product code. However, in 2019, they were tracked separately under HCLED. Combined, the total 2019 participation was 36,260, which was in line with 2017 and 2018. In anticipation of the enforcement of EISA Standards,

2020 participation forecast of A-line bulbs was reduced and then in 2021, the bulbs were removed from the program.

Please note that units of participation within programs differ based on the unit of measure being tracked. Although the question is aimed at participation at the program level, it would be difficult to determine that since programs could have many measures using different units of measure and if the measure mix changes, the results would be skewed.

e. Please provide all relevant work papers used to provide responses to the above questions.

Response: Please see the attached file identified as SACE DR 1-24.xlsx.

			Values		
Res/Non-Res	Program	Product Code	Sum of Average 2017-19	Sum of Average 2020-2021	% change
Residential	Appliance Recycling Pro	FRCYCL	-	-	0%
Residential	Appliance Recycling Pro	RRCYCL	-	-	0%
Residential	Appliances and Devices	MPESAP	-	6,099.16	0%
Residential	Appliances and Devices	MPESDH	128.66	2,315.89	1700%
Residential	Appliances and Devices	MPLEDF	16,061.36	104,712.43	552%
Residential	Appliances and Devices	MPSMST	6,012.62	-	-100%
Residential	Appliances and Devices	MPSMTS	449,502.32	-	-100%
Residential	Appliances and Devices	MPWTR	8,489.65	-	-100%
Residential	Appliances and Devices	RCFLSP	953,003.93	-	-100%
Residential	Appliances and Devices	SFEEAR	2,493,653.86	3,636,044.15	46%
Residential	Appliances and Devices	SFEEPW	1,303,885.20	1,443,837.53	11%
Residential	Appliances and Devices	SFEESH	15,015,481.91	19,535,713.48	30%
Residential	Energy Education Progr	K12PRF	2,733,540.71	4,110,101.20	50%
Residential	Energy Efficient Lighting	RCFL	37,360,570.19	12,003,305.92	-68%
Residential	EnergyWise Home	PWRMGR	30,634.55	23,281.75	-24%
Residential	EnergyWise Home	BYOT	-	24,641.22	0%
Residential	Low Income Weatherize	WTZKWH	43,357.02	-	-100%
Residential	Multi-Family Energy Effi	MFEEAR	1,162,288.26	1,493,576.30	29%
Residential	Multi-Family Energy Effi	MFEEPW	2,110,369.65	1,047,644.42	-50%
Residential	Multi-Family Energy Effi	MFEESH	2,816,309.75	4,279,833.22	52%
Residential	Multi-Family Energy Effi	RCFLPM	8,462.42	-	-100%
Residential	Multi-Family Energy Effi	RLEDPM	7,752,407.87	7,960,311.01	3%
Residential	My Home Energy Repor	HECR	137,978,330.84	131,942,883.15	-4%
Residential	My Home Energy Repor	MFHECR	7,528,270.79	7,321,607.45	-3%
Residential	Neighborhood Energy S	HWLI	3,146,076.77	2,926,216.16	-7%
Residential	Residential Energy Asse	HCBAER	10,129.21	8,906.97	-12%
Residential	Residential Energy Asse	HCBLRD	-	319,559.70	0%
Residential	Residential Energy Asse	HCCNDL	-	521,028.76	0%
Residential	Residential Energy Asse	HCGLOB	-	208,294.56	0%
Residential	Residential Energy Asse	HCHHSH	-	71,115.22	0%
Residential	Residential Energy Asse	HCLED	185,127.25	121,049.98	-35%
Residential	Residential Energy Asse	HCNSTE	-	117,973.36	0%
Residential	Residential Energy Asse	HCPWRP	27,703.51	30,665.43	11%
Residential	Residential Energy Asse	HCRCSD	-	239,517.08	0%
Residential	Residential Energy Asse	HEHC	7,550,573.12	9,396,653.07	24%
Residential	Residential New Constru	NEWCON	14,282,191.40	16,847,767.00	18%
Residential	Residential Service – Sm	HPWH	111,055.25	237,147.98	114%
Residential	Residential Service – Sm	PEEPVS	928,993.51	804,640.43	-13%
Residential	Residential Service – Sm	SSAC1N	27,730.18	-	-100%
Residential	Residential Service – Sm	SSAC1R	997.72	-	-100%
Residential	Residential Service – Sm	SSAC2N	631,918.20	253,006.73	-60%
Residential	Residential Service – Sm	SSAC2R	10,493.30	71,915.26	585%
Residential	Residential Service – Sm	SSAC3N	142,371.47	126,925.76	-11%
Residential	Residential Service – Sm	SSAC3R	2,658.37	67,675.95	2446%
Residential	Residential Service – Sm	SSAISN	146,840.55	291,712.33	99%
Residential	Residential Service – Sm	SSAISR	102,516.77	268,375.93	162%
Residential	Residential Service – Sm	SSDSEN	407,498.81	379,244.46	-7%
Residential	Residential Service – Sm	SSDSER	28,256.66	283,391.64	903%
Residential	Residential Service – Sm	SSGEON	13,963.52	-	-100%
Residential	Residential Service – Sm	SSHEI	218.72	-	-100%
Residential	Residential Service – Sm	SSHP1N	73,847.71	-	-100%
Residential	Residential Service – Sm	SSHP1R	641.09	-	-100%
Residential	Residential Service – Sm	SSHP2N	1,211,174.61	686,170.55	-43%
Residential	Residential Service – Sm	SSHP2R	23,755.76	156,924.91	561%
Residential	Residential Service – Sm	SSHP3N	391,127.60	190,643.63	-51%
Residential	Residential Service – Sm	SSHP3R	7,964.64	39,711.00	399%
Residential	Residential Service – Sm	SSQINR	458,911.86	-	-100%
Residential	Residential Service – Sm	SSQIR	7,418.62	-	-100%
Residential	Residential Service – Sm	SSSTN	2,337,113.55	936,820.64	-60%
Residential	Residential Service – Sm	SSSTR	46,568.33	322,140.83	592%
Non-Residential	Business Energy Report	BER	-	-	0%
Non-Residential	Commercial, Industrial,	PWRSHR	2,054.71	5,255.00	156%
Non-Residential	EnergyWise for Busines	SBEEDR	359,528.43	54,635.60	-85%
Non-Residential	EnergyWise for Busines	SBEEDR-DR	3,447.47	8,771.95	154%
Non-Residential	Non-Residential Smart $	NRFS	625,230.90	3,376,061.49	440%
Non-Residential	Non-Residential Smart $	NRHVAC	1,970,120.15	2,571,531.65	31%
Non-Residential	Non-Residential Smart $	NRIT	327,128.66	-	-100%
Non-Residential	Non-Residential Smart $	NRLTG	74,138,763.49	63,354,652.35	-15%
Non-Residential	Non-Residential Smart $	NRP&M	392,024.86	398,323.07	2%
Non-Residential	Non-Residential Smart $	NRPROC	4,645.35	-	-100%
Non-Residential	Non-Residential Smart $	NRCAMT	1,117,403.40	2,685,837.65	140%
Non-Residential	Non-Residential Smart $	NRCUST	10,747,201.35	18,078,226.54	68%
Non-Residential	Non-Residential Smart $	NROTHR	-	-	0%
Non-Residential	Non-Residential Smart $	NRPPRF	1,103,687.02	5,763,906.76	422%
Non-Residential	Small Business Energy S	SSBDIR	40,018,082.26	37,482,931.16	-6%
Grand Total			382,895,917.63	364,641,236.83	-5%

SORTED BY % CHANGE

Res/Non-R	Program	Product Co	Sum of Average	Sum of Averag	Change	% change
Residentia	Appliances	MPSMST	6,013	-	(6,013)	-100%
Residentia	Appliances	MPSMTS	449,502	-	(449,502)	-100%
Residentia	Appliances	MPWTR	8,490	-	(8,490)	-100%
Residentia	Appliances	RCFLSP	953,004	-	(953,004)	-100%
Residentia	Low Incom	WTZKWH	43,357	-	(43,357)	-100%
Residentia	Multi-Fam	RCFLPM	8,462	-	(8,462)	-100%
Residentia	Residentia	SSAC1N	27,730	-	(27,730)	-100%
Residentia	Residentia	SSAC1R	998	-	(998)	-100%
Residentia	Residentia	SSGEON	13,964	-	(13,964)	-100%
Residentia	Residentia	SSHEI	219	-	(219)	-100%
Residentia	Residentia	SSHP1N	73,848	-	(73,848)	-100%
Residentia	Residentia	SSHP1R	641	-	(641)	-100%
Residentia	Residentia	SSQINR	458,912	-	(458,912)	-100%
Residentia	Residentia	SSQIR	7,419	-	(7,419)	-100%
Non-Resid	Non-Resid	NRIT	327,129	-	(327,129)	-100%
Non-Resid	Non-Resid	NRPROC	4,645	-	(4,645)	-100%
Non-Resid	EnergyWis	SBEEDR	359,528	54,636	(304,893)	-85%
Residentia	Energy Effi	RCFL	37,360,570	12,003,306	(25,357,264)	-68%
Residentia	Residentia	SSAC2N	631,918	253,007	(378,911)	-60%
Residentia	Residentia	SSSTN	2,337,114	936,821	(1,400,293)	-60%
Residentia	Residentia	SSHP3N	391,128	190,644	(200,484)	-51%
Residentia	Multi-Fam	MFEEPW	2,110,370	1,047,644	(1,062,725)	-50%
Residentia	Residentia	SSHP2N	1,211,175	686,171	(525,004)	-43%
Residentia	Residentia	HCLED	185,127	121,050	(64,077)	-35%
Residentia	EnergyWis	PWRMGR	30,635	23,282	(7,353)	-24%
Non-Resid	Non-Resid	NRLTG	74,138,763	63,354,652	(10,784,111)	-15%
Residentia	Residentia	PEEPVS	928,994	804,640	(124,353)	-13%
Residentia	Residentia	HCBAER	10,129	8,907	(1,222)	-12%
Residentia	Residentia	SSAC3N	142,371	126,926	(15,446)	-11%
Residentia	Neighborh	HWLI	3,146,077	2,926,216	(219,861)	-7%
Residentia	Residentia	SSDSEN	407,499	379,244	(28,254)	-7%
Non-Resid	Small Busi	SSBDIR	40,018,082	37,482,931	(2,535,151)	-6%
Residentia	My Home	HECR	137,978,331	131,942,883	(6,035,448)	-4%
Residentia	My Home	MFHECR	7,528,271	7,321,607	(206,663)	-3%
Residentia	Appliance	FRCYCL	-	-	-	0%
Residentia	Appliance	RRCYCL	-	-	-	0%
Residentia	Appliances	MPESAP	-	6,099	6,099	0%
Residentia	Residentia	HCBLRD	-	319,560	319,560	0%
Residentia	Residentia	HCCNDL	-	521,029	521,029	0%
Residentia	Residentia	HCGLOB	-	208,295	208,295	0%
Residentia	Residentia	HCHHSH	-	71,115	71,115	0%
Residentia	Residentia	HCNSTE	-	117,973	117,973	0%
Residentia	Residentia	HCRCSD	-	239,517	239,517	0%
Non-Resid	Business E	BER	-	-	-	0%
Non-Resid	Non-Resid	NROTHR	-	-	-	0%
Non-Resid	Non-Resid	NRP&M	392,025	398,323	6,298	2%
Residentia	Multi-Fam	RLEDPM	7,752,408	7,960,311	207,903	3%
Residentia	Residentia	HCPWRP	27,704	30,665		11%
Residentia	Appliances	SFEEPW	1,303,885	1,443,838	139,952	11%
Residentia	Residentia	NEWCON	14,282,191	16,847,767	2,565,576	18%
Residentia	Residentia	HEHC	7,550,573	9,396,653	1,846,080	24%
Residentia	Multi-Fam	MFEEAR	1,162,288	1,493,576	331,288	29%
Residentia	Appliances	SFEESH	15,015,482	19,535,713	4,520,232	30%
Non-Resid	Non-Resid	NRHVAC	1,970,120	2,571,532	601,411	31%
Residentia	Appliances	SFEEAR	2,493,654	3,636,044	1,142,390	46%
Residentia	Energy Edu	K12PRF	2,733,541	4,110,101	1,376,560	50%
Residentia	Multi-Fam	MFEESH	2,816,310	4,279,833	1,463,523	52%
Non-Resid	Non-Resid	NRCUST	10,747,201	18,078,227	7,331,025	68%
Residentia	Residentia	SSAISN	146,841	291,712	144,872	99%
Residentia	Residentia	HPWH	111,055	237,148	126,093	114%
Non-Resid	Non-Resid	NRCAMT	1,117,403	2,685,838	1,568,434	140%
Non-Resid	EnergyWis	SBEEDR-DI	3,447	8,772	5,324	154%
Non-Resid	Commerci	PWRSHR	2,055	5,255	3,200	156%
Residentia	Residentia	SSAISR	102,517	268,376	165,859	162%
Residentia	Residentia	SSHP3R	7,965	39,711	31,746	399%
Non-Resid	Non-Resid	NRPPRF	1,103,687	5,763,907	4,660,220	422%
Non-Resid	Non-Resid	NRFS	625,231	3,376,061	2,750,831	440%
Residentia	Appliances	MPLEDF	16,061	104,712	88,651	552%
Residentia	Residentia	SSHP2R	23,756	156,925	133,169	561%
Residentia	Residentia	SSAC2R	10,493	71,915	61,422	585%
Residentia	Residentia	SSSTR	46,568	322,141	275,573	592%
Residentia	Residentia	SSDSER	28,257	283,392	255,135	903%
Residentia	Appliances	MPESDH	129	2,316	2,187	1700%
Residentia	Residentia	SSAC3R	2,658	67,676	65,018	2446%

SORTED BY REDUCTION TO KWH or KW (for DR only)

Res/Non-Res	Program	Product Code	Sum of Average 2017-19	Sum of Average 2020-2021	Change	% change
Residential	Energy Efficient Lighting	RCFL	37,360,570	12,003,306	(25,357,264)	-68%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRLTG	74,138,763	63,354,652	(10,784,111)	-15%
Residential	My Home Energy Report	HECR	137,978,331	131,942,883	(6,035,448)	-4%
Non-Residential	Small Business Energy Saver	SSBDIR	40,018,082	37,482,931	(2,535,151)	-6%
Residential	Residential Service – Smart $aver	SSSTN	2,337,114	936,821	(1,400,293)	-60%
Residential	Multi-Family Energy Efficiency	MFEEPW	2,110,370	1,047,644	(1,062,725)	-50%
Residential	Appliances and Devices	RCFLSP	953,004	-	(953,004)	-100%
Residential	Residential Service – Smart $aver	SSHP2N	1,211,175	686,171	(525,004)	-43%
Residential	Residential Service – Smart $aver	SSQINR	458,912	-	(458,912)	-100%
Residential	Appliances and Devices	MPSMTS	449,502	-	(449,502)	-100%
Residential	Residential Service – Smart $aver	SSAC2N	631,918	253,007	(378,911)	-60%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRIT	327,129	-	(327,129)	-100%
Non-Residential	EnergyWise for Business	SBEEDR	359,528	54,636	(304,893)	-85%
Residential	Neighborhood Energy Saver	HWLI	3,146,077	2,926,216	(219,861)	-7%
Residential	My Home Energy Report	MFHECR	7,528,271	7,321,607	(206,663)	-3%
Residential	Residential Service – Smart $aver	SSHP3N	391,128	190,644	(200,484)	-51%
Residential	Residential Service – Smart $aver	PEEPVS	928,994	804,640	(124,353)	-13%
Residential	Residential Service – Smart $aver	SSHP1N	73,848	-	(73,848)	-100%
Residential	Residential Energy Assessments	HCLED	185,127	121,050	(64,077)	-35%
Residential	Low Income Weatherization Pilot	WTZKWH	43,357	-	(43,357)	-100%
Residential	Residential Service – Smart $aver	SSDSEN	407,499	379,244	(28,254)	-7%
Residential	Residential Service – Smart $aver	SSAC1N	27,730	-	(27,730)	-100%
Residential	Residential Service – Smart $aver	SSAC3N	142,371	126,926	(15,446)	-11%
Residential	Residential Service – Smart $aver	SSGEON	13,964	-	(13,964)	-100%
Residential	Appliances and Devices	MPWTR	8,490	-	(8,490)	-100%
Residential	Multi-Family Energy Efficiency	RCFLPM	8,462	-	(8,462)	-100%
Residential	Residential Service – Smart $aver	SSQIR	7,419	-	(7,419)	-100%
Residential	EnergyWise Home	PWRMGR	30,635	23,282	(7,353)	-24%
Residential	Appliances and Devices	MPSMST	6,013	-	(6,013)	-100%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRPROC	4,645	-	(4,645)	-100%
Residential	Residential Energy Assessments	HCBAER	10,129	8,907	(1,222)	-12%
Residential	Residential Service – Smart $aver	SSAC1R	998	-	(998)	-100%
Residential	Residential Service – Smart $aver	SSHP1R	641	-	(641)	-100%
Residential	Residential Service – Smart $aver	SSHEI	219	-	(219)	-100%
Residential	Appliance Recycling Program	FRCYCL	-	-	-	0%
Residential	Appliance Recycling Program	RRCYCL	-	-	-	0%
Non-Residential	Business Energy Report	BER	-	-	-	0%
Non-Residential	Non-Residential Smart $aver Custom	NROTHR	-	-	-	0%
Residential	Appliances and Devices	MPESDH	129	2,316	2,187	1700%
Non-Residential	Commercial, Industrial, & Governmental De	PWRSHR	2,055	5,255	3,200	156%
Non-Residential	EnergyWise for Business	SBEEDR-DR	3,447	8,772	5,324	154%
Residential	Appliances and Devices	MPESAP	-	6,099	6,099	0%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRP&M	392,025	398,323	6,298	2%
Residential	EnergyWise Home	BYOT	-	24,641	24,641	0%
Residential	Residential Service – Smart $aver	SSHP3R	7,965	39,711	31,746	399%
Residential	Residential Service – Smart $aver	SSAC2R	10,493	71,915	61,422	585%
Residential	Residential Service – Smart $aver	SSAC3R	2,658	67,676	65,018	2446%
Residential	Residential Energy Assessments	HCHHSH	-	71,115	71,115	0%
Residential	Appliances and Devices	MPLEDF	16,061	104,712	88,651	552%
Residential	Residential Energy Assessments	HCNSTE	-	117,973	117,973	0%
Residential	Residential Service – Smart $aver	HPWH	111,055	237,148	126,093	114%
Residential	Residential Service – Smart $aver	SSHP2R	23,756	156,925	133,169	561%
Residential	Appliances and Devices	SFEEPW	1,303,885	1,443,838	139,952	11%
Residential	Residential Service – Smart $aver	SSAISN	146,841	291,712	144,872	99%
Residential	Residential Service – Smart $aver	SSAISR	102,517	268,376	165,859	162%
Residential	Multi-Family Energy Efficiency	RLEDPM	7,752,408	7,960,311	207,903	3%
Residential	Residential Energy Assessments	HCGLOB	-	208,295	208,295	0%
Residential	Residential Energy Assessments	HCRCSD	-	239,517	239,517	0%
Residential	Residential Service – Smart $aver	SSDSER	28,257	283,392	255,135	903%
Residential	Residential Service – Smart $aver	SSSTR	46,568	322,141	275,573	592%
Residential	Residential Energy Assessments	HCBLRD	-	319,560	319,560	0%
Residential	Multi-Family Energy Efficiency	MFEEAR	1,162,288	1,493,576	331,288	29%
Residential	Residential Energy Assessments	HCCNDL	-	521,029	521,029	0%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRHVAC	1,970,120	2,571,532	601,411	31%
Residential	Appliances and Devices	SFEEAR	2,493,654	3,636,044	1,142,390	46%
Residential	Energy Education Program for Schools	K12PRF	2,733,541	4,110,101	1,376,560	50%
Residential	Multi-Family Energy Efficiency	MFEESH	2,816,310	4,279,833	1,463,523	52%
Non-Residential	Non-Residential Smart $aver Custom	NRCAMT	1,117,403	2,685,838	1,568,434	140%
Residential	Residential Energy Assessments	HEHC	7,550,573	9,396,653	1,846,080	24%
Residential	Residential New Construction	NEWCON	14,282,191	16,847,767	2,565,576	18%
Non-Residential	Non-Residential Smart $aver - Prescriptive	NRFS	625,231	3,376,061	2,750,831	440%
Residential	Appliances and Devices	SFEESH	15,015,482	19,535,713	4,520,232	30%
Non-Residential	Non-Residential Smart $aver Performance I	NRPPRF	1,103,687	5,763,907	4,660,220	422%
Non-Residential	Non-Residential Smart $aver Custom	NRCUST	10,747,201	18,078,227	7,331,025	68%
Residential	Residential Energy Assessments	HCPWRP	27,704	30,665		11%

Res/Non-Res	Program	Product Code	2017	2018	2019	2020	2021	Average 2017-19	Average 2020-2021	Change in kwh or kw	% Change
Residential	Appliance Recycling Program	FRCYCL	-	-	-	-	-	-	-	-	0%
Residential	Appliance Recycling Program	RRCYCL	-	-	-	-	-	-	-	-	0%
Residential	Appliances and Devices	MPESDH	-	-	386	-	4,632	129	2,316	2,187	1700%
Residential	Appliances and Devices	MPLEDF	-	-	48,184	-	209,425	16,061	104,712	88,651	552%
Residential	Appliances and Devices	MPSMST	-	-	18,038	-	-	6,013	-	(6,013)	-100%
Residential	Appliances and Devices	MPSMTS	-	-	1,348,507	-	-	449,502	-	(449,502)	-100%
Residential	Appliances and Devices	MPWTR	-	-	25,469	-	-	8,490	-	(8,490)	-100%
Residential	Appliances and Devices	RCFLSP	-	-	2,859,012	-	-	953,004	-	(953,004)	-100%
Residential	Appliances and Devices	SFEEAR	3,237,451	2,111,156	2,132,355	3,164,965	4,107,123	2,493,654	3,636,044	1,142,390	46%
Residential	Appliances and Devices	SFEEPW	1,610,635	1,211,230	1,089,791	1,580,201	1,307,474	1,303,885	1,443,838	139,952	11%
Residential	Appliances and Devices	SFEESH	20,173,366	11,929,925	12,943,155	19,042,341	20,029,086	15,015,482	19,535,713	4,520,232	30%
Residential	Appliances and Devices	MPESAP	-	-	-	-	12,198	-	6,099	6,099	0%
Residential	Energy Education Program for Sch	K12PRF	2,353,765	2,563,019	3,283,839	3,872,957	4,347,246	2,733,541	4,110,101	1,376,560	50%
Residential	Energy Efficient Lighting	RCFL	37,551,148	32,402,782	42,127,781	11,335,580	12,671,032	37,360,570	12,003,306	(25,357,264)	-68%
Residential	EnergyWise Home	PWRMGR	33,428	29,483	28,993	25,880	20,684	30,635	23,282	(7,353)	-24%
Residential	EnergyWise Home	BYOT	-	-	-	1,749	47,534	-	24,641	24,641	0%
Residential	Low Income Weatherization Pilot	WTZKWH	-	-	130,071	-	-	43,357	-	(43,357)	-100%
Residential	Multi-Family Energy Efficiency	MFEEAR	1,432,694	997,907	1,056,263	1,694,228	1,292,925	1,162,288	1,493,576	331,288	29%
Residential	Multi-Family Energy Efficiency	MFEEPW	3,517,135	1,957,562	856,412	1,014,758	1,080,531	2,110,370	1,047,644	(1,062,725)	-50%
Residential	Multi-Family Energy Efficiency	MFEESH	3,495,801	2,600,340	2,352,789	4,144,661	4,415,006	2,816,310	4,279,833	1,463,523	52%
Residential	Multi-Family Energy Efficiency	RCFLPM	25,387	-	-	-	-	8,462	-	(8,462)	-100%
Residential	Multi-Family Energy Efficiency	RLEDPM	7,679,622	7,735,843	7,841,758	7,684,986	8,235,636	7,752,408	7,960,311	207,903	3%
Residential	My Home Energy Report	HECR	109,814,673	155,759,587	148,360,732	108,790,986	155,094,780	137,978,331	131,942,883	(6,035,448)	-4%
Residential	My Home Energy Report	MFHECR	8,036,842	8,306,463	6,241,507	7,254,899	7,388,316	7,528,271	7,321,607	(206,663)	-3%
Residential	Neighborhood Energy Saver	HWLI	2,200,240	3,538,968	3,699,023	2,279,725	3,572,708	3,146,077	2,926,216	(219,861)	-7%
Residential	Residential Energy Assessments	HCBAER	-	-	30,388	-	17,814	10,129	8,907	(1,222)	-12%
Residential	Residential Energy Assessments	HCLED	-	-	555,382	242,100	-	185,127	121,050	(64,077)	-35%
Residential	Residential Energy Assessments	HCPWRP	-	-	83,111	-	61,331	27,704	30,665	2,962	11%
Residential	Residential Energy Assessments	HEHC	7,734,231	7,751,895	7,165,594	6,624,473	12,168,833	7,550,573	9,396,653	1,846,080	24%
Residential	Residential Energy Assessments	HCBLRD	-	-	-	-	639,119	-	319,560	319,560	0%
Residential	Residential Energy Assessments	HCCNDL	-	-	-	-	1,042,058	-	521,029	521,029	0%
Residential	Residential Energy Assessments	HCGLOB	-	-	-	-	416,589	-	208,295	208,295	0%
Residential	Residential Energy Assessments	HCHHSH	-	-	-	-	142,230	-	71,115	71,115	0%
Residential	Residential Energy Assessments	HCNSTE	-	-	-	-	235,947	-	117,973	117,973	0%
Residential	Residential Energy Assessments	HCRCSD	-	-	-	-	479,034	-	239,517	239,517	0%
Residential	Residential New Construction	NEWCON	12,245,876	14,263,235	16,337,464	15,992,111	17,703,423	14,282,191	16,847,767	2,565,576	18%

Residential	**Residential Service – Smart $aver**	HPWH	70,535	91,546	171,085	273,196	201,100	111,055	237,148	126,093	114%
Residential	**Residential Service – Smart $aver**	PEEPVS	809,524	1,024,264	953,192	1,052,546	556,734	928,994	804,640	(124,353)	-13%
Residential	**Residential Service – Smart $aver**	SSAC1N	83,191	-	-	-	-	27,730	-	(27,730)	-100%
Residential	**Residential Service – Smart $aver**	SSAC1R	2,993	-	-	-	-	998	-	(998)	-100%
Residential	**Residential Service – Smart $aver**	SSAC2N	615,101	619,946	660,708	162,880	343,134	631,918	253,007	(378,911)	-60%
Residential	**Residential Service – Smart $aver**	SSAC2R	6,332	14,654	10,493	122,120	21,710	10,493	71,915	61,422	585%
Residential	**Residential Service – Smart $aver**	SSAC3N	140,783	158,327	128,004	121,299	132,553	142,371	126,926	(15,446)	-11%
Residential	**Residential Service – Smart $aver**	SSAC3R	1,407	3,753	2,815	131,364	3,988	2,658	67,676	65,018	2446%
Residential	**Residential Service – Smart $aver**	SSAISN	113,450	140,331	186,740	384,530	198,895	146,841	291,712	144,872	99%
Residential	**Residential Service – Smart $aver**	SSAISR	54,477	116,532	136,542	409,626	127,125	102,517	268,376	165,859	162%
Residential	**Residential Service – Smart $aver**	SSDSEN	542,792	167,266	512,439	624,144	134,345	407,499	379,244	(28,254)	-7%
Residential	**Residential Service – Smart $aver**	SSDSER	14,985	15,232	54,553	505,854	60,929	28,257	283,392	255,135	903%
Residential	**Residential Service – Smart $aver**	SSGEON	41,891	-	-	-	-	13,964	-	(13,964)	-100%
Residential	**Residential Service – Smart $aver**	SSHEI	656	-	-	-	-	219	-	(219)	-100%
Residential	**Residential Service – Smart $aver**	SSHP1N	221,543	-	-	-	-	73,848	-	(73,848)	-100%
Residential	**Residential Service – Smart $aver**	SSHP1R	1,923	-	-	-	-	641	-	(641)	-100%
Residential	**Residential Service – Smart $aver**	SSHP2N	1,197,592	1,302,621	1,133,311	271,498	1,100,843	1,211,175	686,171	(525,004)	-43%
Residential	**Residential Service – Smart $aver**	SSHP2R	17,935	30,206	23,126	294,027	19,823	23,756	156,925	133,169	561%
Residential	**Residential Service – Smart $aver**	SSHP3N	354,874	404,593	413,916	64,325	316,963	391,128	190,644	(200,484)	-51%
Residential	**Residential Service – Smart $aver**	SSHP3R	9,423	10,096	4,375	69,663	9,759	7,965	39,711	31,746	399%
Residential	**Residential Service – Smart $aver**	SSQINR	858,276	518,460	-	-	-	458,912	-	(458,912)	-100%
Residential	**Residential Service – Smart $aver**	SSQIR	12,898	9,358	-	-	-	7,419	-	(7,419)	-100%
Residential	**Residential Service – Smart $aver**	SSSTN	2,147,613	2,539,274	2,324,454	569,071	1,304,570	2,337,114	936,821	(1,400,293)	-60%
Residential	**Residential Service – Smart $aver**	SSSTR	37,137	62,189	40,379	578,555	65,726	46,568	322,141	275,573	592%
Non-Residenti	**Business Energy Report**	BER	-	-	-	-	-	-	-	-	0%
Non-Residenti	**Commercial, Industrial, & Governn**	PWRSHR	1,969	1,629	2,567	7,357	3,153	2,055	5,255	3,200	156%
Non-Residenti	**EnergyWise for Business**	SBEEDR	983,712	39,728	55,146	54,636	54,635	359,528	54,636	(304,893)	-85%
Non-Residenti	**EnergyWise for Business**	SBEEDR-DR	2,887	2,661	4,795	8,252	9,292	3,447	8,772	5,324	154%
Non-Residenti	**Non-Residential Smart $aver - Pre**	NRFS	833,832	271,605	770,256	2,907,836	3,844,287	625,231	3,376,061	2,750,831	440%
Non-Residenti	**Non-Residential Smart $aver - Pre**	NRHVAC	1,911,578	1,588,793	2,409,989	2,801,787	2,341,276	1,970,120	2,571,532	601,411	31%
Non-Residenti	**Non-Residential Smart $aver - Pre**	NRIT	971,744	6,720	2,922	-	-	327,129	-	(327,129)	-100%
Non-Residenti	**Non-Residential Smart $aver - Pre**	NRLTG	88,272,627	82,884,976	51,258,688	57,273,161	69,436,143	74,138,763	63,354,652	(10,784,111)	-15%
Non-Residenti	**Non-Residential Smart $aver - Pre**	NRP&M	813,430	228,192	134,453	767,826	28,820	392,025	398,323	6,298	2%
Non-Residenti	**Non-Residential Smart $aver - Pre**	NRPROC	-	105	13,831	-	-	4,645	-	(4,645)	-100%
Non-Residenti	**Non-Residential Smart $aver Custo**	NRCAMT	2,509,668	-	842,542	3,059,041	2,312,635	1,117,403	2,685,838	1,568,434	140%
Non-Residenti	**Non-Residential Smart $aver Custo**	NRCUST	8,053,019	11,901,442	12,287,144	18,017,968	18,138,485	10,747,201	18,078,227	7,331,025	68%
Non-Residenti	**Non-Residential Smart $aver Custo**	NROTHR	-	-	-	-	-	-	-	-	0%
Non-Residenti	**Non-Residential Smart $aver Perfo**	NRPPRF	435,108	1,519,117	1,356,835	7,520,191	4,007,622	1,103,687	5,763,907	4,660,220	422%
Non-Residenti	**Small Business Energy Saver**	SSBDIR	45,011,098	40,298,466	34,744,682	38,401,907	36,563,955	40,018,082	37,482,931	(2,535,151)	-6%

Res/Non-Res	Program	Product Code	Values Sum of Average 2017-19	Sum of Average 2020-2021	change in participation	% change
Residential	Appliance Recycling Pro	FRCYCL	-	-	-	0%
Residential	Appliance Recycling Pro	RRCYCL	-	-	-	0%
Residential	Appliances and Devices	MPESAP	-	18	18	0%
Residential	Appliances and Devices	MPESDH	1	18	17	1700%
Residential	Appliances and Devices	MPLEDF	134	2,112	1,978	1476%
Residential	Appliances and Devices	MPSMST	345	-	(345)	-100%
Residential	Appliances and Devices	MPSMTS	1,744	-	(1,744)	-100%
Residential	Appliances and Devices	MPWTR	39	-	(39)	-100%
Residential	Appliances and Devices	RCFLSP	34,589	-	(34,589)	-100%
Residential	Appliances and Devices	SFEEAR	119,058	136,368	17,310	15%
Residential	Appliances and Devices	SFEEPW	159,762	173,790	14,028	9%
Residential	Appliances and Devices	SFEESH	50,010	57,402	7,392	15%
Residential	Energy Education Progr	K12PRF	9,335	12,375	3,040	33%
Residential	Energy Efficient Lighting	RCFL	2,439,334	741,127	(1,698,207)	-70%
Residential	EnergyWise Home	BYOT	-	19,045	19,045	0%
Residential	EnergyWise Home	PWRMGR	27,928	299,801	271,873	973%
Residential	Low Income Weatheriza	WTZKWH	436	-	(436)	-100%
Residential	Multi-Family Energy Effi	MFEEAR	21,206	28,161	6,955	33%
Residential	Multi-Family Energy Effi	MFEEPW	55,428	63,363	7,935	14%
Residential	Multi-Family Energy Effi	MFEESH	11,980	18,205	6,225	52%
Residential	Multi-Family Energy Effi	RCFLPM	318	-	(318)	-100%
Residential	Multi-Family Energy Effi	RLEDPM	201,499	210,520	9,021	4%
Residential	My Home Energy Repor	HECR	715,838	717,737	1,898	0%
Residential	My Home Energy Repor	MFHECR	81,817	79,640	(2,177)	-3%
Residential	Neighborhood Energy S	HWLI	4,812	4,997	184	4%
Residential	Residential Energy Asse	HCBAER	682	600	(82)	-12%
Residential	Residential Energy Asse	HCBLRD	-	300	300	0%
Residential	Residential Energy Asse	HCCNDL	-	19,554	19,554	0%
Residential	Residential Energy Asse	HCGLOB	-	7,518	7,518	0%
Residential	Residential Energy Asse	HCHHSH	-	600	600	0%
Residential	Residential Energy Asse	HCLED	9,511	6,219	(3,292)	-35%
Residential	Residential Energy Asse	HCNSTE	-	458	458	0%
Residential	Residential Energy Asse	HCPWRP	1,306	1,446	140	11%
Residential	Residential Energy Asse	HCRCSD	-	5,844	5,844	0%
Residential	Residential Energy Asse	HEHC	27,580	8,822	(18,759)	-68%
Residential	Residential New Constr	NEWCON	11,391,140	13,158,031	1,766,892	16%
Residential	Residential Service – Sr	HPWH	74	158	84	114%
Residential	Residential Service – Sr	PEEPVS	444	383	(61)	-14%
Residential	Residential Service – Sr	SSAC1N	100	-	(100)	-100%
Residential	Residential Service – Sr	SSAC1R	3	-	(3)	-100%
Residential	Residential Service – Sr	SSAC2N	3,783	1,515	(2,268)	-60%
Residential	Residential Service – Sr	SSAC2R	58	398	340	585%
Residential	Residential Service – Sr	SSAC3N	657	586	(71)	-11%
Residential	Residential Service – Sr	SSAC3R	11	289	277	2446%
Residential	Residential Service – Sr	SSAISN	191	264	73	38%
Residential	Residential Service – Sr	SSAISR	107	228	121	113%
Residential	Residential Service – Sr	SSDSEN	1,371	1,140	(231)	-17%
Residential	Residential Service – Sr	SSDSER	84	800	716	849%
Residential	Residential Service – Sr	SSGEON	11	-	(11)	-100%
Residential	Residential Service – Sr	SSHEI	0	-	(0)	-100%
Residential	Residential Service – Sr	SSHP1N	166	-	(166)	-100%
Residential	Residential Service – Sr	SSHP1R	1	-	(1)	-100%
Residential	Residential Service – Sr	SSHP2N	5,558	3,149	(2,409)	-43%
Residential	Residential Service – Sr	SSHP2R	101	665	564	561%
Residential	Residential Service – Sr	SSHP3N	1,259	614	(645)	-51%
Residential	Residential Service – Sr	SSHP3R	24	118	94	399%
Residential	Residential Service – Sr	SSQINR	1,996	-	(1,996)	-100%
Residential	Residential Service – Sr	SSQIR	29	-	(29)	-100%
Residential	Residential Service – Sr	SSSTN	8,062	3,231	(4,830)	-60%
Residential	Residential Service – Sr	SSSTR	158	1,093	935	592%
Non-Residential	Business Energy Report	BER	-	-	-	0%
Non-Residential	Commercial, Industrial,	PWRSHR	1,955	19,614	17,659	903%
Non-Residential	EnergyWise for Busines	SBEEDR	2,226	-	(2,226)	-100%
Non-Residential	EnergyWise for Busines	SBEEDR-DR	34,237	38,965	4,729	14%
Non-Residential	Non-Residential Smart (	NRFS	1,382	53,197	51,815	3749%
Non-Residential	Non-Residential Smart (	NRHVAC	498,268	2,546,185	2,047,917	411%
Non-Residential	Non-Residential Smart (	NRIT	2,327	-	(2,327)	-100%
Non-Residential	Non-Residential Smart (	NRLTG	1,012,483	956,607	(55,876)	-6%
Non-Residential	Non-Residential Smart (	NRP&M	331	526	195	59%
Non-Residential	Non-Residential Smart (	NRPROC	34	-	(34)	-100%
Non-Residential	Non-Residential Smart (	NRCAMT	3	1,932	1,929	72350%
Non-Residential	Non-Residential Smart (	NRCUST	8,932	14,232	5,300	59%
Non-Residential	Non-Residential Smart (	NROTHR	-	-	-	0%
Non-Residential	Non-Residential Smart (	NRPPRF	33	6,027,161	6,027,128	18081383%
Non-Residential	Small Business Energy S	SSBDIR	37,370,121	35,000,000	(2,370,121)	-6%
Grand Total			**54,322,413**	**60,447,118**	6,124,705	11%

SORTED BY CHANGE in Participation

Res/Non-Res	Program	Product Code	Sum of Average 2017-19	Sum of Average 2020-2021	Change in participation	% change
Non-Resid	Small Busi	SSBDIR	37,370,121	35,000,000	(2,370,121)	-6%
Residentia	Energy Effi	RCFL	2,439,334	741,127	(1,698,207)	-70%
Non-Resid	Non-Resid	NRLTG	1,012,483	956,607	(55,876)	-6%
Residentia	Appliances	RCFLSP	34,589	-	(34,589)	-100%
Residentia	Residentia	HEHC	27,580	8,822	(18,759)	-68%
Residentia	Residentia	SSSTN	8,062	3,231	(4,830)	-60%
Residentia	Residentia	HCLED	9,511	6,219	(3,292)	-35%
Residentia	Residentia	SSHP2N	5,558	3,149	(2,409)	-43%
Non-Resid	Non-Resid	NRIT	2,327	-	(2,327)	-100%
Residentia	Residentia	SSAC2N	3,783	1,515	(2,268)	-60%
Non-Resid	EnergyWis	SBEEDR	2,226	-	(2,226)	-100%
Residentia	My Home	MFHECR	81,817	79,640	(2,177)	-3%
Residentia	Residentia	SSQINR	1,996	-	(1,996)	-100%
Residentia	Appliances	MPSMTS	1,744	-	(1,744)	-100%
Residentia	Residentia	SSHP3N	1,259	614	(645)	-51%
Residentia	Low Incom	WTZKWH	436	-	(436)	-100%
Residentia	Appliances	MPSMST	345	-	(345)	-100%
Residentia	Multi-Fam	RCFLPM	318	-	(318)	-100%
Residentia	Residentia	SSDSEN	1,371	1,140	(231)	-17%
Residentia	Residentia	SSHP1N	166	-	(166)	-100%
Residentia	Residentia	SSAC1N	100	-	(100)	-100%
Residentia	Residentia	HCBAER	682	600	(82)	-12%
Residentia	Residentia	SSAC3N	657	586	(71)	-11%
Residentia	Residentia	PEEPVS	444	383	(61)	-14%
Residentia	Appliances	MPWTR	39	-	(39)	-100%
Non-Resid	Non-Resid	NRPROC	34	-	(34)	-100%
Residentia	Residentia	SSQIR	29	-	(29)	-100%
Residentia	Residentia	SSGEON	11	-	(11)	-100%
Residentia	Residentia	SSAC1R	3	-	(3)	-100%
Residentia	Residentia	SSHP1R	1	-	(1)	-100%
Residentia	Residentia	SSHEI	0	-	(0)	-100%
Residentia	Appliance	FRCYCL	-	-	-	0%
Residentia	Appliance	RRCYCL	-	-	-	0%
Non-Resid	Business E	BER	-	-	-	0%
Non-Resid	Non-Resid	NROTHR	-	-	-	0%
Residentia	Appliances	MPESDH	1	18	17	1700%
Residentia	Appliances	MPESAP	-	18	18	0%
Residentia	Residentia	SSAISN	191	264	73	38%
Residentia	Residentia	HPWH	74	158	84	114%
Residentia	Residentia	SSHP3R	24	118	94	399%
Residentia	Residentia	SSAISR	107	228	121	113%
Residentia	Residentia	HCPWRP	1,306	1,446	140	11%
Residentia	Neighborh	HWLI	4,812	4,997	184	4%
Non-Resid	Non-Resid	NRP&M	331	526	195	59%
Residentia	Residentia	SSAC3R	11	289	277	2446%
Residentia	Residentia	HCBLRD	-	300	300	0%
Residentia	Residentia	SSAC2R	58	398	340	585%
Residentia	Residentia	HCNSTE	-	458	458	0%
Residentia	Residentia	SSHP2R	101	665	564	561%
Residentia	Residentia	HCHHSH	-	600	600	0%
Residentia	Residentia	SSDSER	84	800	716	849%
Residentia	Residentia	SSSTR	158	1,093	935	592%
Residentia	My Home	HECR	715,838	717,737	1,898	0%
Non-Resid	Non-Resid	NRCAMT	3	1,932	1,929	72350%
Residentia	Appliances	MPLEDF	134	2,112	1,978	1476%
Residentia	Energy Edu	K12PRF	9,335	12,375	3,040	33%
Non-Resid	EnergyWis	SBEEDR-DI	34,237	38,965	4,729	14%
Non-Resid	Non-Resid	NRCUST	8,932	14,232	5,300	59%
Residentia	Residentia	HCRCSD	-	5,844	5,844	0%
Residentia	Multi-Fam	MFEESH	11,980	18,205	6,225	52%
Residentia	Multi-Fam	MFEEAR	21,206	28,161	6,955	33%
Residentia	Appliances	SFEESH	50,010	57,402	7,392	15%
Residentia	Residentia	HCGLOB	-	7,518	7,518	0%
Residentia	Multi-Fam	MFEEPW	55,428	63,363	7,935	14%
Residentia	Multi-Fam	RLEDPM	201,499	210,520	9,021	4%
Residentia	Appliances	SFEEPW	159,762	173,790	14,028	9%
Residentia	Appliances	SFEEAR	119,058	136,368	17,310	15%
Non-Resid	Commerci	PWRSHR	1,955	19,614	17,659	903%
Residentia	EnergyWis	BYOT	-	19,045	19,045	0%
Residentia	Residentia	HCCNDL	-	19,554	19,554	0%
Non-Resid	Non-Resid	NRFS	1,382	53,197	51,815	3749%
Residentia	EnergyWis	PWRMGR	27,928	299,801	271,873	973%
Residentia	Residentia	NEWCON	11,391,140	13,158,031	1,766,892	16%
Non-Resid	Non-Resid	NRHVAC	498,268	2,546,185	2,047,917	411%
Non-Resid	Non-Resid	NRPPRF	33	6,027,161	6,027,128	18081383%
Grand Total			54,322,413	60,447,118	6,124,705	11%

SORTED BY % CHANGE in Participation

Res/Non-Res	Program	Product Code	Sum of Average 2017-19	Sum of Average 2020-2021	Change in participation	% change
Residentia	Appliances	RCFLSP	34,589	-	(34,589)	-100%
Non-Resid	Non-Resid	NRIT	2,327	-	(2,327)	-100%
Non-Resid	EnergyWis	SBEEDR	2,226	-	(2,226)	-100%
Residentia	Residentia	SSQINR	1,996	-	(1,996)	-100%
Residentia	Appliances	MPSMTS	1,744	-	(1,744)	-100%
Residentia	Low Incom	WTZKWH	436	-	(436)	-100%
Residentia	Appliances	MPSMST	345	-	(345)	-100%
Residentia	Multi-Fam	RCFLPM	318	-	(318)	-100%
Residentia	Residentia	SSHP1N	166	-	(166)	-100%
Residentia	Residentia	SSAC1N	100	-	(100)	-100%
Residentia	Appliances	MPWTR	39	-	(39)	-100%
Non-Resid	Non-Resid	NRPROC	34	-	(34)	-100%
Residentia	Residentia	SSQIR	29	-	(29)	-100%
Residentia	Residentia	SSGEON	11	-	(11)	-100%
Residentia	Residentia	SSAC1R	3	-	(3)	-100%
Residentia	Residentia	SSHP1R	1	-	(1)	-100%
Residentia	Residentia	SSHEI	0	-	(0)	-100%
Residentia	Energy Effi	RCFL	2,439,334	741,127	(1,698,207)	-70%
Residentia	Residentia	HEHC	27,580	8,822	(18,759)	-68%
Residentia	Residentia	SSAC2N	3,783	1,515	(2,268)	-60%
Residentia	Residentia	SSSTN	8,062	3,231	(4,830)	-60%
Residentia	Residentia	SSHP3N	1,259	614	(645)	-51%
Residentia	Residentia	SSHP2N	5,558	3,149	(2,409)	-43%
Residentia	Residentia	HCLED	9,511	6,219	(3,292)	-35%
Residentia	Residentia	SSDSEN	1,371	1,140	(231)	-17%
Residentia	Residentia	PEEPVS	444	383	(61)	-14%
Residentia	Residentia	HCBAER	682	600	(82)	-12%
Residentia	Residentia	SSAC3N	657	586	(71)	-11%
Non-Resid	Small Busi	SSBDIR	37,370,121	35,000,000	(2,370,121)	-6%
Non-Resid	Non-Resid	NRLTG	1,012,483	956,607	(55,876)	-6%
Residentia	My Home	MFHECR	81,817	79,640	(2,177)	-3%
Residentia	Appliance	FRCYCL	-	-	-	0%
Residentia	Appliance	RRCYCL	-	-	-	0%
Non-Resid	Business E	BER	-	-	-	0%
Non-Resid	Non-Resid	NROTHR	-	-	-	0%
Residentia	Appliances	MPESAP	-	18	18	0%
Residentia	Residentia	HCBLRD	-	300	300	0%
Residentia	Residentia	HCNSTE	-	458	458	0%
Residentia	Residentia	HCHHSH	-	600	600	0%
Residentia	Residentia	HCRCSD	-	5,844	5,844	0%
Residentia	Residentia	HCGLOB	-	7,518	7,518	0%
Residentia	EnergyWis	BYOT	-	19,045	19,045	0%
Residentia	Residentia	HCCNDL	-	19,554	19,554	0%
Residentia	My Home	HECR	715,838	717,737	1,898	0%
Residentia	Neighborh	HWLI	4,812	4,997	184	4%
Residentia	Multi-Fam	RLEDPM	201,499	210,520	9,021	4%
Residentia	Appliances	SFEEPW	159,762	173,790	14,028	9%
Residentia	Residentia	HCPWRP	1,306	1,446	140	11%
Grand Total			54,322,413	60,447,118	6,124,705	11%
Non-Resid	EnergyWis	SBEEDR-DI	34,237	38,965	4,729	14%
Residentia	Multi-Fam	MFEEPW	55,428	63,363	7,935	14%
Residentia	Appliances	SFEEAR	119,058	136,368	17,310	15%
Residentia	Appliances	SFEESH	50,010	57,402	7,392	15%
Residentia	Residentia	NEWCON	11,391,140	13,158,031	1,766,892	16%
Residentia	Energy Edu	K12PRF	9,335	12,375	3,040	33%
Residentia	Multi-Fam	MFEEAR	21,206	28,161	6,955	33%
Residentia	Residentia	SSAISN	191	264	73	38%
Residentia	Multi-Fam	MFEESH	11,980	18,205	6,225	52%
Non-Resid	Non-Resid	NRP&M	331	526	195	59%
Non-Resid	Non-Resid	NRCUST	8,932	14,232	5,300	59%
Residentia	Residentia	SSAISR	107	228	121	113%
Residentia	Residentia	HPWH	74	158	84	114%
Residentia	Residentia	SSHP3R	24	118	94	399%
Non-Resid	Non-Resid	NRHVAC	498,268	2,546,185	2,047,917	411%
Residentia	Residentia	SSHP2R	101	665	564	561%
Residentia	Residentia	SSAC2R	58	398	340	585%
Residentia	Residentia	SSSTR	158	1,093	935	592%
Residentia	Residentia	SSDSER	84	800	716	849%
Non-Resid	Commerci	PWRSHR	1,955	19,614	17,659	903%
Residentia	EnergyWis	PWRMGR	27,928	299,801	271,873	973%
Residentia	Appliances	MPLEDF	134	2,112	1,978	1476%
Residentia	Appliances	MPESDH	1	18	17	1700%
Residentia	Residentia	SSAC3R	11	289	277	2446%
Non-Resid	Non-Resid	NRFS	1,382	53,197	51,815	3749%
Non-Resid	Non-Resid	NRCAMT	3	1,932	1,929	72350%
Non-Resid	Non-Resid	NRPPRF	33	6,027,161	6,027,128	########

Res/Non-Res	Program	Product Code	2017	2018	2019	2020	2021	Average 2017-19	Average 2020-2021	Change in kwh or kw	% Change
Residential	Appliance Recycling Program	FRCYCL	-	-	-	-	-	-	-	-	0%
Residential	Appliance Recycling Program	RRCYCL	-	-	-	-	-	-	-	-	0%
Residential	Appliances and Devices	MPESDH	-	-	3	-	36	1	18	17	1700%
Residential	Appliances and Devices	MPLEDF	-	-	402	-	4,224	134	2,112	1,978	1476%
Residential	Appliances and Devices	MPSMST	-	-	1,036	-	-	345	-	(345)	-100%
Residential	Appliances and Devices	MPSMTS	-	-	5,233	-	-	1,744	-	(1,744)	-100%
Residential	Appliances and Devices	MPWTR	-	-	116	-	-	39	-	(39)	-100%
Residential	Appliances and Devices	RCFLSP	-	-	103,766	-	-	34,589	-	(34,589)	-100%
Residential	Appliances and Devices	SFEEAR	183,023	96,921	77,229	164,700	108,036	119,058	136,368	17,310	15%
Residential	Appliances and Devices	SFEEPW	210,355	140,215	128,715	182,928	164,652	159,762	173,790	14,028	9%
Residential	Appliances and Devices	SFEESH	70,476	39,191	40,364	62,556	52,248	50,010	57,402	7,392	15%
Residential	Appliances and Devices	MPESAP	-	-	-	-	36	-	18	18	0%
Residential	Energy Education Program for Sch	K12PRF	9,104	9,013	9,887	11,661	13,089	9,335	12,375	3,040	33%
Residential	Energy Efficient Lighting	RCFL	2,520,381	2,147,254	2,650,367	770,607	711,647	2,439,334	741,127	(1,698,207)	-70%
Residential	EnergyWise Home	PWRMGR	31,873	27,572	24,340	405,370	194,233	27,928	299,801	271,873	973%
Residential	EnergyWise Home	BYOT	-	-	-	38,090	-	-	19,045	19,045	0%
Residential	Low Income Weatherization Pilot	WTZKWH	-	-	1,308	-	-	436	-	(436)	-100%
Residential	Multi-Family Energy Efficiency	MFEEAR	25,537	17,982	20,100	30,162	26,160	21,206	28,161	6,955	33%
Residential	Multi-Family Energy Efficiency	MFEEPW	52,850	61,638	51,797	61,374	65,352	55,428	63,363	7,935	14%
Residential	Multi-Family Energy Efficiency	MFEESH	14,870	11,061	10,008	17,630	18,780	11,980	18,205	6,225	52%
Residential	Multi-Family Energy Efficiency	RCFLPM	954	-	-	-	-	318	-	(318)	-100%
Residential	Multi-Family Energy Efficiency	RLEDPM	203,626	197,412	203,460	204,260	216,780	201,499	210,520	9,021	4%
Residential	My Home Energy Report	HECR	707,899	737,320	702,296	701,300	734,173	715,838	717,737	1,898	0%
Residential	My Home Energy Report	MFHECR	87,835	90,421	67,194	78,950	80,329	81,817	79,640	(2,177)	-3%
Residential	Neighborhood Energy Saver	HWLI	4,873	5,047	4,517	5,049	4,944	4,812	4,997	184	4%
Residential	Residential Energy Assessments	HCBAER	-	-	2,047	-	1,200	682	600	(82)	-12%
Residential	Residential Energy Assessments	HCLED	-	-	28,533	12,438	-	9,511	6,219	(3,292)	-35%
Residential	Residential Energy Assessments	HCPWRP	-	-	3,919	-	2,892	1,306	1,446	140	11%
Residential	Residential Energy Assessments	HEHC	38,090	37,923	6,727	6,219	11,424	27,580	8,822	(18,759)	-68%
Residential	Residential Energy Assessments	HCBLRD	-	-	-	-	600	-	300	300	0%
Residential	Residential Energy Assessments	HCCNDL	-	-	-	-	39,108	-	19,554	19,554	0%
Residential	Residential Energy Assessments	HCGLOB	-	-	-	-	15,036	-	7,518	7,518	0%
Residential	Residential Energy Assessments	HCHHSH	-	-	-	-	1,200	-	600	600	0%
Residential	Residential Energy Assessments	HCNSTE	-	-	-	-	916	-	458	458	0%
Residential	Residential Energy Assessments	HCRCSD	-	-	-	-	11,688	-	5,844	5,844	0%
Residential	Residential New Construction	NEWCON	9,732,077	11,275,657	13,165,685	12,836,720	13,479,342	11,391,140	13,158,031	1,766,892	16%
Residential	Residential Service – Smart $aver	HPWH	47	61	114	182	134	74	158	84	114%
Residential	Residential Service – Smart $aver	PEEPVS	387	490	456	501	265	444	383	(61)	-14%
Residential	Residential Service – Smart $aver	SSAC1N	301	-	-	-	-	100	-	(100)	-100%
Residential	Residential Service – Smart $aver	SSAC1R	10	-	-	-	-	3	-	(3)	-100%
Residential	Residential Service – Smart $aver	SSAC2N	3,682	3,711	3,955	975	2,054	3,783	1,515	(2,268)	-60%
Residential	Residential Service – Smart $aver	SSAC2R	35	81	58	675	120	58	398	340	585%
Residential	Residential Service – Smart $aver	SSAC3N	650	731	591	560	612	657	586	(71)	-11%
Residential	Residential Service – Smart $aver	SSAC3R	6	16	12	560	17	11	289	277	2446%
Residential	Residential Service – Smart $aver	SSAISN	276	127	169	348	180	191	264	73	38%
Residential	Residential Service – Smart $aver	SSAISR	106	99	116	348	108	107	228	121	113%
Residential	Residential Service – Smart $aver	SSDSEN	2,069	503	1,541	1,877	404	1,371	1,140	(231)	-17%
Residential	Residential Service – Smart $aver	SSDSER	56	43	154	1,428	172	84	800	716	849%
Residential	Residential Service – Smart $aver	SSGEON	32	-	-	-	-	11	-	(11)	-100%
Residential	Residential Service – Smart $aver	SSHEI	1	-	-	-	-	0	-	(0)	-100%

Residential	**Residential Service – Smart $aver**	SSHP1N	499	-	-	-	-	166	-	(166)	-100%
Residential	**Residential Service – Smart $aver**	SSHP1R	4	-	-	-	-	1	-	(1)	-100%
Residential	**Residential Service – Smart $aver**	SSHP2N	5,496	5,978	5,201	1,246	5,052	5,558	3,149	(2,409)	-43%
Residential	**Residential Service – Smart $aver**	SSHP2R	76	128	98	1,246	84	101	665	564	561%
Residential	**Residential Service – Smart $aver**	SSHP3N	1,142	1,302	1,332	207	1,020	1,259	614	(645)	-51%
Residential	**Residential Service – Smart $aver**	SSHP3R	28	30	13	207	29	24	118	94	399%
Residential	**Residential Service – Smart $aver**	SSQINR	3,733	2,255	-	-	-	1,996	-	(1,996)	-100%
Residential	**Residential Service – Smart $aver**	SSQIR	51	37	-	-	-	29	-	(29)	-100%
Residential	**Residential Service – Smart $aver**	SSSTN	7,408	8,759	8,018	1,963	4,500	8,062	3,231	(4,830)	-60%
Residential	**Residential Service – Smart $aver**	SSSTR	126	211	137	1,963	223	158	1,093	935	592%
Non-Resident	**Business Energy Report**	BER	-	-	-	-	-	-	-	-	0%
Non-Resident	**Commercial, Industrial, & Governr**	PWRSHR	1,873	1,550	2,442	39,228	-	1,955	19,614	17,659	903%
Non-Resident	**EnergyWise for Business**	SBEEDR	1,664	2,100	2,915	-	-	2,226	-	(2,226)	-100%
Non-Resident	**EnergyWise for Business**	SBEEDR-DR	25,935	29,013	47,762	77,930	-	34,237	38,965	4,729	14%
Non-Resident	**Non-Residential Smart $aver - Pre**	NRFS	1,507	769	1,870	51,318	55,075	1,382	53,197	51,815	3749%
Non-Resident	**Non-Residential Smart $aver - Pre**	NRHVAC	791,872	324,210	378,721	1,176,335	3,916,035	498,268	2,546,185	2,047,917	411%
Non-Resident	**Non-Residential Smart $aver - Pre**	NRIT	6,848	92	40	-	-	2,327	-	(2,327)	-100%
Non-Resident	**Non-Residential Smart $aver - Pre**	NRLTG	988,903	749,786	1,298,760	1,009,838	903,377	1,012,483	956,607	(55,876)	-6%
Non-Resident	**Non-Residential Smart $aver - Pre**	NRP&M	545	314	134	1,007	45	331	526	195	59%
Non-Resident	**Non-Residential Smart $aver - Pre**	NRPROC	-	1	100	-	-	34	-	(34)	-100%
Non-Resident	**Non-Residential Smart $aver Cust**	NRCAMT	6	-	2	2,100	1,764	3	1,932	1,929	72350%
Non-Resident	**Non-Residential Smart $aver Cust**	NRCUST	4,465	11,338	10,994	13,744	14,721	8,932	14,232	5,300	59%
Non-Resident	**Non-Residential Smart $aver Cust**	NROTHR	-	-	-	-	-	-	-	-	0%
Non-Resident	**Non-Residential Smart $aver Perf**	NRPPRF	1	37	62	7,227,548	4,826,774	33	6,027,161	6,027,128	18081383%
Non-Resident	**Small Business Energy Saver**	SSBDIR	40,204,550	38,604,480	33,301,332	36,000,000	34,000,000	37,370,121	35,000,000	(2,370,121)	-6%

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Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-28

DUKE ENERGY PROGRESS, LLC

Request:

In its *Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice*, NCUC Docket No. E-2, Sub 1206 (Dec. 13, 2019), the Commission ordered DEP to, among other things, provide a summary of progress made in addressing forecasted energy savings declines.

a. Has the Company satisfied that request?
b. If so, please provide details on DEP's plans to address the forecasted declines.
c. If DEP has not satisfied that request, what is preventing the Company from addressing the forecasted energy savings declines?

Response:

a. Yes, the Company has provided the explanation as part of its annual filing.

b. Page 8, lines 9 through 18, of the Direct Testimony of Robert P. Evans details the Company's response to the Commissions request.

c. Not applicable.

Portfolio Level Opportunities & Challenges Summary Report | January 2019

In addition to a continued focus on individual program opportunities, Collaborative stakeholders decided in January 2019 to select two priority focus areas for the year:

- Finding ways to increase savings impact for low-income customers
- Assessing Portfolio Level Opportunities and Challenges

The choice to focus on Portfolio Level Opportunities and Challenges was driven by a desire to establish a common understanding among Collaborative participants around the cross-cutting factors that could impact the potential for expanding energy efficiency savings through individual programs. It also provided a way to identify the broader dynamics that would impact ***total*** energy efficiency savings in the years to come. The opportunities and challenges outlined below provide valuable context and help hone our attention on areas for future work together in the Collaborative for 2020 and beyond.

Primary Objective

Through regular convenings of utility staff, energy efficiency advocates and other key stakeholders, the Collaborative strives to facilitate Duke's ability to increase total savings from its energy efficiency and demand response program portfolios and to expand the number and types of customers participating in the company's EE/DSM programs.

Successful engagement requires a two-way flow of information to bring information to Duke from the Collaborative and to the Collaborative from Duke.

The 1% Savings Target

The 1% savings target originated with a Settlement Agreement between the Environmental Defense Fund, South Carolina Coastal Conservation League and Duke Energy on December 8th, 2011 as part of the Duke / Progress merger.

- An annual savings target of one percent (1%) of the previous year's retail electricity sales beginning in 2015; and
- A cumulative savings target of seven percent (7%) of retail electricity sales over the five-year time period of 2014-2018
- Compliance subject to existing NCUC and SCPSC EE program approval process using standard cost-effectiveness tests
- Savings verified by rigorous EM&V

Duke Energy Carolinas reached the 1% target in 2017 and 2018. Duke Energy Progress has come close with 0.94 in 2015, though, savings in subsequent years were lower.

Advocates continue to support efforts to reach or surpass the 1% target year after year. As documented in its annual DSM/EE Recovery Rider filings, Duke has shown that its energy efficiency programs deliver substantial financial benefit to customers, and advocates want to maximize this benefit while also

achieving other organizational priorities related to environment and equity. The 1% savings target serves as a guide for identifying additional savings potential and tracking performance drivers, which was a key factor in the Collaborative prioritizing an examination of Portfolio Level Opportunities and Challenges in 2019. Advocates believe that the reference achievements of other jurisdictions—in some cases 2% of retail sales or greater—are another strong indication that 1% savings is achievable in the Carolinas, even given differences in climate, energy costs, and EM&V practices.

Duke currently seeks to achieve the largest amount of cost-effective savings with the least effect on customer rates. This approach is evident in Duke's preference for incentives and administrative costs to be as low as possible without jeopardizing program performance, and for programs to exceed 1.0 UCT scores by a wide margin. Additionally, regulators have been supportive of programs that are as cost effective as possible.

Advocates, while appreciative of Duke's focus, believe that increasing participation and savings may justify increased program expenditures, even if the cost effectiveness score margin declines somewhat and rate impacts are somewhat greater. Advocates acknowledge the need for programs to be cost-effective, and support inclusion of all avoided utility costs and appropriate consideration of a more comprehensive range of customer and social benefits in cost-effectiveness calculations.

Often, utility performance or Energy Efficiency Resources Standards ("EERS") targets set by other states are used as reference points for savings potential. Duke asserts that those comparisons are often misleading and are not an accurate benchmark given wide variations in how savings attribution is determined in different jurisdictions. Duke believes that choosing 1% as the savings target is arbitrary unless it is based on a utility-specific market potential study.[1] Although DEC has achieved 1% of savings in the past, Duke is uncertain that it will be able to achieve similar savings in the future for the following reasons:

- Federal lighting standards impacts are significant and unknown
- Falling avoided costs may undermine cost effectiveness and limit the programs Duke can offer
- EM&V rigor holds Duke to a higher standard than neighboring utilities
- Incremental savings erosion from increasing appliance standards and market saturation drives up costs and drives down net savings
- Increasing numbers of opt out customers fueled by the snowball effect of more savings driving higher rates and additional opt outs

Many members of the Collaborative noted that the 1% benchmark does not reflect the full range of benefits that can be pursued through demand side management, nor does it ensure that different customer segments are receiving those benefits equitably. For instance, the 1% target does not capture the benefits of demand response programs and does not distinguish from what sectors the savings are

[1] Market potentials studies, while a valuable source of information, are inherently conservative and typically do not represent the upper limit of what is cost effectively possible to achieve.

achieved, nor does it adjust for customers who are ineligible to participate based on their opted-out status.

These considerations prompted the Collaborative to ask whether there are additional metrics that warrant attention for assessing Duke's performance, such as:

- Lifecycle savings targets that give the utility credit for a measure's lifetime savings for every year in which the savings occur, rather than only recognizing the first year savings in the year the measure is installed.
- Cumulative savings where a target is set over several years and the incremental savings accumulate year over year.
- Capacity savings targets that recognize the beneficial effects of demand response and efficiency programs that shift load to periods of lower demand.
- Customer-related targets that set specific goals to encourage efforts to increase savings among historically underserved demographics.
- Growth-related targets focus on proactively capturing savings from new load and new customers coming onto the system.

Pressure on savings:

A number of issues outside the influence of the Collaborative in its advisory forum role have a direct or indirect effect on the Company's ability to achieve energy savings through regulated customer programs. There are numerous factors listed below that are expected to put downward pressure on savings, while others will likely lead to increased savings opportunities. Some will have effects that are uncertain at this time.

- Market Dynamics Limiting Utility Efficiency Savings:
    - Natural adoption of efficiency without utility participation is increasing
    - Cost per unit of savings has been increasing (though new technologies have the potential to change this)
    - More stringent federal standards reduce the incremental savings that can be attributed to utility efficiency programs
    - Increasing socket saturation for standard screw-base LED bulbs
    - Lower contractor capacity in some regions
    - Falling avoided costs

- Market Dynamics Supporting Increased Utility Efficiency Savings:
    - Emerging technologies, such as:
        - Advanced Metering Infrastructure and Wi-fi thermostats
        - Smart appliances
        - Smart phone applications
        - Heat pump water heaters

        - Minisplits
        - Induction cooktop stoves
    - Grid modernization that allows for geographically targeted efficiency deployment
    - Electrification opportunities and growth of the utility customer base (in some areas)
    - Aging housing stock
    - Increasing attention to winter demand peaks
    - Opportunities to improve contractor/vendor education and implementation standards or practices.

- Availability of New and Diverse Delivery Channels
    - Midstream and upstream opportunities
    - Real-time communication with customers
    - Customer access to data
    - Customer segmentation and targeting
    - Vendor innovation (eg. residential savings guarantees)

- Related State Policy and Regulatory Matters
    - Commercial and industrial customer opt out statutes
    - Potential changes in cost effectiveness testing
    - Inclusion of Non-Energy Benefits
    - Increasing building codes
    - Expansion of and coordination with gas industry energy efficiency programs
    - Gas industry opposition to fuel switching
    - Utility performance incentive mechanism constraints
    - Current lack of low income utility performance incentive and defined low-income cost effectiveness expectations
    - Integrated Resource Planning requirements (energy efficiency as a resource, etc.)
    - Executive Order 80 (reducing energy and water in gov't buildings, decarbonization, electric transportation)
    - Renewable Energy Portfolio Standard and associated energy efficiency targets
    - Establishing or coordinating with energy efficiency financing opportunities

Portfolio-level Program Issues

Many members of the Collaborative consider 1% achievable if the Company adds new programs or improves and expands existing ones.

Some members suggest that the Collaborative should assist Duke in tackling the following program-related tasks:

- Find new delivery channels through improved marketing (midstream incentives, bulk replacement, community based nonprofit organizations, etc.)
- Find new sources of funding to leverage (WAP, LIHTC, REAP, Green Bank, PACE, etc.)
- Design programs around new technologies (remote monitoring, etc.)
- Design program(s) that leverage existing expertise by providing leads to contractors that perform EE projects (midstream labor)
- Expand trade ally engagement and minimize barriers to participation
- Provide insights from other utilities which have stronger adoption of measures which under-perform in Duke's programs
- Build on existing Duke programs that have been successful
- Investigate ways to incorporate energy code compliance training into EE programming (new construction and existing for both residential and non-residential)
- Expand the reach and impact of Low- and Moderate Income programs
- Avoid lost opportunities in new homes, businesses and communities by developing growth-related initiatives
- Provide offerings that address the needs of small and medium-size commercial customers

Duke currently has a full-time staff of marketing professionals and a team of employees dedicated to new product development. The managers of existing programs are motivated to improve and expand their programs whenever they see opportunities to do so.

Duke proposes that the best contributions for the Collaborative to make are the following:

- Bring the company details about programs Duke does not have but that other utilities are running successfully
- Represent the interests of the constituencies each member's organization serves to eliminate the likelihood that Duke's programs will leave any customers out
- Express support before the state commissions for the Company's efforts to expand and improve programs
- Promote Duke's programs outside the Collaborative

Areas of Focus for 2020

The following program ideas have emerged as potential areas of focus for 2020:

- DEC Residential New Construction
- DEP Income Qualified Weatherization

- Energy Star Retail Products Platform
- Mobile/manufactured home programs
- Code Compliance Credit justification
- Leveraging savings from Advanced Metering Infrastructure
- Expanded midstream products, such as residential HVAC
- Leveraging alternative funding opportunities such as the Rural Energy for America Program
- Seeking new program opportunities to increase low income savings impact (including continued support for LIHTC developers)
- Explore expanded low-income program coordination with SC WAP.

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Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-27

DUKE ENERGY PROGRESS, LLC

Request:

Please describe steps DEP is taking, or planning to take, for 2020 and 2021 to maintain energy savings levels and respond to new customer needs resulting from the COVID-19 pandemic. Specifically, does DEP plan to:

a. Increase investments in specific energy efficiency programs?
b. Modify program measure offerings, incentive levels, or delivery channels to maintain overall savings levels?
c. Modify program measure offerings, incentive levels, or delivery channels to address the needs of customers who have lost their jobs or accrued unpaid electric bills during the pandemic?
d. Prioritize delivering energy efficiency services to customers who have accrued unpaid electric bills since the start of the pandemic?
e. Prioritize delivering energy efficiency services to customers who have become unemployed since the start of the pandemic?
f. Shift funding between program budgets?
g. Seek NCUC authorization to take any steps DEP is not able to do without prior approval that will help the company maintain energy savings levels or better serve the needs of customers impacted by the COVID-19 pandemic?

Response:

a. DEP has been responsive to customer needs since the pandemic in a number of ways. It has suspended disconnections for nonpayment and suspended fees associated with late payments, reconnections, and insufficient check funds payments. Additionally the Duke Foundation has provided financial support for agencies that also provide customer assistance. With respect to energy efficiency programs, DEP is not planning on substantially increasing program investments, but will focus on prudent changes that allow the programs to safely meet customer demand for the various programs. Alternatives are being evaluated and investments may change in this fluid environment. DEP is sensitive to investments that may impact customer bills later and has a fiduciary responsibility to spend prudently even during a pandemic.

b. Currently, the Company is not planning on broad or significant changes to offerings, incentive levels or delivery channels solely based on the pandemic. Some programs may utilize virtual alternatives where the typical interaction isn't safe or practical. The K12 live performance is an example.

c. The programs has not targeted specific COVID-19 impacted customer segments, but rather have prepared program personnel to urgently respond to customer needs regardless of how they have been impacted by the pandemic. Under normal conditions there are customers with urgent requests, and the programs adjust for those special needs. The pandemic may create more of those situations, but the intention is to meet the customer expectations, if possible.

d. The programs have not specifically targeted those customers with offers, but we have modified program protocols to safely respond to customers that need assistance.

e. We do not have a reliable source for identifying unemployed customers, and they have not been specifically targeted for program offers. The programs will respond quickly to customer inquiries or referrals especially when there are time sensitive needs.

f. The Company has not shifted funding between programs, but has focused on establishing reliable protocols, trained staff and proper protective equipment, so most programs can be delivered as projected. As time progresses, DEP will evaluate options to best serve the needs/expectations of customers which could include movement of funds.

g. At this point, DEP has not requested special authorization to take steps without specific NCUC approval. DEP continues to evaluate options that better serve customers, and some of those may require regulatory approval, but DEP isn't requesting an exception to the normal processes.

EVALUATION OF DUKE ENERGY'S HELPING HOME FUND

October 15, 2017

advanced energy

DUKE ENERGY®

Connect. Advocate. Innovate.
N.C. Community Action Association

LOCKHEED MARTIN

EXECUTIVE SUMMARY

Between 2015 and 2017, Duke Energy worked with the North Carolina Community Action Association (NCCAA) and Lockheed Martin to administer the Helping Home Fund, a program helping low-income customers improve their health and safety and manage their energy costs.

Duke Energy was the funding sponsor, with Duke Energy Carolinas and Duke Energy Progress providing a total of $20 million to support appliance replacement, health and safety measures, weatherization, and heating/cooling replacement and repair in participating homes. NCCAA was chosen as the program administrator and contracted with Lockheed Martin to assist with implementation.

In all, the Helping Home Fund reached 3,516 homes with an average of $5,151 in performed work per home. The Helping Home Fund was designed to leverage additional funding as well, including the State Weatherization Assistance Program (NCWAP), which consists of U.S. Department of Energy (DOE) Weatherization Assistance Program (WAP) and Low Income Home Energy Assistance Program (LIHEAP) funds, the PNC Home Beautification Fund, and funds from the North Carolina Housing Finance Agency (NCHFA). Without the Helping Home Fund, more than 40 percent of the participating homes would have been deferred due to funding limitations and program guidelines in the NCWAP. During the time period that the Helping Home Fund was operating, the program spent $20 million. Leveraged funding included:

- **NCWAP: $17 million**
- **PNC Home Beautification: $250,000**
- **NCHFA: $234,000**

Funds were also leveraged from other private funding sources, such as the City of Raleigh and City of Charlotte Urgent Repair Programs, but we were unable to obtain data on their funding levels.

Duke Energy had an interest in understanding the full impact of the program, including leveraging opportunities, and economic and non-energy impacts, such as health, safety and comfort. A number of approaches were taken for this effort. First, the team developed two surveys that were distributed to participating homeowners and service providers. The surveys gauged views of the Helping Home Fund and how people thought the program impacted the lives of families and the larger community. Second, a review of prior research evaluated the monetized values of potential energy and non-energy benefits associated with the program.

Results from the surveys demonstrated that both homeowners and service providers had a very favorable view of the Helping Home Fund. Homeowners noted that they felt safer, more comfortable and healthier in their homes, and reported financial savings that would allow them to pay for other necessities. Service providers applauded the program for its flexibility, staff and communication. Furthermore, the literature review of other low-income weatherization programs revealed that homeowners experienced a variety of non-energy benefits. Conservative estimates in the literature found monetized values for these benefits to be between $4,500 and $10,000 per home.

With the success of the program and the merger between Duke Energy and Piedmont Natural Gas, an additional $2.5 million will be used for a similar program to provide assistance to even more income-qualified families in North Carolina.

The Helping Home Fund reached 3,516 homes with an average of $5,151 in performed work per home.

INTRODUCTION

As a result of the Duke Energy North Carolina rate cases in 2013, Duke Energy allocated $20 million ($10 million from Duke Energy Carolinas [DEC] and $10 million from Duke Energy Progress [DEP]) to assist low-income customers. For both utilities, the $10 million was allocated in the following ways: $3 million was used for health and safety measures and appliance replacement (for DEP, some of these funds also went toward weatherization; DEC has a separate weatherization program), and $7 million was used for heating/cooling system replacement and repair. The actual breakdown of the funds at the time of this report can be seen in **Table 1**.

This program, known as the Helping Home Fund, ran from January 2015 to May 2017. The goal of the funding was to assist low-income customers. Duke Energy saw an opportunity to provide assistance that did not currently exist by providing health and safety repairs, new energy-efficient appliances, and heating systems to help homeowners manage energy costs and increase their disposable income. To meet this goal, the Helping Home Fund worked primarily through weatherization service providers as well as other non-profit agencies that serve families at or below 200 percent of federal poverty guidelines. The program provided income-qualified customers with repairs and energy efficiency upgrades at no cost.

The Helping Home Fund was funded by Duke Energy and administered by the North Carolina Community Action Association (NCCAA). NCCAA partnered with Lockheed Martin, who provided the database for data tracking and reporting, and quality assurance (QA) and quality control (QC). The Helping Home Fund was designed to leverage the State Weatherization Assistance Program (NCWAP) and other public/private funding sources. The funds were allocated to local North Carolina weatherization service providers and several non-profit agencies who completed the projects and were reimbursed once the work was completed. The program was allowed to use 10 percent of the funding for administrative purposes, with 5 percent going to the administrator and 5 percent to the service providers.

The program provided income-qualified customers with repairs and energy efficiency upgrades at no cost.

The monies were transmitted in total to the NCCAA to manage and deposited at PNC Bank. As a result, PNC Bank suggested that the NCCAA apply for a grant from their foundation, which ultimately provided another $250,000 for Helping Home Fund recipients for external beautification or maintenance, such as painting, roof repairs or landscaping.

TABLE 1 • HELPING HOME FUND BREAKDOWN

	DEC	DEP	TOTAL
APPLIANCE REPLACEMENT	$950,343	$620,399	$1,570,742
HEALTH & SAFETY	$1,765,387	$873,998	$2,639,385
HEATING/COOLING REPLACEMENT/REPAIR	$6,395,779	$6,388,239	$12,784,018
WEATHERIZATION TIER 1		$100,217	$100,217
WEATHERIZATION TIER 2		$1,018,932	$1,018,932
PROJECT TOTAL	**$9,111,509**	**$9,001,785**	**$18,113,294**
AVERAGE PER HOUSE			$5,151
ADMINISTRATION	$928,344	$928,344	$1,856,688
OVERALL TOTAL	**$10,039,853**	**$9,930,129**	**$19,969,982**

INTRODUCTION

Because of federal regulations, the NCWAP has a limited amount of funding it can use per house for health, safety and energy measures. If repair monies were not available from either federal or local sources, the home would be deferred. The Helping Home Fund filled this gap, allowing the NCWAP to serve customers who would have otherwise been deferred by service providers by providing the funding to make the needed repairs. Furthermore, North Carolina weatherization agencies' energy efficiency improvements waitlist had been experiencing lengthy delays, and customers were not getting work scheduled or completed. The funding provided additional services to customers and helped to leverage federal and state funds for maximum customer benefit and impact.

The Helping Home Fund focused on four main components:

01 Health and safety

02 Appliance replacement

03 Weatherization (in DEP territory only)

04 Heating/cooling system replacement and repair

In DEC territory, homes already had access to weatherization through the existing energy efficiency Weatherization Program.

LM Captures is Lockheed Martin's tracking and reporting system that service providers used to enter the individual home data for the program. The database required comprehensive data input for customer, home and project details to determine eligibility and track program expenditures and measure level detail by project type. All program activities, including QA/QC and reimbursement request/fulfillment, were also reported.

Funds for health and safety were originally capped at $800 per home, but due to customer needs learned throughout the program, the limit was later raised to $3,000. Health and safety measures included bath fans, vapor barriers, roof repairs, electrical/plumbing repairs, ingress/egress repairs, range repair and replacement, and water heater repair and replacement. Appliance replacement also started with an allotment of $800 per home, but this amount was increased to $2,000. This work included replacing inefficient appliances with ENERGY STAR® refrigerators, clothes washers, clothes dryers and room air conditioners.

Weatherization services were broken down into two tiers.

TIER 1

Tier 1 weatherization was for homes using < 7 kilowatt-hours (kWh) per square foot, < $0.23 per square foot oil/liquid propane (LP) gas heat, or < $0.38 per square foot oil/LP gas heat and water heating. Up to $600 was allotted for the following measures:

- Heating system tune-up and cleaning
- Heating system repair
- Water heater wrap and pipe wrap for electric water heaters
- Cleaning or replacement of electric dryer vents
- ENERGY STAR-certified compact fluorescent lamps (CFLs)
- Low-flow showerheads and aerators
- Weatherstripping doors and windows
- Energy education

INTRODUCTION

TIER 2

Tier 2 weatherization was provided to homes using ≥ 7 kWh per square foot, ≥ $0.23 per square foot oil/LP gas heat, or ≥ $0.38 per square foot oil/LP gas heat and water heating. Here, up to $4,000 was provided for the following:

- **Tier 1 services**
- **Attic insulation**
- **Air sealing**
- **Duct sealing/repair**
- **Wall insulation**
- **Crawl space insulation**
- **Floor insulation**

Since heating/cooling systems account for the majority of an energy bill, 70 percent of the monies were allocated to improve customers' heating systems. The intent was to decrease customers' energy use, thereby providing them with more disposable income. Existing electric furnaces, electric baseboards, and oil or propane systems were replaced with high efficiency heat pumps (minimum 14 Seasonal Energy Efficiency Ratio [SEER] and 8.2 Heating Seasonal Performance Factor [HSPF]). In addition, many homes were found to have elderly residents with wood stoves, and new heating systems and ductwork were installed in these situations as well.

A maximum of $10,000 could be used for heating/cooling system replacement and repair ($6,000 max for heating/cooling and an additional $4,000 to upgrade electrical and/or install new ductwork). Consistent with Tier 2 weatherization, heating/cooling system replacement and repair required energy usage per year to meet the following requirements:

- **≥ 7 kWh per square foot,**
- **≥ $0.23 per square foot oil/LP gas heat, or**
- **≥ $0.38 per square foot oil/LP gas heat and water heating.**

High efficiency mini splits were allowed when a home did not have a centrally ducted system or the duct repairs exceeded an estimated threshold. Funds could also be used to upgrade the electrical system or repair/replace duct systems. All of the ductwork had to be insulated and sealed with mastic. Homes also had to have been weatherized as part of the installation of a new heating/cooling system, requiring proper sizing of the system.

STUDY DESCRIPTION AND METHOD

As the Helping Home Fund was nearing completion, Duke Energy had an interest in understanding the impacts of non-energy benefits among program participants and implementation service providers. Non-energy benefits can include a wide variety of improvements, such as those to economics, health, safety, quality of life and comfort. Studying and documenting these benefits helps determine the true cost-effectiveness of home energy programs and interventions.

In performing the analysis, the first step was to narrow down the array of potential non-energy benefits to specific ones to evaluate within the Helping Home Fund. The team selected health, safety, comfort, improved disposable income, and economic sustainability/community impact.

To measure these impacts, two surveys were developed (see Appendix I). One survey went to participating homeowners, and a second survey was administered to the service providers that implemented the program measures and coordinated the work. To supplement the survey results and further characterize the outcomes of the Helping Home Fund, the team conducted a literature review to monetize the non-energy benefits. The results of this component of the program can be found later in the report.

NON-ENERGY BENEFITS

HEALTH

Health included measures such as the number of doctor's visits, decreased asthma symptoms and other homeowner health effects.

SAFETY

Safety included homeowners' accessibility or ability to move about their homes, as well as electrical and durability issues.

COMFORT

Comfort addressed whether occupants felt that their homes were more comfortable.

DISPOSABLE INCOME

Disposable income looked at whether the Helping Home Fund provided homeowners with additional income to spend on other necessities.

ECONOMIC SUSTAINABILITY

Economic sustainability/community impact included effects on service provider employment and home deferrals, among others.

PROGRAM SUMMARY

The Helping Home Fund served 3,516 homes with an average of two projects each (e.g., appliance replacement, heating/cooling system replacement/repair, health and safety measures). Homeowner incomes had to be below 200 percent of federal poverty guidelines to participate. The homes were assessed by local service providers serving low-income customers to determine what measures were most appropriate. The work was then completed by either service provider-based crews or subcontractors.

The homes were reported and tracked on a project level. Table 2 shows the average dollars spent per project category.

TABLE 2 • AVERAGE DOLLARS SPENT PER PROJECT

	APPLIANCES	HEALTH & SAFETY	HEATING/COOLING REPLACEMENT/ REPAIR	WEATHERIZATION TIER 1	WEATHERIZATION TIER 2	TOTAL
TOTAL SPENT	$1,570,742	$2,639,385	$12,784,018	$100,217	$1,018,932	$18,113,294
NUMBER OF PROJECTS	1,676	2,731	1,878	323	488	7,096
PROJECT TOTAL	**$937**	**$966**	**$6,807**	**$310**	**$2,088**	**$2,553**

Through the heating/cooling system replacements and repairs, more than 1,300 homes went from non-functioning to functioning heating systems (Table 3).

TABLE 3 • PRE-RETROFIT HEATING BREAKDOWN OF HOMES RECEIVING HEATING REPLACEMENT

EXISTING FUEL TYPE	NUMBER FUNCTIONING	NUMBER NON-FUNCTIONING	TOTAL
WOOD	7	26	33
ELECTRICITY	410	1,060	1,470
KEROSENE	9	9	18
NATURAL GAS	1	14	15
OIL/LP	107	222	329
NO HEAT	0	13	13
TOTAL	534	1,344	1,878

Note. All heating types converted to heat pumps with a SEER of 14 or greater.

The majority of homes (92 percent) were single-family detached and mobile homes. The remaining were multifamily units and townhomes or condominiums (Table 4).

TABLE 4 • BREAKDOWN OF HOMES SERVED BY THE HELPING HOME FUND

	SINGLE-FAMILY DETACHED	MOBILE HOME	MULTIFAMILY (5+ UNITS)	MULTIFAMILY (2-4 UNITS)	TOWNHOME/ CONDO	TOTAL
NUMBER OF HOMES	2,362	858	196	67	33	3,516

PROGRAM SUMMARY

The subset of customers that responded to the homeowner survey provided information regarding the number of children, elderly, and individuals with disabilities or respiratory illness (Table 5). With these varying degrees of vulnerability, it can be difficult for occupants to stay in their homes. The Helping Home Fund was able to provide services to populations that may not have otherwise been reached.

TABLE 5 • HELPING HOME FUND SURVEY RESPONSE

OCCUPANT CATEGORY	NUMBER OF OCCUPANTS
UNDER THE AGE OF 18	112
OVER THE AGE OF 60	275
IDENTIFY AS DISABLED	237
IDENTIFY AS HAVING A RESPIRATORY ILLNESS	171

Note. Included data from 317 survey respondents.

The Helping Home Fund spending on each participating home ranged from $114.32 to $19,825.31, with an average of $5,151. Additional funding sources were used on these homes as well, including the NCWAP, PNC Home Beautification and the NCHFA (Table 6). NCWAP funds were used for heating/cooling systems and weatherization, while PNC Home Beautification focused on exterior improvement, such as landscaping, painting and roofing. NCHFA funds were used for heating/cooling systems, weatherization and structural repairs. Therefore, although a house received an average of $5,151 through the Helping Home Fund, additional work may have been performed thanks to these other funding sources.

"We are no longer cold during the winter and hot in the summer."

TABLE 6 • HELPING HOME FUND LEVERAGED FUNDS (2015-2017)

SOURCE	AMOUNT LEVERAGED
NCWAP (INCLUDES DOE WAP AND LIHEAP)	$17,321,491
PNC HOME BEAUTIFICATION	$250,000
NCHFA	$234,000

Note. Unable to obtain data for amount leveraged from other private funding.

To ensure that measures were installed correctly and funding was properly documented, randomly selected QC inspections were performed on completed jobs. At least 10 percent of homes with health and safety projects, appliance replacement or weatherization measures received QC, along with at least 25 percent of homes with heating/cooling system replacements and repairs.

QC inspectors conducted monitoring visits to evaluate effectiveness, safety, workmanship and compliance with program guidelines. They also addressed educational opportunities with local providers and customers during the on-site verification process. The process included a paper file review as well as an on-site visit with representation from a service provider. All measures installed with Duke Energy funds were verified to be present and compliant with work orders and materials invoiced. The quality of the workmanship was also evaluated, and QC inspection results were documented and discussed.

All QC documentation, on-site inspection details, reports and actions were uploaded into LM Captures. QC return visits were minimal, and all issues were addressed.

SURVEYS

The surveys sought to gauge the non-energy benefits and impacts of the Helping Home Fund. The full surveys, as well as responses from homeowners and service providers, can be found in Appendices I-III.

Homeowner Survey

The homeowner survey was designed to understand how the Helping Home Fund affected program occupants. Homeowners were randomly selected, and outbound calls were conducted by Duke Energy's call center for approximately one month. A total of 901 homeowners were contacted, with 317 completing the survey (a 35 percent completion rate).

The homeowners overall had a highly positive view of the Helping Home fund. Ninety-two percent of respondents reported feeling safer in their homes, and 81 percent said they have better home accessibility (e.g., getting into and out of the home).

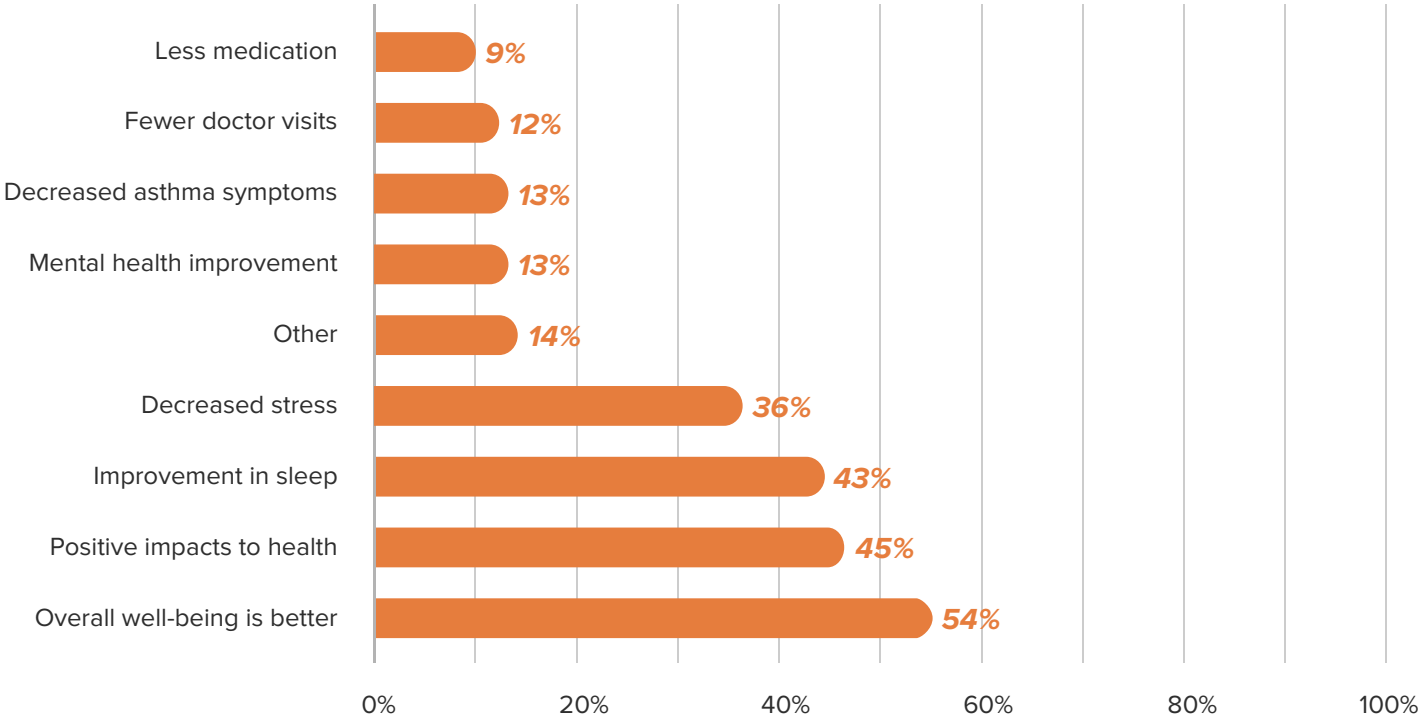
Additionally, 91 percent said the improvements from the Helping Home Fund made it possible for them to stay in their current location, and 96 percent responded that their lives have been made easier in some form. "They did a good job and it really helped me a long way," said one homeowner. "They put windows in my home so it feels warmer and I truly appreciate everything that you all did."

Forty-nine percent of respondents indicated that the Helping Home Fund upgrades definitely allowed them to have more money available to pay for other necessities, while an additional 29 percent said they somewhat did.

"My light bill has been a lot lower, so that helps me have extra money. My water bill has been lower too. It has been a lot better than in years past."

FIGURE 1 • HOMEOWNER SURVEY RESPONSES

Survey question: Have you (or any family members) noticed any positive health impacts due to the upgrades to your home? Check all that apply.

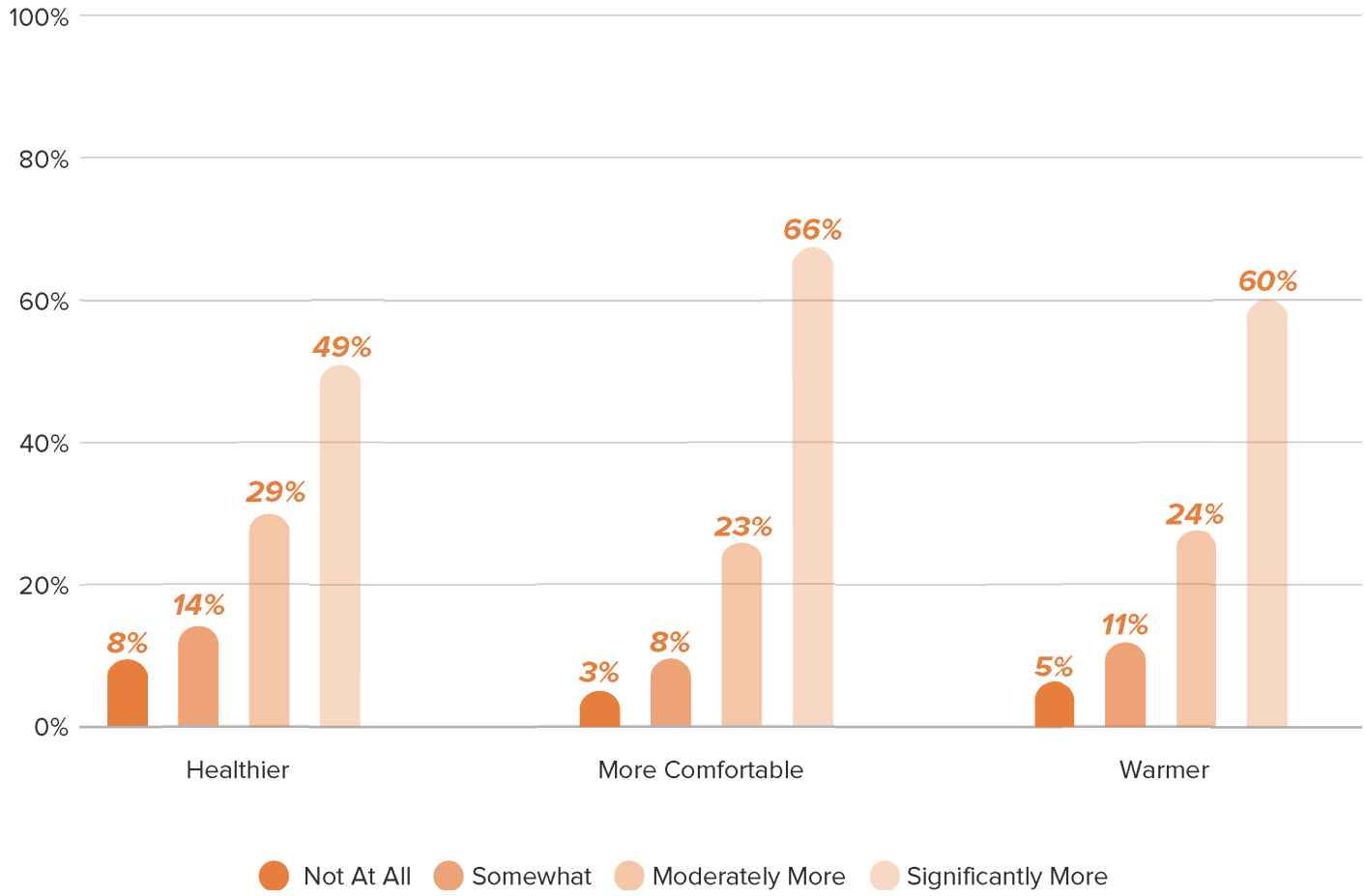


SURVEYS

Homeowners reported a number of positive health impacts for themselves and their families, including better overall well-being, sleep improvement and decreased stress (Figure 1). “If it wasn’t for Duke I could still be in the hospital. Heat affects me very bad with my medical condition so to feel cooling has made a world of difference. I am now able to keep my body temperature down,” reported one homeowner. Likewise, homeowners said they generally feel healthier, more comfortable and warmer as a result of the Helping Home Fund (Figure 2).

FIGURE 2 • HOMEOWNER SURVEY RESPONSES

Survey question: Are you healthier / more comfortable / warmer in your home because of the improvements made?



SURVEYS

Service Provider Survey

The service provider survey was developed to assess the effects of the Helping Home Fund on participating service providers, their crews and subcontractors, and the homeowners they served. Twenty-four participating service providers were sent the survey via email, and all responded. The service providers had a very positive view of the Helping Home Fund. They applauded the staff, communication, benefits to homeowners, flexibility and reimbursement process. According to one service provider, "Overall, (the) Helping Home Fund has been both impactful for the community and rewarding for our agency to serve others in need. We would love to be considered for future opportunities."

In particular, service providers praised the Helping Home Fund for its effect on low-income homeowners: Every provider responded that the program had a positive influence. They reported that an average of 44 percent of the homes they worked on through the Helping Home Fund would have otherwise been deferred.

"It has allowed us to serve more people in our counties that would not have gotten any service this fiscal year."

Fifty-four percent of respondents felt there was a strong positive influence of the Helping Home Fund on the local community. In terms of service provider hiring, 46 percent of service providers indicated that the program affected staff employment, 4 percent said it somewhat did, and 50 percent said it did not.

The most commonly completed measures by service provider-based (i.e., agency-based) crews included insulation and air sealing, duct sealing and structural repairs to roofs, stairs, railings and windows (Table 7). Subcontractors also performed substantial work. Service providers reported that during 2015 and 2016, subcontractors were hired to help complete over 90 percent of jobs, which included electrical work, heating/cooling system repair or replacement, and plumbing (Table 7). All service providers noted that the quality of the contractor crews was either good or excellent, and most (83 percent) did not have difficulty finding contractors to work on homes. When there was difficulty, it was typically regarding electrical contractors.

The service providers reported receiving funding from a variety of sources in addition to the Helping Home Fund. As noted earlier, more than $17 million was leveraged from the NCWAP, NCHFA and PNC Home Beautification, as well as other undisclosed funding sources. Service providers noted some variability and uncertainty in funding over the last five years. One

TABLE 7 • SERVICE PROVIDER SURVEY RESPONSES

Survey question: What measures did you install with an agency-based crew? What measures did you install using subcontractors? Check all that apply.

MEASURE	NUMBER OF SERVICE PROVIDERS USING AGENCY-BASED CREWS	NUMBER OF SERVICE PROVIDERS USING SUBCONTRACTORS
PLUMBING	2	19
ELECTRICAL	2	23
HEATING/COOLING REPAIR/REPLACEMENT	2	22
INSULATION/AIR SEALING	13	13
DUCT SEALING	13	11
STRUCTURAL REPAIRS	11	13

SURVEYS

service provider stated, "With the support of (the) Helping Home Fund, we were able to expand service delivery to Duke Energy Progress customers. Our agency's primary funding source was limited for FY 2017; therefore, Helping Home Funds were leveraged and resulted in more customers receiving home improvements to support energy use reduction and for some improved health conditions. In addition, the opportunity to complete appliance replacement might not have happened without Helping Home Funds."

MONETIZING NON-ENERGY IMPACTS

To get a better understanding of the monetization of non-energy impacts of the Helping Home Fund, we examined prior studies and program analyses. We relied heavily on a study conducted by Tonn, Rose, Hawkins, and Conlon (2014), which monetized non-energy benefits from the DOE WAP. This study was relevant for a number of reasons, including its focus on low-income housing and the overlap in non-energy measures being explored. It also used a robust sample size, attributing results to more than 80,000 homes.

Tonn et al. (2014) used a variety of approaches to monetize the non-energy impacts. The researchers evaluated pre- and post-weatherization survey data, relied on objective cost data from existing databases where available, and then performed monetization exercises to calculate the lifetime benefit over 10 years. The researchers categorized their results into three tiers based on the reliability of the outcomes. Tier 1 estimates were the most reliable, followed by Tiers 2 and 3. Tonn et al. also considered the value of lives saved in their analyses.

We also included data from a literature review from Schweitzer and Tonn (2003). The researchers reviewed approximately 25 articles; some were reports that presented primary research from previous weatherization programs, and others used a meta-analytic approach to examine multiple studies. This effort led to a large set of non-energy benefits, many of which were not addressed by Tonn et al. (2014). Using the available data from the prior literature, Schweitzer and Tonn selected a point estimate for individual non-energy benefits to represent an average value that could be applied to nationwide weatherization programs. In this case, monetized values were calculated using a lifetime benefit over 20 years.

Tables 8 through 12 contain the relevant non-energy benefit monetization estimates from Tonn et al. (2014) and Schweitzer and Tonn (2003). We took certain steps to err on the side of caution with the data to avoid overestimating the monetized values. For Tonn et al., we de-rated their Tier 2 estimates (by 50 percent) and Tier 3 estimates (by 75 percent). We also did not take into account the value of lives saved. For Schweitzer and Tonn, when calculating the monetized value of all non-energy impacts, we only took into account the environmental benefit associated with natural gas, the lower value, and not electricity. All estimates were converted to 2017 dollars using historical consumer price index data.

MONETIZING NON-ENERGY IMPACTS

TABLE 8 • MONETIZATION OF ECONOMIC AND SOCIAL BENEFITS

Tonn et al. (2014) and Schweitzer and Tonn (2003)

NON-ENERGY BENEFIT	MONETIZED VALUE FROM TONN ET AL. (2014) *VALUES BASED ON 10-YEAR LIFETIME BENEFIT*	MONETIZED VALUE FROM SCHWEITZER AND TONN (2003) *VALUES BASED ON 20-YEAR LIFETIME BENEIFT*
INCREASED PROPERTY VALUE		$244.80
DIRECT AND INDIRECT EMPLOYMENT		$1,089.36
AVOIDED UNEMPLOYMENT BENEFITS		$159.12
NATIONAL SECURITY		$436.56
REDUCED MOBILITY		$378.08
LOST RENTAL		$1.36
IMPROVED WORKPLACE PRODUCTIVITY (SLEEP)	$512.17	
IMPROVED HOUSEHOLD PRODUCTIVITY (SLEEP)	$375.44	
FEWER MISSED DAYS AT WORKS	$227.62	
WATER/SEWER SAVINGS		$368.56
REDUCED NEED FOR SHORT-TERM LOANS	$39.99	
REDUCES TRANSACTION COSTS		$50.32
TOTAL	**$1,155.22**	**$2,728.16**

TABLE 9 • MONETIZATION OF HEALTH AND SAFETY BENEFITS

Tonn et al. (2014) and Schweitzer and Tonn (2003)

NON-ENERGY BENEFIT	MONETIZED VALUE FROM TONN ET AL. (2014) *VALUES BASED ON 10-YEAR LIFETIME BENEFIT*	MONETIZED VALUE FROM SCHWEITZER AND TONN (2003) *VALUES BASED ON 20-YEAR LIFETIME BENEIFT*
CO POISONING*	$4.19	
FEWER FIRES	$50.04	$92.48
FEWER ILLNESSES		$74.80
THERMAL STRESS (COLD)	$194.28	
THERMAL STRESS (HEAT)	$95.79	
ASTHMA RELATED	$2,270.09	
REDUCED NEED FOR FOOD ASSISTANCE	$940.16	
INCREASED ABILITY TO AFFORD PRESCRIPTIONS	$1,090.01	
REDUCED LOW-BIRTH WEIGHT BABIES FROM HEAT-OR-EAT COMPROMISE	$55.96	
TOTAL	**$4,700.52**	**$167.28**

*Note. *CO poisoning used a 5-year lifetime benefit.*

MONETIZING NON-ENERGY IMPACTS

TABLE 10 • MONETIZATION OF UTILITY SERVICE BENEFITS

Tonn et al. (2014) and Schweitzer and Tonn (2003)

NON-ENERGY BENEFIT	MONETIZED VALUE FROM TONN ET AL. (2014) *VALUES BASED ON 10-YEAR LIFETIME BENEFIT*	MONETIZED VALUE FROM SCHWEITZER AND TONN (2003) *VALUES BASED ON 20-YEAR LIFETIME BENEIFT*
CARRYING COST OF ARREARAGES		$77.53
BAD DEBT WRITE-OFF		$121.04
FEWER SHUTOFFS AND RECONNECTIONS FOR DELINQUENCY		$10.88
AVOIDED RATE SUBSIDIES		$28.56
INSURANCE SAVINGS		$1.36
REDUCED GAS SERVICE EMERGENCY CALLS		$137.36
FEWER NOTICES AND CUSTOMER CALLS		$8.16
TRANSMISSION AND DISTRIBUTION LOSS REDUCTION		$65.28
AVOIDED SHUTOFFS AND RECONNECTIONS		$23.12
TOTAL	**$0**	**$473.29**

TABLE 11 • MONETIZATION OF ENVIRONMENTAL BENEFITS

Tonn et al. (2014) and Schweitzer and Tonn (2003)

NON-ENERGY BENEFIT	MONETIZED VALUE FROM TONN ET AL. (2014) *VALUES BASED ON 10-YEAR LIFETIME BENEFIT*	MONETIZED VALUE FROM SCHWEITZER AND TONN (2003) *VALUES BASED ON 20-YEAR LIFETIME BENEIFT*
AIR EMISSIONS - ELECTRICITY		$1,324.64
AIR EMISSIONS - NATURAL GAS		$435.20
OTHER BENEFITS		$745.64
TOTAL	**$0**	**$2,505.48**

TABLE 12 • MONETIZATION OF ALL NON-ENERGY BENEFITS

Tonn et al. (2014) and Schweitzer and Tonn (2003)

NON-ENERGY BENEFIT	MONETIZED VALUE FROM TONN ET AL. (2014) *VALUES BASED ON 10-YEAR LIFETIME BENEFIT*	MONETIZED VALUE FROM SCHWEITZER AND TONN (2003) *VALUES BASED ON 20-YEAR LIFETIME BENEIFT*
ALL	**$5,856**	**$4,550**

Note. The total monetized value from Schweitzer and Tonn (2003) excludes air emissions associated with electricity.

MONETIZING NON-ENERGY IMPACTS

The two studies reveal that weatherization and other energy efficiency upgrades can produce a wealth of non-energy benefits with values in the thousands of dollars. At the same time, it is worth noting the lack of overlap in the impacts that Tonn et al. (2014) and Schweitzer and Tonn (2003) examined. Therefore, the overall value of non-energy benefits may be even higher than those reported here.

Given the similarities in the housing stock, occupants and measures installed in the Tonn et al. (2014) and Schweitzer and Tonn (2003) studies when compared to the Helping Home Fund, it is possible to assume that participants in the Helping Home Fund received a similar level of non-energy benefits. Even with our conservative estimates, the non-energy benefits associated with the Helping Home Fund, then, could approach an average of $10,000 per home (the sum of the total non-energy benefits from the two studies). Indeed, the homeowner survey results confirm that those participating in the program did receive non-energy benefits, from health improvements to enhanced comfort and increased ability to stay in their homes. These benefits can be particularly important for occupants who are children, elderly, or have disabilities, respiratory illness or asthma.

The Helping Home Fund was not designed to reduce overall energy use but rather to provide other benefits to low-income customers, such as improved health, comfort and safety. For example, approximately 35 percent of the homes had non-functioning heating systems and the program was able to provide new systems to these customers. The program also provided new washers, dryers and room air conditioning units, since other programs typically did not address this. However, because the program highly leveraged the NCWAP, we can assume that these customers would also receive energy benefits. Based on the literature review, DOE WAP achieves average lifetime energy savings of $4,890 per home (Tonn, Carroll et al. 2014).

Table 13 summarizes the average costs and benefits for participating homes based on total invested funds and estimated benefits from the literature review.

TABLE 13 • SUMMARY OF COSTS AND BENEFITS FOR HELPING HOME FUND

	AVERAGE PRESENT VALUE PER HOME	PRESENT VALUE FOR TOTAL HOMES
ENERGY BENEFITS (COST SAVINGS)[1]	$5,115.33	$17,985,500
NON-ENERGY BENEFITS[2]	$10,312.83	$36,259,910
ECONOMIC AND SOCIAL	$3,883.38	$13,653,964
HEALTH AND SAFETY[3]	$4,775.32	$16,790,025
UTILITY SERVICE	$473.29	$1,664,088
ENVIRONMENTAL[4]	$1,180.84	$4,151,833
TOTAL BENEFITS	$15,428.16	$54,245,410
TOTAL COSTS	$10,124.37	$35,597,294
HELPING HOME FUNDS	$5,151.68	$18,113,294
LEVERAGED FUNDS	$4,972.69	$17,484,000

1. Value based on Tonn, Carroll et al. (2014)
2. Value (and subcategories below) based on summed benefits of Tonn et al. (2014) and Schweitzer and Tonn (2003)
3. Uses the lower monetized estimate of fewer fires, from Tonn et al. (2014)
4. Excludes air emissions associated with electricity from Schweitzer and Tonn (2003)

CHALLENGES AND LESSONS LEARNED

- The NCCAA was the appropriate choice for administering these funds, forming a valuable relationship with Duke Energy. The NCCAA provided access to a network of service providers who were already intricately involved in low-income communities across the state. These service providers were able to quickly access homeowners who met the requirements for participation in the Helping Home Fund. The NCCAA also saw value in being involved with individual agencies throughout the implementation of the program, getting to know their particular challenges and strengths. With this experience and data, the NCCAA is able to provide recommendations to the NCWAP to improve overall performance.
- The NCCAA collaborated with Lockheed Martin to assist with the administrative duties of the program. Lockheed Martin is a strong partner, providing invaluable recommendations for program implementation, QC and data documentation. In addition, Lockheed Martin oversaw key communication and training with service providers that kept the program running smoothly. The ability to adapt and be flexible with service providers, who had varying degrees of experience with implementing programs, was essential.
- Funding levels for individual measures (health and safety - $800 and appliances - $800) were initially too low, resulting in huge requests for exceptions. As a result of these requests, funding for health and safety was increased to $3,000 per home and appliances to $2,000 per home in 2016.
- Funding allocation for administrative costs (5 percent) was insufficient for some of the service providers; however, this could not be changed due to the regulatory filing.
- Delays in obtaining contracts and funding between the service providers and the NCWAP caused issues with completing projects in a timely manner.
- While the data collection process was thorough, some data was not collected during this initial spending cycle but was later learned through the customer surveys. In the future, the Helping Home Fund may consider including the following in data collection:
  - **Number of occupants by age group (to capture number of elderly/children)**
  - **Number of occupants with asthma or disabilities**
  - **Tracking of leveraged funds per home**
  - **Tracking of when measures are installed**
  - **Pre-retrofit survey of homeowners**
- Now that the service providers have been oriented and trained to the program, it should be less costly for them to support the program.
- Based on some of the homeowner surveys, it was determined that they did not realize Duke Energy had funded some of their repairs. While a brochure was developed and available for the agencies to provide homeowners, its use may have dwindled over time. There is an opportunity for better marketing of the program to both homeowners and local communities.
- There were mixed reviews of LM Captures, which is understandable when working with a network of providers with varying degrees of experience with technology and availability of local resources. Role-based dashboard reports provided updates for status and planning. The NCCAA and Lockheed Martin worked closely with service providers to provide one-on-one customer service and support during program launch

CHALLENGES AND LESSONS LEARNED

and throughout the program. Feedback from service providers has resulted in ongoing updates to LM Captures, including easily identified required fields, less data entry on the home page, additional options in drop-down selections and revisions to heating/cooling data entry fields.

- Programs such as the Helping Home Fund are not designed to pass energy efficiency tests. Therefore, the utility only receives funds in special cases, such as during rate cases or mergers. However, evaluating non-energy benefits in addition to traditional energy benefits can help determine the true cost-effectiveness of these programs, and allow the utility to capture the benefits such a program can offer.
- Weatherization service providers are limited in the funds they can spend on health and safety measures, causing many homes to be deferred each year. Working closely with service providers ensured that they used the Helping Home Fund monies in the anticipated manner. This funding source, along with others such as the NCHFA's Single Family Rehab program, works well with WAP so that homes can be retrofit, and homeowners benefit from access to multiple programs that can address different needs. As one example, the Macon County Housing Department "was able to use the monies from the Helping Home Fund in conjunction with other programs such as the Urgent Repair Program, LIHEAP Heating and Air Repair and Replacement Program (HARRP), Single Family Rehab Program and the Weatherization Program."
- Leveraging other programs, while a benefit, was also a challenge for some service providers. It took time for providers to learn how to effectively use different funding sources on the same homes. To help them get up to speed, the Helping Home Fund used multiple methods to train service providers, including webinars, on-site training and ongoing mentoring. Overall, they found that one-on-one training was more effective than group training. The QC field visits were an additional training opportunity for service providers.

NEXT STEPS

The Helping Home Fund recently received an additional $2.5 million when Duke Energy merged with Piedmont Natural Gas. This money will go toward a similar program and will be used in the following ways: $800 for heating/cooling repair and/or maintenance, $3,000 for health and safety, and $2,000 for appliance replacement (refrigerators, washers, dryers, room air conditioners and dehumidifiers). Duke Energy decided to reduce the allocation toward heating/cooling systems due to the limited funding, and to allow the funds to be available over a 12-18 month period.

With the success of the Helping Home Fund, the team is sharing its experience with stakeholders around the country so that others may learn from it and build upon it.

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ABBREVIATIONS AND ACRONYMS

DEC	Duke Energy Carolinas
DEP	Duke Energy Progress
DOE	Department of Energy
HHF	Helping Home Fund
HSPF	Heating Seasonal Performance Factor
LIHEAP	Low Income Home Energy Assistance Program
LM Captures	Database developed and maintained by Lockheed Martin
kWh	Kilowatt-hours
LP	Liquid Propane
NCCAA	North Carolina Community Action Association
NCHFA	North Carolina Housing Finance Agency
NCWAP	North Carolina (State) Weatherization Assistance Program
PNC Home Beautification	Fund offered by PNC bank
QA	Quality Assurance
QC	Quality Control
SEER	Seasonal Energy Efficiency Ratio
WAP	Weatherization Assistance Program

APPENDIX I • SURVEYS

HOMEOWNER SURVEY

Intro Section: (Provide context and explain the value of participating in the survey)

Hello, my name is _____ and I am calling on behalf Duke Energy. I'm calling today because your household participated in a program to receive free home improvements through the XXX Weatherization Agency. As part of this program, a contractor would have come into your home and installed free energy saving products and made home improvements. We would like to take just a few minutes to ask you a few questions.

Are you the person in your household who is most familiar with the improvements that were made to your home?

- ▫ Yes
- ▫ No
- ▫ Don't know
- ▫ Refused

We're speaking with customers who have participated in the program to complete a short survey to learn about their experience and satisfaction with the program. This is not a sales call, and all of your responses will be kept confidential.

Homeowner questions

1. How many children under the age of 18 currently live in the home?
2. How many people over the age of 60 currently live in the home?
3. How many residents in your household identify as disabled?
4. How many residents in your household identify as having a respiratory illness (e.g., asthma)?
5. Can you recall any of the weatherization improvements that were specifically made to your home?
6. Are you aware that the Duke Energy Helping Home Funds were used in your home?
7. If yes, do you know which improvements were paid for by HHF?

8-10. Are you healthier / more comfortable / warmer in your home because of the improvements made?

- ▫ Not at all
- ▫ Somewhat
- ▫ Moderately more
- ▫ Significantly more

11. Have the upgrades to your home allowed you to have more money available to pay for other necessities?

- ▫ Definitely
- ▫ Somewhat
- ▫ No

12. Have you (or any family members) noticed any positive health impacts due to the upgrades to your home? Check all that apply.

- ▫ Positive impacts to health, Less doc visits, overall well-being is better, mental health improvement, improvement in sleep, decreased stress, less medication, decreased asthma symptoms, Other (fill in the blank)

13. Have the improvements made on your house made it possible for you to remain at home (as opposed to needing to move to another location)?

- ▫ Yes
- ▫ No

14. Has your life been made easier through these upgrades?

- ▫ Yes
- ▫ No

15. Do you have better accessibility or access to your home because of these upgrades (e.g., ability to get in and out of your home)?

- ▫ Yes
- ▫ No

16. Do you feel safer in your home (e.g., from injury due to durability issues)?

- ▫ Yes
- ▫ No
- ▫ Somewhat

(If yes or somewhat, please describe)

17. Any other comments regarding Duke Energy's Helping Home Fund you would like to share?

That is all the questions I have today. Thank you so much for your time and have a great day.

APPENDIX I • SURVEYS

Service Provider Survey

Duke Energy launched the Helping Home Fund in North Carolina in January 2015. This fund was designed to assist low-income customers with managing their energy costs while also addressing health and safety. As the first round of funding comes to a close, we are reaching out to participating Weatherization Agencies to hear your feedback. We want to learn about your experience with the program, as well as gather data on how the program impacted local communities. We sincerely appreciate you taking the time to provide responses to the following questions.

Service provider questions

1. Contact Info:
   - ▫ Name
   - ▫ Agency
2. Has the Helping Home Fund had a positive impact on the low-income homeowners that you serve?
   - ▫ Yes, Somewhat, No
3. Have you noticed any positive effects on the local community (beyond the occupants of the homes) from your participation in the Helping Home Program?
   - ▫ Yes, Somewhat, No
4. What % of homes were you able to work on that would have been deferred because of the Helping Home Fund?
5. Did the Helping Home Program have an impact on how many staff your agency employed during the program years?
   - ▫ Yes, Somewhat, No
6. What types of funding does your agency receive on an annual basis? Check all that apply.
   - ▫ LIHEAP
   - ▫ NCHFA
   - ▫ DOE Weatherization
   - ▫ Utility Funds
   - ▫ PNC Beautification Funding
   - ▫ Private Funds
   - ▫ Other (_____)
7. Has that funding varied over the last five years? If yes, please explain to what degree it has varied.
8. What measures did you install with an agency-based crew?
   - ▫ Plumbing
   - ▫ Electrical
   - ▫ HVAC Repair or Replacement
   - ▫ Insulation/Air Sealing
   - ▫ Duct Sealing
   - ▫ Structural Repairs (Roof, Stairs, Railing, Windows)
9. Did the Helping Home Fund impact your ability to retain an agency-based work crew?
   - ▫ Yes, Somewhat, No
10. What measures did you install using subcontractors?
    - ▫ Plumbing
    - ▫ Electrical
    - ▫ HVAC Repair or Replacement
    - ▫ Insulation/Air Sealing
    - ▫ Duct Sealing
    - ▫ Structural Repairs (Roof, Stairs, Railing, Windows)
11. How was the overall quality of contractor crews?
    - ▫ Excellent / Good / Fair / Poor (If fair or poor, please explain what was lacking)
12. Did your agency have difficulty finding local contractors to work on homes?
    - ▫ Yes, Somewhat, No
13. If yes, any suggestions of what could help remedy this situation?
14. If yes, how did this affect what work was completed?

APPENDIX I • SURVEYS

15. If yes, what type of contractors did you having trouble finding?
    - ▫ Plumbing
    - ▫ Electrical
    - ▫ HVAC Repair or Replacement
    - ▫ Insulation/Air Sealing
    - ▫ Duct Sealing
    - ▫ Structural Repairs (Roof, Stairs, Railing, Windows)
16. What percentage of jobs did you hire subcontractors to help you complete the work in 2015 and 2016?
17. If the Helping Home Fund was to be continued as a program, what improvements / changes would you suggest?
18. What worked well about the program?
19. Were there any houses or families that stood out with regard to the impact you observed from participation in the program?
20. Is there anything you want to tell us about your experience with this program?
21. Can we contact you with additional questions? If yes, Name, email address, phone number.

APPENDIX II • HOMEOWNER RESPONSES

I really like the program. Years before I didn't know about different things to make my home efficient. I have told people about it too. I feel like Duke Energy really tried to help people. Thank you so much.

I am so amazed by all Blue Ridge took care of for me with my new ac, the insulation, the moisture barrier the sensor for carbon monoxide and the replacing of my duct work. I am also happy to learn that Duke Energy had a hand in this too. Kudos to Duke Energy. Keep doing what you all doing. I have a testimony about everything that was done for me. I am so grateful. Mr. Dale and his crew were amazing. They did an outstanding job. They gave me a sense of everything going to be alright. The inspector was also great and offered his number to if anything should go wrong with my unit to call him. They did everything they said and much much more. This program is great for older disabled people like me. Anytime you need live customer data or feedback, please call me because I have nothing but good things to say about Blue Ridge and Duke Energy.

I just want to say everybody was nice and good to me. I thank you all. I love my new ac unit. I didn't know Duke Energy was responsible for doing that. I don't have to worry about that being done anymore. This is a good thing to have and I am thankful.

It was very helpful and nice to know assistance is out there for people who may be in a struggle. This is wonderful program also for older customers or those with health issues. I was more concerned with the efficiency of my home and the insulation has been great since added. I'm not worried about how often my units cycles on and off.

Everybody was so kind that came out. Very polite and were courteous to take off their shoes and not track dirt into the home. They also cleaned up after themselves. Very thoughtful. I am thankful for the good Lord to make something like this available to me. The agency also helped replace the faucets and I got light bulbs. I am very thankful for this program. I'm not sure if anything can be done or if someone can direct me, but I am in need of windows. The windows I have now are terrible. I'm using duct tape and plastic to close them shut. I would just love if someone could help guide me to a agency or a program that can help me with my windows.

I thank God for the program. Really overwhelmed with joy and happiness that there was such a program available to help me.

Appreciate this program so much. Helped me because I would have had to find another job to have to done some of the things that were done, especially the new heat pump that was installed. I was blessed with this program and to be able to qualify. I am thankful. It didn't push me into anymore debt and although I am on a fixed income at 73 yrs. old I can still pay my bills and not scraping to make ends meet.

It's the best thing that happened to me, I couldn't afford to have these structure repairs done.... wonderful thing to happen to me it's highly blessing that fell on me!!! the best thing that could have happened for me! So grateful and thankful

All of them were very nice people. I am definitely appreciative of having an electrical heating system in my house. I feel safer now since I don't have to mess with the kerosene heating and worrying about it tipping over or not changing the filter or the possibility o hit burning down more house.

APPENDIX II • HOMEOWNER RESPONSES

Where the back porch was they built steps with a handrail... I was very appreciative, I needed the work done and had no idea how I was going to do it, I was so happy to qualify for the program.... it was a blessing.... I said my prayers and this happened... I really appreciate it....

I am so grateful.....when the contractors came out to my house - I cried.... I was so thankful..... I just want to thank everyone at duke energy from the bottom of my heart!! I don't have to worry about spinning my air unit by hand....it would freeze up and we would have to cut it off by the breakers.... old a/c unit finally stopped running... I had everyone in my family send a letter to the agency thanking them for everything....I send them Christmas cards, send them thank you notes.....

I thought my light bill would come down....but it hasn't.... put insulation in the roof, I appreciate all of the improvements that were done..... thankful for the help.... did a lot of work....

I appreciate the program and I would recommend it to anyone. You guys did such a wonderful job, from the bottom of my heart.

I'm so grateful...I. would like to say thank you from the bottom of my heart... it was getting to the crisis mode where I thought I would have to move..

They put insulation in attic, fixed heat ducts so heat would go down... it's a good thing to help people, it's a good fund if people don't have the income to put stuff in...it's good.

The contractors that were used were excellent, the approach, communication, they were a great group.

I would like to say thank you for the program, its been a life saver...

I think this is a great program. It helped me and my family. I hope more funding becomes available to help other families.

I must say that everyone who came out I was well pleased with. They were all kind mannered and promised to be here and was here at the time given. I am very happy with all things done and happy for my new ac unit. The guy who installed my new system explained everything to me very well.

The crew was great. I hope Duke will be about to continue this service. It has a lot of benefits to the community and I appreciate being able to have had the opportunity. I was out of work during the time my new system was installed so I am thankful. This program is one of the Best programs Duke offers and is an excellent service.

I am surprised that they were able to install my new heat and cool unit in my home because I have an old mill house so I am very grateful that they managed to install it. They did a great job. Everyone was nice and cleaned up after themselves. The inspectors were nice too. I wish I had money to contribute to this fund to help others in need because it is hard when you need improvements and don't have the money or means to pay for it. I am thankful Duke has a program like this and the weatherization agencies.

APPENDIX II • HOMEOWNER RESPONSES

I just think is Godsend. It is such a wonderful program for senior citizens, someone who is disabled that cannot afford to help themselves.

I'm on equalized payment and my bill went from 193 to 120 dollars per month... that extra savings can pay for another bill... I was flabbergasted when I qualified for the program, my heat pump was replaced, washing machine is great, (this machine wrings out clothes so less drying) replaced every light bulb... they were fabulous, couldn't believe it... I work at a non-profit organization, it was unreal, it I hadn't been worked there i wouldn't have known about the program.

Power bill has gone from 500 to 200 dollars per month. We were using space heaters to heat the home & a window unit to cool the home. I'm 100% satisfied that they helped me as much as they did!

My mother doesn't have to worry about buying oil this winter or using a space heater, which is dangerous. Many people do not know about this program and its because of the line of work I am in to why I found out. This has been a life saver. I do not live with my mother but my brother and I were there when everything was being done and I don't know what we would have done without this program because financially we don't have the money to have made these sort of upgrades. My mother is elderly and it gives her now a sense of being safer, warmer and saving money. She can also stay in her own home and not in a living facility. This program saved our lives and we thank you so much.

Having the new windows make me feel safer. Overall I feel better and I am grateful and thank you all.

It was just wonderful and I thank and appreciate it. It's fantastic that Duke can set aside funds to help people like myself that is on a fixed income and elderly. I am a widower and I can't thank you all enough for my new air conditioning system. I am very appreciative of everything and Duke.

The program has done a lot for a lot of people in the neighborhood. I hope that the program continues and help others. My light bill is very very good. I really enjoy the way it is. I hope they decide to do more of this program, especially for senior people who can't afford it. It really came in handy.

It's a great program to help people. I always worked and made it on my own and I have been very independent and then had a lot of medical issues. I have been in a pretty bad shape, and my stuff went out, so I was glad for that program.

I think is a great program for people who really need it. Sometimes is hard to make meets end, so anything that you can do to lower the electric bill, so I think you should do more of these programs.

I really want to thank you for having the program. It helped very much. I am in a lot of medications, so this helped me a lot. I have told people that Duke Energy helped me a lot and that's why I feel better. My bill also decreased and is very nice now.

The whole process was painless. I couldn't have asked for a better set of people. Mark and David were exception. They were great. Neat and courteous. I was so appreciative I cooked them a little something to say thanks.

APPENDIX II • HOMEOWNER RESPONSES

I never knew that Duke Energy was involved. The people that worked on the house they were some of the best people ever. The people that were hired were great people.

I think the program is amazing, for citizens who pay taxes like myself. These improvements allow me to tell others about this program. It's great. I am truly blessed.

They did so much!!! I think it's a real good program who need assistance.. when winter comes I'll really get the benefits.... appreciate the program, a really good program.... the people who administrated the program did a great job! They let me know all of the information.

I just think the program is wonderful. They did so much for us. Me and my sister live here and we are getting out there in age, fixed income, and we couldn't have done any of this without you guys. We don't have to worry about things breaking down. We know that we will be able to stay here for a long time. It is just wonderful!

They all did a fantastic job with the upgrades. After they finished my evaluation my refrigerator went out 4 days later, and it wasn't included.... thank the lord for that program and I was eligible for it. it's a great thing you do for people who can't afford those things, i don't know what i would have done... all the guys were very nice and friendly and everything I'm glad to be a duke energy customer.

Thanks a lot, if it weren't for the upgrades I don't know what me and my mom would do, keep the program going... most definitely... if you can help anybody else like you've helped us, please continue. It was amazing for us!! It was an amazing experience.. the people that did the work were very considerate of me and my home...

I think Duke Energy is good, everything is great, all the upgrades, I couldn't ask for anything any better thanks to duke power, what would we do without them.

Door is a lot more secure, windows are more secure.... previously on windy days you could actually hear the wind blowing inside, it was so bad the wind would move the blinks... there was a lack of sealing previously... I'm glad to know Duke Energy was behind a lot of it.... this place really needed it (public housing).

I think it is a good program for people that are on social security and can't afford big bills. Everyone who came out was really nice and I thank Duke Energy for helping me.

The little boys that the installed the equipment were really nice, they did a good job.. Ms. Cannon wanted to make sure everyone got involved with the installation got an A+ After my a/c was installed I told my girls "I believe I've went to heaven when I woke up."

It has made a world of difference... wasn't aware Duke Energy HHF was involved.. couldn't believe I was eligible for all this equipment... I want to thank Duke Energy for being a company that has helped a consumer, feels very very good!! Absolutely remarkable...

APPENDIX II • HOMEOWNER RESPONSES

Don't have to use plug in heat, feel safer now.... not worried about fires as much, fire/gas alerts system make customer feel safer... Duke Energy has done a wonderful job to help the seniors, a lot of customers can't afford a heating/cooling system, we didn't have the money to put in heating/cooling system. The people who installed the system did a good job, cleaned up before they left.... appreciate washer/dryer, appreciate that..... customer really appreciates everything to the highest..... they removed a lot of stuff from the bottom of the house and they had it all removed... can't complain about any of the services.

Feel safer in home because old heaters were bought from Walmart and they weren't as safe. The HHF has been a blessing, it has made our lives so much easier... Hopefully others can benefit from this program... our electric bills have been cut in 1/2...

I appreciate everything that was done. I appreciate it so much that I wrote thank you letters to everyone with Community Action Opportunities. I am very thankful. I used to burn oil and I didn't have to spend the money this year. They also upgraded my wiring to get the new heat pump in. They took good care in what they did and with me.

I am glad that Duke Energy had the funds to help and assist the disabled. It helped me tremendously. It has helped my bill a lot. It has decreased my bill for about $100 or so.

I am just glad that it was available and we qualified for it, for our HVAC. It was really expensive for us because of kerosene.

I am so thankful for everything that was done for me. Everyone who came out from each of the companies were very professional. Even the Inspectors were nice and not snobs. They assured me that all the electrical work was done correctly. They even installed a smoke and gas detector alarm.

I appreciate the new appliances, because they are more energy efficient. I know down the line they will help me with the electric bill. I greatly appreciate it.

Customer says he and his mother are on disability and it was blessing, and they really appreciated what Duke has done for them.

My personal opinion, I think this program is a blessing. I think that DE is one of the most wonderful companies to help people who are disabled. My husband passed away last year from cancer and this program helped me so much. I am so thankful.

I am greatly thankful for Duke Energy and this type of program. I was in shocked that I could apply and actually got accepted. They replaced my washer and dryer and my ac unit. They also gave me a refrigerator. My house was hot and moldy previous to the improvements and had deteriorated and had critters. I feel healthier overall. If it wasn't for Duke I could still be in the hospital. Heat affects me very bad with my medical condition so to feel cooling has made a world of difference. I am now able to keep my body temperature down. This is a mobile home so it isn't very efficient to begin with. Thank Duke and the weatherization Action Pathways for everything.

Everyone that was sent out was professional from start to finish. From the first inspector to the final inspection inspector. This was very convenient and mindful and everyone was friendly. Definitely keep this type of system around. I hope it can extend across the nation to others in need. I recommend it.

APPENDIX II • HOMEOWNER RESPONSES

Sad to hear that our fearless leader is trying to take programs away like this but I am grateful that it is available. Thank you so much for taking the time out to call to ask about my experience.

I would tell anyone that has the opportunity to do this to please do it immediately. Be careful who you said yes to, but if you know if it is a program that Duke Energy is responsible for, then they will take care of you.

I can breathe a lot better. You all did such a good job. Thank you all for doing this. I am so pleased. Everyone was so nice and the entire thing was enjoyable.

Keep program up. Elderly people need it. After you work all your life then to end up on a fixed income it's hard when things need to be fixed. Sometimes you have to choose to do without meds or maybe food depending on how bad it gets. I thank you all for doing this and keep it up.

Thankful for heat pump and thankful overall for everything that was done and is coming out to her home. During the winter customer feels a lot warmer and during the summer hot months she is a lot cooler. She has noticed breathing better although she doesn't have an issue breather. The quality of the air is better. In the past she has used fans but now feels better overall during the hot days.

If it wasn't for Duke Energy I don't know where I would have been this winter. With previously having to use a wood burner for heat which caused my sons breathing issues I am thank you to Duke for installing a new heat and cool system. I am tickled to death and so pleased of all the work that was done. I am so happy that Duke cares about people who need help and from the bottom of my heart I am thankful.

I was not aware Duke Energy money was used towards the improvements in my home so knowing this is great and I appreciate you all so much. I also like the tips you send out on think that can be done in the home to save money like hanging the clothes to dry instead of using the dryer.

I sure appreciate the things that were done because it helped to better the household. To have a better heating and cooling unit helped a greater deal. They also did the cracks and the bathrooms which was good too.

I have nothing negative to say about my experience. The air conditioning company (Mr. Richard) was awesome. Make note that Mr. Richard explained that this was one of the biggest jobs they have done. It was starting from scratch. No insulation in the attic, no central heat or cool. They also added vent in bathroom and a main breaker. I am so very grateful and thankful and happy to recommend this is anyone I know. I had to wait 2-3 years for this and I am thankful my home had all these improvements made. Tell the program manager that this was exceptional for Duke and the other workers to do.

They did a good job and it really helped me a long way. They put windows in my home so it feels warmer and I truly appreciate everything that you all did. One person in here asthma is as bad and overall we feel good and is comfortable. Thank you so much.

APPENDIX III • SERVICE PROVIDER RESPONSES

WARM was able to assist so many families with these funds. We are so grateful, and wish there were more funds to continue to help so many more families that are in need.

We worked very hard within a short time frame to spend the original allocation, plus the additional funds we requested and received. In about a two year period, we installed over 175 heating systems, a great many appliances, and health & safety and weatherization measures. In spite of all that was accomplished, the need exists for that much more to be done.

It has been an great program for all our eligible clients.

We look forward to continuing to work with Duke, it has been an outstanding opportunity for our agency as well as the customers that have been touched by this program. It has given us the opportunity to bundle services with other agencies to serve customers and provide additional measures in the home.

This was a great program, but the need is still great (10x).

The program support team was very helpful in assisting us from the start to finish and we were able to leverage the funding to provide needed services to the low-income folks CADA serves.

This was one of the best programs we have administered to assist homeowners with appliances. (2x).

The staff at NCCAA and the Martin group were very helpful and easy to work with. The requests for exceptions were processed quickly as were agency reimbursements. This program was a win-win for all involved.

Overall, HHF has been both impactful for the community and rewarding for our agency to serve others in need. We would love to be considered for future opportunities.

Joel Groce with NCCAA did an outstanding job administering the dollars.

This has been a great program. The Duke HHF staff were great and very knowledgeable. Payments were also processed timely.

The HHF program has helped offset many program expenses and has allowed us to continue working longer through the year until the new contract is completed and/or funding is released.

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SACE et al.
Docket No. E-2, Sub 1252
2020 DSM-EE Rider
Data Request No. 1
Item No. 1-30

DUKE ENERGY PROGRESS, LLC

Request:

How does DEP determine the amount for its low-income energy efficiency budgets and savings targets?

Response:

Budget and savings targets are determined by the filed participation numbers for our low-income programs. The participation numbers are generated based on the potential and the workload needed to successfully reach a high completion/penetration rate that also takes into consideration that these programs are not cost-effective.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter, on the Commission's own motion, to review its response to the novel coronavirus (COVID-19) pandemic, including the statewide state of emergency, and to provide guidance and direction to energy and telecommunications providers and other stakeholders.	Case No. U-20757

At the April 15, 2020 meeting of the Michigan Public Service Commission in Lansing, Michigan.

PRESENT: Hon. Sally A. Talberg, Chairman
Hon. Daniel C. Scripps, Commissioner
Hon. Tremaine L. Phillips, Commissioner

ORDER

INTRODUCTION AND PURPOSE

Michigan is facing an unprecedented situation with the novel coronavirus (COVID-19) pandemic threatening human health and disrupting the economy. Michigan continues to operate under Governor Gretchen Whitmer's Stay Home, Stay Safe executive orders[1] to save lives, prohibiting, with certain limited exceptions, in-person work that is not necessary to sustain or protect life to limit the spread of COVID-19. During this tumultuous period in our state's history,

[1] Executive Order 2020-21 directs Michigan residents to remain at home or in their place of residence to the maximum extent feasible effective March 24, 2020, at 12:01 am through April 13, 2020, at 11:59 p.m. Executive Order 2020-42 extends the stay at home order through April 30, 2020, at 11:59 p.m.

These extensions do not impair the Commission's regulatory oversight functions and will provide flexibility for utilities in prioritizing core functions during a critical period.

ENERGY WASTE REDUCTION AND DEMAND RESPONSE PROGRAM CONTINUITY

To help meet customer needs in a reliable, cost-effective manner as additional power plants retire in the state, Michigan utilities have invested in programs to cut energy waste and shift demand away from periods of peak usage such as hot summer days. These energy waste reduction and demand response programs rely on significant interactions with customers, in many cases direct visits to homes, businesses, and other facilities in order to assess building or equipment conditions, install new energy saving measures, and monitor performance. At a time in which affordability is ever so critical, low-income customers may be particularly impacted due to the nature of existing program designs and the need for energy-saving improvements in single and multi-family homes. In addition to affecting the ability to enroll new customers in these programs —which is important to achieve energy and demand savings goals—changes in customer operations and occupancy due to the pandemic could also affect program performance and evaluation. For example, determinations of baseline consumption levels and related financial provisions could be affected under retail and wholesale demand response tariffs.

Pursuant to Act 295, energy waste reduction programs are mandatory for investor-owned natural gas and electric utilities, municipal utilities, and electric cooperatives with specific targets for annual energy savings and approved plans. For Commission-regulated electric utilities, there are also numerous Commission-approved demand response programs and tariffs, some of which are also used to meet electric capacity requirements by the regional transmission operator. To the extent COVID-19 impacts the ability to meet energy and demand savings targets, the implications go beyond statutory and regulatory compliance. This issue has direct reliability and cost

implications for Michigan ratepayers. Therefore, to ensure continuity and contingency planning for these programs, the Commission directs the Staff to develop a work plan and to convene energy providers operating these programs and other stakeholders. The focus will be to:

- Identify potential impacts on meeting energy or demand saving targets and ways to mitigate such impacts and ensure program continuity.
- Identify best practices for continuing to serve low- to moderate-income households, including those impacted directly by COVID-19, and related outreach.

This effort could be handled through individual meetings of the demand response, low-income, and energy waste reduction collaborative/workgroups, or as joint sessions with preset agendas covering specific topics. The Commission requests the Staff to file an update on these efforts by June 15, 2020, but to continue to provide guidance to energy providers in the interim on program implementation in consultation with the Commission's Chief Operating Officer and without further action by the Commission.

SUPPORTING BROADBAND COMMUNICATIONS

With increased teleworking, telecommunications and broadband usage have steeply increased.[15] The pandemic has underscored the urgent need for ubiquitous access to broadband service throughout the state to support telehealth, education, government operations, and our economic well-being. This is particularly important to support schools operating remotely for the remainder of this school year under Executive Order 2020-35. Many communication providers are working to ensure networks can meet demand and committing to customer protections and expanded access. The Commission applauds the proactive response from these providers and

[15] *See*, NCTA COVID Broadband Dashboard: https://www.ncta.com/COVIDdashboard.

Docket E-2, Sub 1252
Exhibit FBW - 15

Duke Energy Carolinas Collaborative Meeting

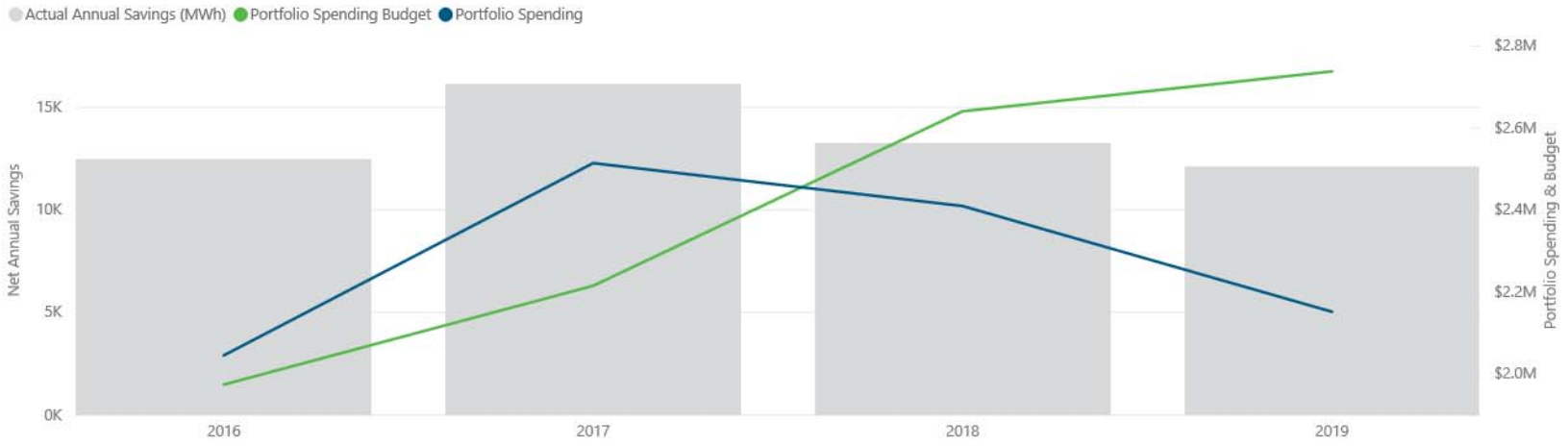
March 19, 2020

DUKE ENERGY®

DEP Multifamily

Multi-Family Program Budget, Savings & Number of Measures

	Expenditures			Energy Savings			Demand Savings			Participants		
Program Year	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%	Budget	Actual	%
2017	$2,215,099	$2,514,413	114%	10,444	16,151	155%	1.02	2.05	200%	201,072	297,837	148%
2018	$2,640,920	$2,409,743	91%	13,579	13,292	98%	1.84	1.74	95%	264,177	288,093	109%
2019	$2,738,339	$2,151,724	79%	15,206	12,107	80%	2.13	1.62	76%	291,444	285,365	98%
2016	$1,974,027	$2,045,220	104%	10,993	12,462	113%	1.08	1.48	137%	211,656	240,436	114%



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	)	**DOCKET NO. E-7, SUB 1230**

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 22, 2020

A. In general, scheduled deadlines and written work product improve work quality and lead to better outcomes. The work of the Collaborative would benefit from having project timelines and concrete work product on certain tasks. This could help to maintain momentum and enable attribution of certain outcomes to the work of the Collaborative. It would also provide a more tangible opportunity for the Commission to track the work of the Collaborative for matters it has referred to the group.

I recommend DEC work with Collaborative members to establish and utilize project deadlines and create work products for select activities.

VI. DSM/EE Rider Intersection With Related Public Policy Considerations

Q. DO THESE DSM/EE RECOVERY RIDER PROCEEDINGS INTERSECT WITH OTHER POLICIES BEFORE THE NORTH CAROLINA UTILITIES COMMMISSION?

A. Yes. The Collaborative's 2019 Portfolio Level Opportunities & Challenges Summary Report noted that state policy and regulatory matters "have a direct or indirect effect on the Company's ability to achieve energy savings through regulated customer programs."[27] Examining these types of policy interactions between DEC's DSM/EE Recovery Rider proceedings and related matters before the Commission serves multiple purposes. It provides valuable context on past and future savings levels and allows us to consider whether there are policy gaps that warrant attention to improve energy efficiency impact for customers. I identify several related Commission policies indicated below:

[27] Energy Efficiency Collaborative Portfolio Level Opportunities and Challenges 2019 Summary Report, page 4 (Attached as Ex. FBW-7)

- Integrated Resource Planning
- New Programs and Program Modifications
- Review of the performance mechanism, rate impact, and possible efficiency targets
- Rate Cases
- DEP DSM/EE Rider

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

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

Integrated resource planning provides the utility, the Commission, and the public with a roadmap for meeting future energy and capacity needs. Because integrated resource planning is a complex process with large numbers of input assumptions, calculation methodology decisions, and modeling results that are subject to interpretation, there is considerable value in maintaining a robust line of communication for information to flow, and to create opportunities for discussion and input while the IRP is being developed.

The Collaborative has aided this line of communication between Duke and stakeholders. Through it the company has shared information related to the DSM/EE market potential study (MPS) over the past year though several successive stages of analysis, received input, and opened a discussion around its

use in the IRP. Recently, Duke engaged the Collaborative in discussion related to the IRP related effort to evaluation DSM/EE potential to address the Company's winter peaking needs.

As we focus on future savings performance in these DSM/EE Rider proceedings, the discussions at the Collaborative take on additional significance, particularly as it relates to closing the gap between Duke's current forecast and the goal of maintaining and exceeding 1% annual savings in future years. For instance, a careful exploration of the costs, benefits, and participation assumptions included in the market potential study track similar discussions at the Collaborative regarding possible improvements to program delivery channels and new program development. As noted in discussions at the Collaborative, the MPS is inherently conservative by design: limiting or ignoring the additional savings potential of new technologies, changes in the value of efficiency due to future capacity needs, cost declines over time, and new deployment strategies that can increase participation rates above past performance. The MPS also uses an asymmetrical version of the Total Resource Cost that includes all costs (customer and utility), without considering non-energy benefits.[28]

The DSM/EE Recovery Rider tracks DEC's energy savings performance and sets expectations for energy savings in the subsequent year. Reviewing past performance can, therefor, indicate the degree to which past IRP's and actual energy savings have aligned or diverged (though that is not the focus of this

[28] An agreement between parties is currently awaiting Commission decision on whether to switch to the Utility Cost Test instead of TRC. But the MPS does not include achievable potential based on UCT.

testimony). If, however, the DSM/EE assumptions used in the IRP underestimate[29] future potential, customer could wind up paying for more expensive power supply rather than investing in less expensive strategies to eliminate energy waste.

Following new guidance from the Commission, the IRP is now also concerned with potential coal retirements[30] and attainment of carbon emissions reduction targets outlined in Duke Corporate commitments and North Carolina's Clean Energy Plan.[31] Ultimately, deployment of future DSM/EE programs and achievement of related emissions reductions will flow through the DSM rider, yet there is presently no tracking of the emissions impacts of DEC's DSM/EE programs. In future years, it would be useful for Duke to report on the emissions impacts of its DSM/EE achievements in these Rider filings.

Moreover, Duke's IRP analysis methods treat DSM/EE as a decrement to load and do not directly optimize DSM/EE against alternative supply resources. In the DEC DSM/EE Rider there also is currently no process through with DSM/EE is optimized. As a result, the process by which future savings levels are determined is opaque at best. While there is a clear overlap between the Rider proceedings and integrated resource planning, further steps towards

[29] 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%.

[30] Order Accepting Integrated Resource Plans and REPS Compliance Plans, Scheduling Oral Argument, and Requiring Additional Analyses, N.C.U.C. Docket No. E-100, Sub 157 (Aug. 27, 2019) ("2018 IRP Order") at 90

[31] 2018 IRP Order at Appendix A, page 3

alignment and documentation between these proceedings would be constructive.

Q. WHAT IS THE CONNECTION BETWEEN THE RIDER PROCEEDINGS AND PROGRAM MODIFICATION AND NEW PROGRAM APPLICATIONS?

A. The Collaborative has had varying degrees of involvement with program modifications and new program development that have come before the Commission and there are others in the pipeline. Our testimony last year focused on some of these as well, including Neighborhood Energy Saver, Residential $mart Saver and replicating a highly successful Residential New Construction program currently offered by Duke Energy Progress. This intersection is important because program designs will be stronger when vetted, support can be built among stakeholders, and the Commission can see the potential value from new and modified program filings in the larger context – such as how new / increased savings translate into portfolio level achievements.

Q. WHAT IS THE CONNECTION BETWEEN THE RIDER PROCEEDINGS AND THE COMMISSION'S REVIEW OF POSSIBLE EFFICIENCY SAVINGS TARGETS AND DUKE'S PERFORMANCE INCENTIVE MECHANISM?

A. The outcomes of Commission action regarding savings targets and DEC's performance incentive mechanism will clearly factor into the savings projections that DEC will provide in future rider filings. The Revisions to the DSM/EE Cost Recovery Mechanism (Docket Nos. E-7 Sub 1032 and E-2, Sub 931) was initially framed around three questions that have major implications for the Rider docket.

(a) Whether the incentives in the current DEP and DEC Mechanisms are producing significant DSM and EE results.
(b) Whether the customer rate impacts of the DSM/EE riders are reasonable and appropriate.
(c) Whether overall DSM/EE program portfolio performance targets should be adopted.

Negotiations between DEC, Public Staff, and intervenors in that proceeding focused heavily on refinements to the Company's portfolio performance mechanism, with a specific aim to strengthen and align Duke's financial motivations around key performance outcome objectives. Included in the proposed changes were a revision and expansion of performance bonuses for DEC achieving the 1% annual savings threshold and increasing low income energy efficiency impact. [32]

The proceeding also raised important questions concerning cost-effectiveness test methodologies, which impacts measure and program selection and future savings forecasts. Those discussions centered on a recommendation to switch the primary cost effectiveness test used for measure and program screening purposes from the Total Resource Cost[33] test to the Utility Cost Test.

The Joint Parties also sought to have the Commission assess the possible inclusion of non-energy benefits in calculations using the Total Resource Cost test.

[32] 2020 Joint Proposed Revisions to DSM/EE Cost-Recovery Mechanism, *supra* Note 21.
[33] A primary reason for this proposed change was a perceived program with use of the TRC, wherein all utility and customer costs were included, but only utility system benefits were included – not customer benefits. This asymmetrical treatment of costs and benefits in effect undermined some efficiency measures and programs that would otherwise be cost effective and resulted in their exclusion. The UCT was recommended instead, because it considers utility costs and benefits only, but in a asymmetrical manner.

In addition to the agreements proposed by the Joint Parties, the Natural Resources Defense Council, Southern Alliance for Clean Energy, the Sierra Club and the South Carolina Coastal Conservation League, together with the North Carolina Sustainable Energy Association presented offered reply comments on certain related issues for the Commission's consideration. These included consideration of a "low-risk" discount rate, potential reporting requirements for customers who opt out of the Company's DSM/EE programs, investigation into the use of decoupling, and consideration of potential efficiency saving targets through creation of an Energy Efficiency Resource Standard.[34] While further work is needed before action can be proposed on these matters, they warrant continued attention and would have potentially significant direct impact on future DEC's DSM/EE recovery rider proceedings.

Q. HOW DO THE DSM/EE RECOVERY RIDER PROCEEDINGS INTERSECT WITH RATEMAKING?

A. DSM/EE investments are widely recognized as a least cost resource that reduces utility system costs, and offsets the need for more expensive power production that would otherwise be passed on to customers through higher electric rates. DSM/EE programs also enable customers to meaningfully reduce their monthly electric bills.

Ratemaking itself has the potential to either support or undermine customer benefits from investments in energy efficiency, particularly through setting fixed charges on customer bills. In essence, a high fixed charge reduces the financial benefit customers can achieve when reducing their volumetric usage.

[34] 2020 Joint Proposed Revisions to DSM/EE Cost-Recovery Mechanism, *supra* Note 21.

Across the Southeast, the issue of utility proposed fixed charge increases have been highly contentious, including in Duke Energy' recent rate cases before the South Carolina Public Service Commission, where the Company abandoned an effort to more than triple its residential fixed charge in the face of a widespread backlash.[35]

Another intersection between ratemaking and energy efficiency that has provided very significant impact in the past came from settlement agreements that resulted in Duke shareholder dollars going to the Helping Home Fund. These dollars have not only led to many more households receiving energy efficiency upgrades, they have made an enormous difference in covering health and safety expenses for projects that would otherwise be rejected – often for customers who are most in need of assistance. Helping Home Funds were critical to the success of the Income-Qualified Weatherization pilot program DEC operated in 2019 and previous reporting has shown that customer benefits extend far beyond lower energy bills to also include quantifiably better health outcomes and higher work productivity.[36] While all Helping Home Funds previously provided by DEC have now been expended, future contributions to this fund could expand opportunities to serve additional hard to reach customers and enable more innovative pilot programs like the one DEC offered last year.

Q. HOW DO THE DSM/EE RECOVERY RIDER PROCEEDINGS INTERSECT WITH THE GOVERNOR'S EMISSION REDUCTION COMMITMENTS?

[35] Order on Application of Duke Energy Carolinas, LLC for Adjustment in Electric Rate Schedules and Tariffs, S.C.P.S.C. Docket No. 2018-319-9 (May 21, 2019).
[36] "Evaluation of Duke Energy's Helping Home Fund," Advanced Energy (October 15, 2017).

A. The Collaborative also identified a connection between Duke's energy efficiency efforts and Governor Roy Cooper Executive Order 80, issued on October 29, 2018, wherein he established "North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy." This commitment aimed to reduce greenhouse gas emissions to 40% below 2005 levels and to reduce energy consumption in state-owned buildings by at least 40% from fiscal year 2002-2003 levels.[37] The corresponding NC Clean Energy Plan, prepared by the Department of Environmental Quality[38] in September 2019, outlines a path to reduce electric power sector greenhouse gas emissions by 70% below 2005 levels by 2030 and attain carbon neutrality by 2050, The CEP expounded on the importance of energy efficiency for achieving the state's goals and noting the myriad benefits associated with efficiency:

> Each incremental investment in EE accrues multiple benefits to consumers, including lower energy bills, increased grid reliability and the deferral or elimination of expensive new generation, transmission and distribution infrastructure investments – costs that would otherwise be borne by ratepayers.[39]

> Today many states are surpassing NC with more aggressive REPS, renewables adoption, EE policies, utility regulatory reforms, and investment activity The corporate drivers alongside the national rankings create an opportunity for NC to take new steps to sustain and grow the economic benefits that clean energy can afford, while continuing to attract businesses, talent and investment to the State.

[37] North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy, Exec. Order No. 80 (Oct. 29 2018) at 1.
[38] In 2019, the Nicholas Institute at Duke University undertook creation of a North Carolina Energy Efficiency Roadmap that substantially informed the Clean Energy Plan prepared by the state's Department of Environmental Quality.
[39] North Carolina Clean Energy Plan: Transitioning to a 21st Century Electricity System, N.C. Dept. of Envtl. Quality (Oct. 2019), at p. 126, *available at:* https://files.nc.gov/governor/documents/files/NC_Clean_Energy_Plan_OCT_2019_.pdf

The Clean Energy Plan included 11 energy efficiency recommendations from the stakeholder-generated North Carolina EE Roadmap[40] including many that should be done in partnership with DEC and the Collaborative. To aid in integrating the Clean Energy Plan with the Company's existing efficiency work, it would be useful for Duke to provide emissions reduction data associated with its DSM/EE portfolio performance as part of its annual rider filings.

Accordingly, I recommend that DEC provide carbon emissions reduction figures associated with achieved savings (annual and cumulative over time) in its annual rider filings and correlate them to CEP emissions reduction targets and the Company's own corporate carbon reduction goals.

Q. WHAT IS THE RELATIONSHIP BETWEEN THE DEC DSM/EE RIDER AND THE DEP DSM/EE RIDER?

A. Although DEC and DEP track DSM/EE savings separately, there is a great deal of overlap and alignment between the two companies on deployment of their energy efficiency portfolios. The Companies share many program designs, staff, implementers, and marketing approaches. The Collaborative supports both Companies, often addressing cross-cutting issue that affect both. And programs deployed through one company, if successful, are not infrequently considered for implementation by the other. All of these connections support success of each company's respective DSM/EE portfolio. In recent years, DEC has achieved higher savings performance, which we hope additionally

[40] In 2019, the Nicholas Institute at Duke University undertook creation of a North Carolina Energy Efficiency Roadmap that substantially informed the Clean Energy Plan prepared by the state's Department of Environmental Quality. https://nicholasinstitute.duke.edu/publications/north-carolina-energy-efficiency-roadmap

motivates DEP to strive for higher savings, including following DEC's past performance and exceeding the 1% annual savings threshold.

VII. **Conclusion**

Q. DO YOU HAVE ANY CONCLUDING STATEMENT?

A. I would like to thank the Commission for the opportunity to submit this testimony. I look forward to continuing to work with Duke, the Commission, Public Staff, and the Collaborative to increase efficiency savings for customers as an integral part of the transition to a clean energy future. This concludes my testimony.