

July 20, 2017

M. Lynn Jarvis
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

Re: Proposed Modifications to the Residential Home Energy Improvement Program
Docket No. E-2, Sub 936

Dear Ms. Jarvis:

Enclosed for filing with and approval by the North Carolina Utilities Commission (the “Commission”) is Duke Energy Progress, LLC’s (“DEP” or the “Company”) proposed modifications to its Residential Home Energy Improvement Program (“HEIP” or the “Program”). HEIP was originally approved by the Commission in its April 30, 2009 Order in Docket No. E-2, Sub 936.

The proposed modifications to HEIP are intended to increase the cost-effectiveness of the program by modifying incentives and eliminating non-cost-effective measures. As the Commission is aware, the Company’s HEIP Program encourages the installation of high efficiency air conditioners and heat pumps, thereby addressing the largest single source of energy consumption in a residential customer’s home. While the Program is a long-standing and critical component of the Company’s portfolio of energy efficiency (“EE”) programs, it continues to be one of the most challenging to run with respect to maintaining its cost-effectiveness as measured by the Total Resource Cost (“TRC”) test. This challenge is primarily driven by increases in HVAC-related standards – namely, the Seasonal Energy Efficiency Ratio (“SEER”). As the efficiency standards have increased, the incremental efficiency associated with each successive SEER rating increase, and the incremental cost of exceeding the standard SEER rating correspondingly increases. For this reason, the costs associated with the TRC test, which account for the participant’s out-of-pocket costs, are in many ways the most difficult to influence because they are beyond the Company’s control.

In addition, DEP proposes to modify the HEIP tariff to mirror the tariff for the related Duke Energy Carolinas, LLC (“DEC”) program – i.e., the HVAC-EE program. DEP and DEC are requesting that both the HEIP and HVAC-EE programs be renamed “Residential Service – Smart Saver Energy Efficiency Program.” A modified version of the HVAC-EE tariff is being filed for approval in Docket No. E-7, Sub 1032 concurrently with DEP’s request in this docket.

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To align the Program with the HVAC-EE program and improve the cost-effectiveness of HEIP, DEP is requesting the Commission to approve the following modifications to its program:

1. As with the corresponding DEP proposal in Docket No. E-7, Sub 1032, rename HEIP as “Residential Service – Smart \$aver Energy Efficiency Program” (“Smart \$aver”);
2. Eliminate the existing tier structure for HVAC incentives;
3. Remove incentives for HVAC equipment with a SEER of less than 15;
4. Discontinue HVAC tune up measures; and
5. Remove incentives for high efficiency room air conditioners.

DEP believes the requested program modifications will substantially increase the cost-effectiveness of the former HEIP Program (now Smart \$aver). The Company has modeled the new Residential Smart \$aver Program’s cost-effectiveness results, with the proposed modifications and the results are provided in the following table:

| Cost-Effectiveness Tests | Cost-Effectiveness Results |
|---|----------------------------|
| Utility Cost Test (<i>UCT</i>) | 2.81 |
| Total Resource Cost Test (<i>TRC</i>) | 1.23 |
| Rate Impact Measure Test (<i>RIM</i>) | 0.94 |
| Participant Test | 1.57 |

While the Company is attempting to increase the Program’s scores under all of the cost-effectiveness tests, DEP’s main focus at this time is elevating the Program’s TRC scores. While the current participant costs for higher efficiency HVAC equipment make this effort challenging, the Company believes that the magnitude of this problem will continue to decrease over time. As a result, the costs of the efficient equipment will likely become less than the current estimated costs assumed in the Company’s cost-effectiveness analysis. As higher efficiency equipment continues to become more prevalent in the marketplace, increased competition amongst manufacturers in the high efficiency HVAC market, and improvements in general manufacturing processes should continue to drive down the incremental costs to customers.

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DEP requests that the Commission:

1. Approve the Residential Service – Smart \$aver Energy Efficiency Program and tariff (formerly known as the Home Energy Improvement Program) provided as Attachment G hereto, until such time that the Commission orders otherwise;
2. Find that the Residential Service – Smart \$aver Energy Efficiency Program (formerly known as the Home Energy Improvement Program) continues to meet the requirements of a “new” EE program consistent with Rule R8-69;
3. Find that all costs incurred by DEP associated with the Smart \$aver Energy Efficiency Program (formerly known as the Home Energy Improvement Program) will be eligible for consideration for cost recovery through the annual DSM/EE rider in accordance with Rule R8-69(b);
4. Approve the proposed utility incentives for inclusion in the annual DSM/EE rider in accordance with Rule R8-69; and
5. Approve the proposed program modifications on or before September 1, 2017.

The Commission’s attention to this matter is appreciated. If you have any questions or need anything further, please let me know.

Respectfully submitted,

/s/ Molly McIntosh Jagannathan

Molly McIntosh Jagannathan

Enclosures

| R8-68 Filing Requirements | |
|---|--|
| Smart \$aver® Energy Efficiency Program | |
| Filing Requirements | |
| (c)(2)(i)(a) | Measure / Program Name Smart \$aver® Energy Efficiency Program ("Program") |
| (c)(2)(i)(b) | Consideration to be Offered Program participants will receive prescriptive incentives for completion of qualified energy saving improvements. |
| (c)(2)(i)(c) | Anticipated Total Cost of the Measure / Program See Attachment B, line 12. |
| (c)(2)(i)(d) | Source and Amount of Funding Proposed to be Used The source of funding will come from the Duke Energy Progress, LLC ("DEP" or the "Company") general fund, consisting of all sources and capital. Costs associated with the Program will also be subject to cost recovery through the Demand-Side Management ("DSM")/Energy Efficiency ("EE") annual cost recovery rider consistent with Commission Rule R8-68(b). See attachment B, line 12. |
| (c)(2)(i)(e) | Proposed Classes of Persons to Whom This Will be Offered This Program is available to customers residing in owner-occupied or landlord-approved single family residences served on a Company offered residential rate. Depending upon market conditions, measure availability for customers residing in other residential structures (i.e. duplexes, condominiums, and mobile homes) may vary. |
| (c)(2)(ii)(a) | Describe the Measure / Program's Objective The objective of this Program is to provide residential customers with opportunities to lower their homes' electric use through improvements made to HVAC equipment and services, water conditioning or pumping devices, as well as improvements made to the structure of their residence. As a result of increased Seasonal Energy Efficiency Ratio (SEER rating) baselines and higher costs for energy efficient equipment, the Company will implement modifications to offer a cost-effective Program. Modifications include removing existing products that are no longer cost-effective. Available measures and corresponding incentives are provided in section (c)(2)(iv)(b) below. Measures that will be offered under through this Program, as modified, include: <ul style="list-style-type: none"> • Central Air Conditioner • Heat Pump • Quality Installation • Smart Thermostat • Attic Insulation and Air Sealing • Duct Sealing • Variable Speed Pool Pumps • Heat Pump Water Heater |
| (c)(2)(ii)(b) | Describe the Measure / Program Duration Duration - see Attachment A, line 1. |
| (c)(2)(ii)(c) | Describe the Measure / Program Sector and Eligibility Requirements The Program is available to homeowners, landlords that implement qualified installations or services for their individually metered single family residences. Individually metered duplexes, mobile homes and condominiums will be handled on a case-by-case basis which will depend upon the structure, maintenance responsibility and dwelling characteristics. |
| (c)(2)(ii)(d) | Examples of Communication Materials and Related Cost Cost associated with communications materials for this Program through various communication channels is approximately \$3,096,000 and is embedded in the cost displayed in Attachment B, line 9. This Program may be promoted through various marketing channels that may include but are not limited to: <ul style="list-style-type: none"> • Trade Allies |

| (c)(2)(ii)(d) (continued) | <ul style="list-style-type: none"> • Direct Mail • TV/Radio • Community Events • Bill Inserts • Retailer Point-of-Sale | | | | | | | | | | |
|--|---|-----------------|--------------------|--|---|-----------------------------|--|--|--|---|--|
| (c)(2)(ii)(e) | Estimated Number of Participants | | | | | | | | | | |
| | Estimated DEP Participation - see Attachment A, lines 3 - 12. | | | | | | | | | | |
| (c)(2)(ii)(f) | Impact that each measure or program is expected to have on the electric public utility or electric membership corporation, its customer body as a whole, and its participating North Carolina customers; | | | | | | | | | | |
| | Estimated DEP Program Impact - see Attachment A, lines 13 - 49. | | | | | | | | | | |
| (c)(2)(ii)(g) | Any other information the electric public utility or electric membership corporation believes is relevant to the application, including information on competition known by the electric public utility or the electric membership corporation. | | | | | | | | | | |
| | Not applicable. | | | | | | | | | | |
| (c)(2)(iii)(a) | <p>Proposed Marketing Plan Including Market Barriers and how the Electric Public Utility Plans to Address Them.</p> <p>The Company will market the Program through various marketing channels that may include, but are not limited to:</p> <ul style="list-style-type: none"> • Trade Allies • Direct Mail • TV/Radio • Community Events • Bill Inserts • Retailer Point-of-Sale <p>The Company may not be aware of all market barriers or understands the methods that can be used to address these market barriers. Potential market barriers include:</p> <table border="1" data-bbox="261 1140 1425 1906"> <thead> <tr> <th data-bbox="261 1140 846 1171">MARKET BARRIERS</th><th data-bbox="846 1140 1425 1171">ACTIONS TO ADDRESS</th></tr> </thead> <tbody> <tr> <td data-bbox="261 1171 846 1507">Communication of program protocols to trade allies</td><td data-bbox="846 1171 1425 1507">The Company will clearly define and communicate Program requirements and measure protocols to potential contractors prior to participation in the Program. The Company will administer training specific to the Program and measures listed, requiring successful completion and a signed agreement evidencing the trade contractors' understanding of and their agreement to perform the services in compliance with Program specifications.</td></tr> <tr> <td data-bbox="261 1507 846 1661">Recruitment of Trade Allies</td><td data-bbox="846 1507 1425 1661">The Company anticipates there may be initial recruitment barriers registering the required number of Trade Allies who can consistently meet the performance metrics required to participate in the referrals delivery channel.</td></tr> <tr> <td data-bbox="261 1661 846 1755">Customer understands of the Company's motivation in promoting energy efficiency.</td><td data-bbox="846 1661 1425 1755">The Company will communicate how this Program benefits not only the customer but also the environment.</td></tr> <tr> <td data-bbox="261 1755 846 1906">Customer adoption of referrals delivery channel</td><td data-bbox="846 1755 1425 1906">The Company will need to market in the appropriate channels to bring high levels of awareness to customers that the Program offers reputable high quality contractors who are selected and monitored to perform HVAC</td></tr> </tbody> </table> | MARKET BARRIERS | ACTIONS TO ADDRESS | Communication of program protocols to trade allies | The Company will clearly define and communicate Program requirements and measure protocols to potential contractors prior to participation in the Program. The Company will administer training specific to the Program and measures listed, requiring successful completion and a signed agreement evidencing the trade contractors' understanding of and their agreement to perform the services in compliance with Program specifications. | Recruitment of Trade Allies | The Company anticipates there may be initial recruitment barriers registering the required number of Trade Allies who can consistently meet the performance metrics required to participate in the referrals delivery channel. | Customer understands of the Company's motivation in promoting energy efficiency. | The Company will communicate how this Program benefits not only the customer but also the environment. | Customer adoption of referrals delivery channel | The Company will need to market in the appropriate channels to bring high levels of awareness to customers that the Program offers reputable high quality contractors who are selected and monitored to perform HVAC |
| MARKET BARRIERS | ACTIONS TO ADDRESS | | | | | | | | | | |
| Communication of program protocols to trade allies | The Company will clearly define and communicate Program requirements and measure protocols to potential contractors prior to participation in the Program. The Company will administer training specific to the Program and measures listed, requiring successful completion and a signed agreement evidencing the trade contractors' understanding of and their agreement to perform the services in compliance with Program specifications. | | | | | | | | | | |
| Recruitment of Trade Allies | The Company anticipates there may be initial recruitment barriers registering the required number of Trade Allies who can consistently meet the performance metrics required to participate in the referrals delivery channel. | | | | | | | | | | |
| Customer understands of the Company's motivation in promoting energy efficiency. | The Company will communicate how this Program benefits not only the customer but also the environment. | | | | | | | | | | |
| Customer adoption of referrals delivery channel | The Company will need to market in the appropriate channels to bring high levels of awareness to customers that the Program offers reputable high quality contractors who are selected and monitored to perform HVAC | | | | | | | | | | |

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|-------------------------------|---|---|
| (c)(2)(iii)(a) (continued) | | and home performance-based services. Communication with the customer on why and how these services are available to them will encourage adoption. |
| (c)(2)(iii)(b) | Total Market Potential and Estimated Market Growth throughout the Duration of the Program; | |
| | Market potential represents the number of eligible customers based on eligibility requirements defined in the Program tariff. There are approximately 900,000 residential customers that meet the criteria for this program. Estimated Market Growth (Participation) - see Attachment A, lines 3 - 12. | |
| (c)(2)(iii)(c) | Estimated Summer and Winter Peak Demand Reduction by Unit Metric and in the Aggregate by Year | |
| | Estimated Summer and Winter Peak Demand Reduction – see Attachment A, lines 13 - 17 and 23 - 24 and Attachment E, lines 1 - 10. | |
| (c)(2)(iii)(d) | Estimated Energy Reduction per Appropriate Unit Metric and in the Aggregate by Year | |
| | Estimated Energy Reduction - see Attachment A, lines 18 - 22 and lines 25 - 29. | |
| (c)(2)(iii)(e) | Estimated Lost Energy Sales per Appropriate Unit metric and in the Aggregate by Year | |
| | Lost Energy Sales - see Attachment A, lines 30 - 39. | |
| (c)(2)(iii)(f) | Estimated Load Shape Impacts | |
| | See responses to (c)(2)(iii)(c) and (c)(c)(iii)(d). | |
| (c)(2)(iv)(a) | Estimated Total and Per Unit Cost and Benefit of the Measure / Program and the Planned Accounting Treatment for Those Costs and Benefits | |
| | Costs associated with this Program will be subject to deferral and amortization. DEP is also eligible to recover a return on any outstanding deferred balance. Total estimated cost by category – see Attachment B lines 6 - 9. Total estimated benefit – see Attachment B line 11. Total estimated per unit cost by category – see Attachment D lines 1 - 25. Data shown on Attachment B represents present value of cost and benefits over the life of the measure. The cost shown in Attachment B reflects the reduction of Program cost offset by projected referrals fees. | |
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| (c)(2)(iv)(b) | Type, Amount, and Reason for Any Participation Incentives and Other Consideration and to Whom They Will be Offered, Including Schedules Listing Participation Incentives and Other Consideration to be Offered | |
| | Prescriptive incentives will be awarded on a consistent and nondiscriminatory basis to eligible customers who have successfully implemented a qualifying measure and submitted a completed application in compliance with Program requirements. Incentive distribution may include, but are not limited to builder rebates, rebate checks, gift cards, pre-paid credit cards, and etc. | |
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| (c)(2)(iv)(b) (continued) | Variable Speed Pool Pump | \$300 |
| | Heat Pump Water Heater | \$350 |
| (c)(2)(iv)(c) | Service Limitations or Conditions Planned to be Imposed on Customers Who do not Participate in the Measure / Program | |
| | None | |
| (c)(2)(v) | Cost-Effectiveness Evaluation (including the results of all cost-effectiveness tests and should include, at a minimum, an analysis of the Total Resource Cost Test, the Participant Test, the Utility Cost Test, and the Ratepayer Impact Measure Test) Description of the Methodology Used to Produce the Impact Estimates, as well as, if Appropriate, Methodologies Considered and Rejected in the Interim Leading to the Final Model Specification "Program Manager to update Analytics to review can confirm source documentation is available to support assumptions" | |
| | The source of the impacts for the existing home performance measures included in the Program is the Residential Smart Saver Additional Measures Program Evaluation, Measurement and Verification ("EM&V") report filed with the North Carolina Utilities Commission ("Commission") on March 4, 2015 in Docket No. E-7, Sub 1073. | |
| | Navigant Consulting is the source of the impacts for the heat pump, central air conditioner, smart thermostat and quality installation measures. | |
| | See Attachment B, line 13 for cost-effectiveness test scores. | |
| (c)(2)(vi) | Commission Guidelines Regarding Incentive Programs (provide the information necessary to comply with the Commission's Revised Guidelines for Resolution of Issues Regarding Incentive Programs, issued by Commission Order on March 27, 1996, in Docket No. M-100, Sub 124, set out as an Appendix to Chapter 8 of these rules) | |
| | The Program does not provide any inducement or incentive affecting a residential customer's decision to install or adopt natural gas or electric service. | |
| (c)(2)(vii) | Integrated Resource Plan (explain in detail how the measure is consistent with the electric public utility's or electric membership corporation's integrated resource plan filings pursuant to Rule R8-60) | |
| | Energy and capacity reductions from this program will be included for planning purposes in future integrated resource plans. | |
| (c)(2)(viii) | Other (any other information the electric public utility or electric membership corporation believes relevant to the application, including information on competition known by the electric public utility or the electric membership corporation) | |
| | Not applicable. | |
| Additional Filing Requirements | | |
| (c)(3)(i)(a) | Costs and Benefits- Any Costs Incurred or Expected to be Incurred in Adopting and Implementing a Measure / Program to be Considered for Recovery Through the Annual Rider Under G.S. 62-133.9 | |
| | See Attachment C, lines 11 - 35. | |
| (c)(3)(i)(b) | Estimated total costs to be avoided by the measure by appropriate capacity, energy and measure unit metric and in the aggregate by year | |
| | See Attachment A, lines 40 - 49. | |
| (c)(3)(i)(c) | Estimated participation incentives by appropriate capacity, energy, and measure unit metric and in the aggregate by year. | |
| | Incentive per cumulative kW - see Attachment E, lines 21 - 25. | |
| | Incentive per cumulative kWh - see Attachment F, lines 16 - 20. | |
| | Incentive per participant - see Attachment D, lines 11 - 15. | |
| (c)(3)(i)(d) | How the electric public utility proposes to allocate the costs and benefits of the measure among the customer classes and jurisdictions it serves. | |
| | The program costs for EE programs targeted at North Carolina and South Carolina retail residential customers are allocated to North Carolina retail jurisdiction based on the ratio of North Carolina retail kWh sales to total retail kWh sales, then recovered only from North Carolina residential | |

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| (c)(3)(i)(d) <i>(continued)</i> | customers. |
| (c)(3)(i)(e) | The capitalization period to allow the utility to recover all costs or those portions of the costs associated with a new program or measure to the extent that those costs are intended to produce future benefits as provided in G.S. 62-133.9(d)(1). |
| | No costs from this Program will be capitalized. |
| (c)(3)(i)(f) | The electric public utility shall also include the estimated and known costs of measurement and verification activities pursuant to the Measurement and Verification Reporting Plan described in paragraph (ii). |
| | Total portfolio evaluation costs are estimated to be 5 percent of total program costs. |
| (c)(3)(ii)(a) | Measurement and Verification Reporting Plan for New Demand-Side Management and Energy Efficiency Measures: Describe the industry-accepted methods to be used to evaluate, measure, verify, and validate the energy and peak demand savings estimated in (2)(iii)c and d above. |
| | EM&V actions will provide an independent, third-party report of energy savings attributable to the Program including an impact analysis and process evaluation. |
| | The impact analysis will review deemed savings assumptions and verify equipment installations. Selective monitoring and site visits will be performed at a sample of participant homes. Depending on the measure and participation levels, the evaluator will select billing analysis and/or engineering-based estimation of energy and demand savings to determine EE impacts. A statistically representative sample of participants will be selected for the analysis. |
| | The process evaluation will include participant and non-participant surveys, along with vendor satisfaction surveys or interviews, to estimate net-to-gross and uncover issues that might impact customer satisfaction or program effectiveness. A statistically representative sample of participants will be selected for the analysis. |
| | The Company intends to follow industry-accepted methodologies for all measurement and verification activities. This evaluation plan is consistent with IPMVP Options A, C, and D. |
| (c)(3)(ii)(b) | Measurement and Verification Reporting Plan for New Demand-Side Management and Energy Efficiency Measures: Provide a schedule for reporting the savings to the Commission; |
| | The Company will report savings associated with this program in its annual DSM/EE cost recovery proceedings. |
| (c)(3)(ii)(c) | Measurement and Verification Reporting Plan for New Demand-Side Management and Energy Efficiency Measures: describe the methodologies used to produce the impact estimates, as well as, if appropriate, the methodologies it considered and rejected in the interim leading to final model specification; and |
| | See (c)(2)(v) |
| (c)(3)(ii)(d) | Measurement and Verification Reporting Plan for New Demand-Side Management and Energy Efficiency Measures: Identify any third party and include all of the costs of that third party, if the electric public utility plans to utilize an independent third party for purposes of measurement and verification |
| | The Company intends to use a third party evaluator. See section (c)(3)(i)(f) for cost. |
| (c)(3)(iii) | Cost Recovery Mechanism- Describe the Proposed Method of Cost Recovery From its Customers |
| | The Company seeks to recover program costs, net lost revenues and a utility incentive pursuant to the cost recovery mechanism approved by the Commission in Docket E-2, Sub 931 on January 20, 2015. |
| (c)(3)(iv) | Tariffs or Rates- Provide Proposed Tariffs or Modifications to Existing Tariffs That Will be Required to Implement Each Measure / Program |
| | The tariff for this Program is included as Attachment G. |
| (c)(3)(v) | Utility Incentives- Indicate Whether it Will Seek to Recover Any Utility Incentives, Including, if Appropriate, Net Lost Revenues, in Addition to its Costs |

(c)(3)(v)
(continued)

The Company seeks to recover program costs, net lost revenues and a utility incentive pursuant to the cost recovery mechanism approved by the Commission in Docket E-2, Sub 931 on January 20, 2015.

Attachment A
Participation

| Smart \$aver Energy Efficiency Program | | |
|--|---|-------------|
| 1 | Measure Life (Average) | 15 |
| 2 | Free Rider % (Average) | 19.4% |
| 3 | Incremental Participants Year 1 | 7,507 |
| 4 | Incremental Participants Year 2 | 7,926 |
| 5 | Incremental Participants Year 3 | 8,135 |
| 6 | Incremental Participants Year 4 | 0 |
| 7 | Incremental Participants Year 5 | 0 |
| 8 | Cumulative Participation Year 1 | 7,507 |
| 9 | Cumulative Participation Year 2 | 15,433 |
| 10 | Cumulative Participation Year 3 | 23,568 |
| 11 | Cumulative Participation Year 4 | 23,568 |
| 12 | Cumulative Participation Year 5 | 23,568 |
| 13 | Cumulative Summer Coincident kW w/ losses (net free) Year 1 | 992 |
| 14 | Cumulative Summer Coincident kW w/ losses (net free) Year 2 | 2,048 |
| 15 | Cumulative Summer Coincident kW w/ losses (net free) Year 3 | 3,150 |
| 16 | Cumulative Summer Coincident kW w/ losses (net free) Year 4 | 3,150 |
| 17 | Cumulative Summer Coincident kW w/ losses (net free) Year 5 | 3,150 |
| 18 | Cumulative kWh w/ losses (net free) Year 1 | 3,645,323 |
| 19 | Cumulative kWh w/ losses (net free) Year 2 | 7,556,211 |
| 20 | Cumulative kWh w/ losses (net free) Year 3 | 11,688,592 |
| 21 | Cumulative kWh w/ losses (net free) Year 4 | 11,688,592 |
| 22 | Cumulative kWh w/ losses (net free) Year 5 | 11,688,592 |
| 23 | Per Participant Weighted Average Coincident Saved Winter kW w/ losses | 0.092 |
| 24 | Per Participant Weighted Average Coincident Saved Summer kW w/ losses | 0.161 |
| 25 | Per Participant Average Annual kWh w/ losses (net free) Year 1 | 486 |
| 26 | Per Participant Average Annual kWh w/ losses (net free) Year 2 | 490 |
| 27 | Per Participant Average Annual kWh w/ losses (net free) Year 3 | 496 |
| 28 | Per Participant Average Annual kWh w/ losses (net free) Year 4 | 496 |
| 29 | Per Participant Average Annual kWh w/ losses (net free) Year 5 | 496 |
| 30 | Cumulative Lost Revenue (net free) Year 1 | \$368,597 |
| 31 | Cumulative Lost Revenue (net free) Year 2 | \$783,234 |
| 32 | Cumulative Lost Revenue (net free) Year 3 | \$1,241,978 |
| 33 | Cumulative Lost Revenue (net free) Year 4 | \$1,273,027 |
| 34 | Cumulative Lost Revenue (net free) Year 5 | \$1,304,853 |
| 35 | Average Lost Revenue per Participant (net free) Year 1 | \$49 |
| 36 | Average Lost Revenue per Participant (net free) Year 2 | \$51 |
| 37 | Average Lost Revenue per Participant (net free) Year 3 | \$53 |
| 38 | Average Lost Revenue per Participant (net free) Year 4 | \$54 |
| 39 | Average Lost Revenue per Participant (net free) Year 5 | \$55 |
| 40 | Total Avoided Costs/MW saved Year 1 | \$119,178 |
| 41 | Total Avoided Costs/MW saved Year 2 | \$121,957 |
| 42 | Total Avoided Costs/MW saved Year 3 | \$124,873 |
| 43 | Total Avoided Costs/MW saved Year 4 | \$127,960 |
| 44 | Total Avoided Costs/MW saved Year 5 | \$131,153 |
| 45 | Total Avoided Costs/MWh saved Year 1 | \$41 |
| 46 | Total Avoided Costs/MWh saved Year 2 | \$42 |
| 47 | Total Avoided Costs/MWh saved Year 3 | \$60 |
| 48 | Total Avoided Costs/MWh saved Year 4 | \$63 |
| 49 | Total Avoided Costs/MWh saved Year 5 | \$63 |

Attachment B
Cost-Effectiveness Evaluation

| Smart \$aver Energy Efficiency Program | | | | | |
|---|---------------------------------------|--------------|--------------|--------------|--------------|
| | | UCT | TRC | RIM | Participant |
| 1 | Avoided T&D Electric | \$1,778,696 | \$1,778,696 | \$1,778,696 | \$0 |
| 2 | Cost-Based Avoided Elec Production | \$8,646,288 | \$8,646,288 | \$8,646,288 | \$0 |
| 3 | Cost-Based Avoided Elec Capacity | \$2,476,266 | \$2,476,266 | \$2,476,266 | \$0 |
| 4 | Participant Elec Bill Savings (gross) | \$0 | \$0 | \$0 | \$16,095,250 |
| 5 | Net Lost Revenue Net Fuel | \$0 | \$0 | \$9,065,436 | \$0 |
| 6 | EM&V Costs | \$494,009 | \$494,009 | \$494,009 | \$0 |
| 7 | Implementation Costs | -\$1,305,862 | -\$1,305,862 | -\$1,305,862 | \$0 |
| 8 | Incentives | \$5,055,769 | \$0 | \$5,055,769 | \$5,055,769 |
| 9 | Other Utility Costs | \$344,405 | \$344,405 | \$344,405 | \$0 |
| 10 | Participant Costs | \$0 | \$10,979,418 | \$0 | \$13,432,858 |
| 11 | Total Benefits | \$12,901,251 | \$12,901,251 | \$12,901,251 | \$21,151,018 |
| 12 | Total Costs | \$4,588,321 | \$10,511,970 | \$13,653,757 | \$13,432,858 |
| 13 | Benefit/Cost Ratios | 2.81 | 1.23 | 0.94 | 1.57 |
| Data represents present value of costs and benefits over the life of the program. | | | | | |

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Attachment C
Program Costs by Year

| Smart \$aver Energy Efficiency Program | | |
|--|---------------------------------|-------------|
| 1 | Incremental Participants Year 1 | 7,507 |
| 2 | Incremental Participants Year 2 | 7,926 |
| 3 | Incremental Participants Year 3 | 8,135 |
| 4 | Incremental Participants Year 4 | 0 |
| 5 | Incremental Participants Year 5 | 0 |
| 6 | Total Participant Costs Year 1 | \$4,576,810 |
| 7 | Total Participant Costs Year 2 | \$4,816,684 |
| 8 | Total Participant Costs Year 3 | \$4,954,383 |
| 9 | Total Participant Costs Year 4 | \$0 |
| 10 | Total Participant Costs Year 5 | \$0 |
| 11 | EM&V Costs Year 1 | \$167,299 |
| 12 | EM&V Costs Year 2 | \$177,554 |
| 13 | EM&V Costs Year 3 | \$182,922 |
| 14 | EM&V Costs Year 4 | \$0 |
| 15 | EM&V Costs Year 5 | \$0 |
| 16 | Implementation Costs Year 1 | (\$430,907) |
| 17 | Implementation Costs Year 2 | (\$482,658) |
| 18 | Implementation Costs Year 3 | (\$482,239) |
| 19 | Implementation Costs Year 4 | \$0 |
| 20 | Implementation Costs Year 5 | \$0 |
| 21 | Total Incentives Year 1 | \$1,708,975 |
| 22 | Total Incentives Year 2 | \$1,817,900 |
| 23 | Total Incentives Year 3 | \$1,874,850 |
| 24 | Total Incentives Year 4 | \$0 |
| 25 | Total Incentives Year 5 | \$0 |
| 26 | Other Utility Costs Year 1 | \$131,058 |
| 27 | Other Utility Costs Year 2 | \$103,130 |
| 28 | Other Utility Costs Year 3 | \$133,135 |
| 29 | Other Utility Costs Year 4 | \$0 |
| 30 | Other Utility Costs Year 5 | \$0 |
| 31 | Total Utility Costs Year 1 | \$1,576,425 |
| 32 | Total Utility Costs Year 2 | \$1,615,926 |
| 33 | Total Utility Costs Year 3 | \$1,708,668 |
| 34 | Total Utility Costs Year 4 | \$0 |
| 35 | Total Utility Costs Year 5 | \$0 |

Attachment D
Program Costs per Participant

| Smart \$aver Energy Efficiency Program | | |
|---|---|--------|
| 1 | Average Per Participant EM&V Costs Year 1 | \$22 |
| 2 | Average Per Participant EM&V Costs Year 2 | \$22 |
| 3 | Average Per Participant EM&V Costs Year 3 | \$22 |
| 4 | Average Per Participant EM&V Costs Year 4 | N/A |
| 5 | Average Per Participant EM&V Costs Year 5 | N/A |
| 6 | Average Per Participant Implementation Costs Year 1 | (\$57) |
| 7 | Average Per Participant Implementation Costs Year 2 | (\$61) |
| 8 | Average Per Participant Implementation Costs Year 3 | (\$59) |
| 9 | Average Per Participant Implementation Costs Year 4 | N/A |
| 10 | Average Per Participant Implementation Costs Year 5 | N/A |
| 11 | Average Per Participant Incentives Year 1 | \$228 |
| 12 | Average Per Participant Incentives Year 2 | \$229 |
| 13 | Average Per Participant Incentives Year 3 | \$230 |
| 14 | Average Per Participant Incentives Year 4 | N/A |
| 15 | Average Per Participant Incentives Year 5 | N/A |
| 16 | Average Per Participant Other Utility Costs Year 1 | \$17 |
| 17 | Average Per Participant Other Utility Costs Year 2 | \$13 |
| 18 | Average Per Participant Other Utility Costs Year 3 | \$16 |
| 19 | Average Per Participant Other Utility Costs Year 4 | N/A |
| 20 | Average Per Participant Other Utility Costs Year 5 | N/A |
| 21 | Average Per Participant Total Utility Costs Year 1 | \$210 |
| 22 | Average Per Participant Total Utility Costs Year 2 | \$204 |
| 23 | Average Per Participant Total Utility Costs Year 3 | \$210 |
| 24 | Average Per Participant Total Utility Costs Year 4 | N/A |
| 25 | Average Per Participant Total Utility Costs Year 5 | N/A |

Attachment E
Program Costs per kW

| Smart \$aver Energy Efficiency Program | | |
|--|--|---------|
| 1 | Cumulative Winter Coincident kW w/ losses (net free) Year 1 | 566 |
| 2 | Cumulative Winter Coincident kW w/ losses (net free) Year 2 | 1,165 |
| 3 | Cumulative Winter Coincident kW w/ losses (net free) Year 3 | 1,784 |
| 4 | Cumulative Winter Coincident kW w/ losses (net free) Year 4 | 1,784 |
| 5 | Cumulative Winter Coincident kW w/ losses (net free) Year 5 | 1,784 |
| 6 | Cumulative Summer Coincident kW w/ losses (net free) Year 1 | 992 |
| 7 | Cumulative Summer Coincident kW w/ losses (net free) Year 2 | 2,048 |
| 8 | Cumulative Summer Coincident kW w/ losses (net free) Year 3 | 3,150 |
| 9 | Cumulative Summer Coincident kW w/ losses (net free) Year 4 | 3,150 |
| 10 | Cumulative Summer Coincident kW w/ losses (net free) Year 5 | 3,150 |
| 11 | EM&V Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$169 |
| 12 | EM&V Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$87 |
| 13 | EM&V Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$58 |
| 14 | EM&V Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | N/A |
| 15 | EM&V Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | N/A |
| 16 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | (\$434) |
| 17 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | (\$236) |
| 18 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | (\$153) |
| 19 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | N/A |
| 20 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | N/A |
| 21 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$1,723 |
| 22 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$888 |
| 23 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$595 |
| 24 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | N/A |
| 25 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | N/A |
| 26 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$132 |
| 27 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$50 |
| 28 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$42 |
| 29 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | N/A |
| 30 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | N/A |
| 31 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$1,589 |
| 32 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$789 |
| 33 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$542 |
| 34 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | N/A |
| 35 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | N/A |

Attachment F
Program Costs per kWh

| Smart \$aver Energy Efficiency Program | | |
|--|---|------------|
| 1 | Cumulative kWh w/ losses (net free) Year 1 | 3,645,323 |
| 2 | Cumulative kWh w/ losses (net free) Year 2 | 7,556,211 |
| 3 | Cumulative kWh w/ losses (net free) Year 3 | 11,688,592 |
| 4 | Cumulative kWh w/ losses (net free) Year 4 | 11,688,592 |
| 5 | Cumulative kWh w/ losses (net free) Year 5 | 11,688,592 |
| 6 | EM&V Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.046 |
| 7 | EM&V Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.023 |
| 8 | EM&V Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.016 |
| 9 | EM&V Costs / Cumulative kWh w/ losses (net free) Year 4 | N/A |
| 10 | EM&V Costs / Cumulative kWh w/ losses (net free) Year 5 | N/A |
| 11 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 1 | (\$0.118) |
| 12 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 2 | (\$0.064) |
| 13 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 3 | (\$0.041) |
| 14 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 4 | N/A |
| 15 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 5 | N/A |
| 16 | Incentives / Cumulative kWh w/ losses (net free) Year 1 | \$0.469 |
| 17 | Incentives / Cumulative kWh w/ losses (net free) Year 2 | \$0.241 |
| 18 | Incentives / Cumulative kWh w/ losses (net free) Year 3 | \$0.160 |
| 19 | Incentives / Cumulative kWh w/ losses (net free) Year 4 | N/A |
| 20 | Incentives / Cumulative kWh w/ losses (net free) Year 5 | N/A |
| 21 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.036 |
| 22 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.014 |
| 23 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.011 |
| 24 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 4 | N/A |
| 25 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 5 | N/A |
| 26 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.432 |
| 27 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.214 |
| 28 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.146 |
| 29 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 4 | N/A |
| 30 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 5 | N/A |

Duke Energy Progress, LLC
(North Carolina Only)

RP-2

RESIDENTIAL SERVICE – SMART \$AVER® ENERGY EFFICIENCY
PROGRAM - RSSEE-1

PURPOSE

The purpose of this program is to encourage the purchase and installation of energy conservation measures designed to increase energy efficiency in new or existing residential dwellings.

PROGRAM

- The program is available to owners of individually metered residences including single family detached, duplexes, townhomes, condominiums, and mobile homes, who are served on a residential service schedule.
- The types of equipment, products, and services eligible for incentives may include, but are not limited to, the following:
 - Heating Ventilation and Air Conditioning (HVAC) equipment
 - Smart thermostats
 - Thermal boundary improvements
 - HVAC duct improvements
 - Water conditioning and/or pumps
 - Other high efficiency equipment, products, and services as determined by the Company on a case by case basis.
- New HVAC equipment must (1) achieve or exceed the minimum Seasonal Energy Efficiency Ratio (SEER), Energy Efficiency Ratio (EER), and/or Heating Seasonal Performance Factor (HSPF) allowed by law and (2) meet all other Duke Energy requirements to achieve designated energy savings.
- The new HVAC system must include a properly matched outdoor unit and inside coil, which must be listed as such by the Air Conditioning, Heating and Refrigeration Institute (AHRI) or any additional certification directory as approved by Duke Energy.
- Qualifying Smart Thermostats (Wi-Fi enabled) must be installed at the time of a qualifying HVAC installation and may be subject to Duke Energy requirements regarding installation, installer, programming, functionality, and square footage of conditioned space.
- Duke Energy will establish performance requirements deemed necessary to ensure achievement of minimum energy savings for other equipment, products, and services offered for incentives. Parameters related to these performance requirements may include, but are not limited to, diagnostic testing, size of conditioned area, building/structure type, energy reduction achievement, installer/installation, and product selection.
- All improvements eligible for payment under this program must be installed based on manufacturer's recommendations and the Company's specifications, including installation by a Company-approved contractor, unless otherwise noted in program requirements. Detailed requirements are available on the Company's website at www.duke-energy.com.
- The Company may vary the incentive by type of equipment and differences in efficiency to induce customers to purchase greater levels of efficiency at the minimum necessary incentive amount. The Company may offer multiple levels of incentives corresponding to varied efficiency levels of equipment or service.
- The Company reserves the right to adjust the incentive on a periodic basis, as appropriate, to reflect changes to efficiency standards and market conditions.
- The Company reserves the right to limit the availability of incentives by the type of residential structure.

- The current amount of the incentive payment for eligible equipment, products, and services will be posted to the Company's website at www.duke-energy.com.
- Incentives may be limited to one of any product, per residence, under all Company Energy Efficiency Programs.
- With Company approval, the owner or customer may designate that incentive be provided to a third-party.
- To qualify for payment under this program, qualifying improvements must be made on or after September 1, 2017 and the application for payment must be made within 90 days of completion of the work
- All energy conservation measures installed shall be subject to inspection by Company for the purposes of program evaluation, measurement, and verification.

PAYMENT

The Company's incentives for individual equipment, products, and services may be offered in a variety of ways, including, but not limited to, point-of-sale discounts, checks, and prepaid credit cards. Incentive payments shall be determined by the Company in an amount not to exceed the following:

- HVAC equipment installations - \$600
- Thermal boundary improvements - \$250
- Duct system improvements - \$100
- Variable speed pool pump installations - \$300
- Heat Pump Water Heater installations - \$350
- For all other appliances and devices provided under this program the incentive will be an amount not to exceed 50% of the installed cost difference between standard equipment or service and higher efficiency equipment or service.

COMPANY RETENTION OF PROGRAM BENEFITS

Incentives and other considerations offered under the terms of this Program are understood to be an essential element in the recipient's decision to participate in the Program. Upon payment of these considerations, Company will be entitled to any and all environmental, energy efficiency, and demand reduction benefits and attributes, including all reporting and compliance rights, associated with participation in the Program.

Supersedes Programs HEIP-5

Effective for service rendered on and after September 1, 2017

NCUC Docket No. E-2, Sub 936