

Smart \$aver Residential

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| R8-68 Filing Requirements | |
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| 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. The modification is being made to (i) expand Program availability to multi-family residential customers, (ii) update the HVAC measures so that eligible measures must be above the current federal baseline, which was updated on January 1, 2023, and (iii) require duct sealing to be part of the HVAC replacement measure, where applicable. |
| (c)(2)(i)(c) | Anticipated Total Cost of the Measure / Program See Attachment B, line 13. |
| (c)(2)(i)(d) | Source and Amount of Funding Proposed to be Used The source of funding will come from the Duke Energy Carolinas, LLC ("DEC" 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 13. |
| (c)(2)(i)(e) | Proposed Classes of Persons to Whom This Will be Offered This Program is available to owners of individually-metered residences including multi-family, single family detached, duplexes, townhomes, condominiums, and mobile homes who are served on a residential service schedule. 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 <p>The objective of this Program is to provide residential customers with opportunities to lower their homes' electric use through certain improvements, which include but are not limited to, improvements 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 continue to offer a cost-effective Program.</p> <p>Modifications include (i) expanding Program availability to multi-family residential customers, (ii) updating the HVAC measures so that eligible measures must be above the current federal baseline, which was updated on January 1, 2023, and (iii) requiring duct sealing to be part of the HVAC replacement measure, where applicable. Available measures and corresponding incentives are provided in section (c)(2)(iv)(b) below.</p> <p>Measures that will be offered under and through this Program, as modified, may include, but are not limited to:</p> <ul style="list-style-type: none"> • Heating Ventilation and Air Conditioning (HVAC) equipment, service, and controls • 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. |
| (c)(2)(ii)(b) | Describe the Measure / Program Duration The average measure life is sixteen years - see Attachment A, line 1. |
| (c)(2)(ii)(c) | Describe the Measure / Program Sector and Eligibility Requirements This Program is available to owners of individually-metered residences including multi-family, single family detached, duplexes, townhomes, condominiums, and mobile homes who are served on a residential service schedule. Depending upon market conditions, measure availability for customers residing in other residential structures (i.e., duplexes, condominiums, and mobile homes) may vary. |

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| <p>(c)(2)(ii)(d)</p> <p>(c)(2)(ii)(d) (continued)</p> | <p>Examples of Communication Materials and Related Cost</p> <p>Cost associated with communications materials for this Program through various communication channels, is approximately \$1,600,000 and is embedded in the cost displayed in Attachment B, line 9.</p> <p>This Program may be promoted through various marketing channels that may include, but are not limited to:</p> <ul style="list-style-type: none"> • Trade Allies • Direct Mail/Email • TV/Radio • Paid Search/Digital Media • Community Events • Bill Inserts • Retailer Point-of-Sale | | | | | | | | |
|---|--|-----------------|--------------------|---|---|------------------------------|---|---|--|
| <p>(c)(2)(ii)(e)</p> | <p>Estimated Number of Participants</p> | | | | | | | | |
| | <p>The term participant as it appears in Attachment A does not represent the term customer. Each customer may have multiple measures installed. Participation will be tracked by each installed measure and is represented in Attachment A. Estimated DEC Participation - see Attachment A, lines 3 - 12.</p> | | | | | | | | |
| <p>(c)(2)(ii)(f)</p> | <p>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;</p> | | | | | | | | |
| | <p>Estimated DEC Program Impact - see Attachment A, lines 13 - 54.</p> | | | | | | | | |
| <p>(c)(2)(ii)(g)</p> | <p>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.</p> | | | | | | | | |
| | <p>Not applicable.</p> | | | | | | | | |
| <p>(c)(2)(iii)(a)</p> | <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/Email • TV/Radio • Paid Search/Digital Media • Community Events • Bill Inserts • Retailer Point-of-Sale <p>Note: The Company may not be aware of all market barriers or understand all the methods that can be used to address these market barriers. Potential market barriers include, but are not limited to:</p> <table border="1" data-bbox="293 1493 1463 1923"> <thead> <tr> <th>MARKET BARRIERS</th><th>ACTIONS TO ADDRESS</th></tr> </thead> <tbody> <tr> <td>Communication of program protocols to trade allies.</td><td>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>Recruitment of Trade Allies.</td><td>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 referral's delivery channel.</td></tr> <tr> <td>Customer understanding of the Company's</td><td>The Company will communicate how this Program benefits not only the customer but also the environment.</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 referral's delivery channel. | Customer understanding of the Company's | The Company will communicate how this Program benefits not only the customer but also the environment. |
| 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 referral's delivery channel. | | | | | | | | |
| Customer understanding of the Company's | The Company will communicate how this Program benefits not only the customer but also the environment. | | | | | | | | |

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| | motivation in promoting energy efficiency. | |
| | Customer adoption of referral's 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 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)(a) (continued) | | |
| (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 1,025,672 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 - 22 and 28 - 29 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 23 - 27 and lines 30 - 34. | |
| (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 35 - 44. | |
| (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 expensed as incurred. DEC 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 12. 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. | |
| (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 methods may include, but are not limited to builder rebates, rebate checks, pre-paid cards, etc. Although the Company reserves the right to adjust the incentive on a periodic basis, as appropriate, to reflect changes to EE standards and market conditions, the initial incentive amounts are listed below. | |
| | MEASURE | MAXIMUM INCENTIVE AMOUNT |
| | Heating Ventilation and Air Conditioning (HVAC) equipment, service, and controls | Up to \$ 500 |
| | Smart Thermostat | \$50 |

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| (c)(2)(iv)(b) (continued) | | |
| | Attic Insulation and Air Sealing | \$250 |
| | Duct Sealing | \$100 |
| | 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 | |
| | The source of the impacts for the existing home performance measures included in the Program is the Residential Smart \$aver Program Evaluation, Measurement and Verification (“EM&V”) report completed by Nexant on March 15, 2019. | |
| | Tierra Consulting is the source of the impacts for the heat pump, central air conditioner measures. | |
| | See Attachment B, line 14 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 45 - 54. | |
| (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. | |

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| (c)(3)(i)(d) (continued) | 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 customers. |
| (c)(3)(i)(e) | <p>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).</p> <p>No costs from this Program will be capitalized.</p> |
| (c)(3)(i)(f) | <p>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).</p> <p>Total portfolio evaluation costs are estimated to be 5 percent of total Program costs.</p> |
| (c)(3)(ii)(a) | <p>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.</p> <p>EM&V actions will provide an independent, third-party report of energy savings attributable to the Program including an impact analysis and process evaluation.</p> <p>The impact analysis will review deemed savings assumptions and verify equipment installations. For Heating Ventilation and Air Conditioning (HVAC) equipment, the evaluation methodology may consist of a metering study of a statistically valid sample of CAC and ASHP units that will use metering devices. The metering devices will track electrical current (amperage) over a period of several months to provide insight into when the HVAC units are in operation. The interval measurements of electrical current will be combined with voltage and power factor spot measurements to estimate the power draw over time. When combined with local weather data the metering study will define the relationship between HVAC consumption and ambient temperature.</p> <p>Demand savings may be calculated using a metered coincidence factor aligned with DEC-DEP's peak demand periods. If metering data is unavailable, coincident factors will be estimated using the EFLH regressions to approximate system operation given typical weather conditions during peak demand windows. Installation of devices for on-going data collection for a minimum of four weeks including direct amperage measurements for all HVAC compressors under field conditions.</p> <p>The baseline condition may be determined if the existing equipment is being replaced early and still operational or whether the equipment is being replaced upon failure. This data may be determined through participant surveys. If the existing equipment is being replaced early, the baseline will be the efficiency of the existing unit for the remaining effective useful life of the measure. Should the age of the early replacement equipment be greater than eighteen years, the prevailing federal efficiency standard will apply. If the existing equipment is replaced upon failure, the baseline will be the prevailing federal efficiency standard.</p> <p>In addition, the evaluator will select engineering-based estimation of energy and demand savings to determine EE impacts for other measures. A statistically representative sample of participants will be selected for the analysis.</p> <p>The process evaluation will include 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 process analysis.</p> <p>The tentative schedule for the evaluation associated with this application reflects a final report in the Third Quarter of 2024.</p> <p>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.</p> |

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| (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-7, Sub 1032 on October 20, 2020. |
| (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 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-7, Sub 1032 on October 20, 2020. |

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Attachment A Participation

| Smart \$aver® Residential | | |
|---------------------------|---|-------------|
| 1 | Measure Life (Average) | 18 |
| 2 | Free Rider % (Average) | 33.3% |
| 3 | Incremental Participants Year 1 | 12,841 |
| 4 | Incremental Participants Year 2 | 12,970 |
| 5 | Incremental Participants Year 3 | 12,970 |
| 6 | Incremental Participants Year 4 | 12,970 |
| 7 | Incremental Participants Year 5 | 12,970 |
| 8 | Cumulative Participation Year 1 | 12,841 |
| 9 | Cumulative Participation Year 2 | 25,811 |
| 10 | Cumulative Participation Year 3 | 38,781 |
| 11 | Cumulative Participation Year 4 | 51,751 |
| 12 | Cumulative Participation Year 5 | 64,721 |
| 13 | Cumulative Summer Coincident kW w/ losses (net free) Year 1 | 1,364 |
| 14 | Cumulative Summer Coincident kW w/ losses (net free) Year 2 | 2,741 |
| 15 | Cumulative Summer Coincident kW w/ losses (net free) Year 3 | 4,118 |
| 16 | Cumulative Summer Coincident kW w/ losses (net free) Year 4 | 5,495 |
| 17 | Cumulative Summer Coincident kW w/ losses (net free) Year 5 | 6,872 |
| 18 | Cumulative Winter Coincident kW w/ losses (net free) Year 1 | 935 |
| 19 | Cumulative Winter Coincident kW w/ losses (net free) Year 2 | 1,879 |
| 20 | Cumulative Winter Coincident kW w/ losses (net free) Year 3 | 2,824 |
| 21 | Cumulative Winter Coincident kW w/ losses (net free) Year 4 | 3,768 |
| 22 | Cumulative Winter Coincident kW w/ losses (net free) Year 5 | 4,712 |
| 23 | Cumulative kWh w/ losses (net free) Year 1 | 4,891,495 |
| 24 | Cumulative kWh w/ losses (net free) Year 2 | 9,832,334 |
| 25 | Cumulative kWh w/ losses (net free) Year 3 | 14,773,173 |
| 26 | Cumulative kWh w/ losses (net free) Year 4 | 19,714,013 |
| 27 | Cumulative kWh w/ losses (net free) Year 5 | 24,654,852 |
| 28 | Per Participant Weighted Average Coincident Saved Winter kW w/ losses | 0.1091 |
| 29 | Per Participant Weighted Average Coincident Saved Summer kW w/ losses | 0.1592 |
| 30 | Per Participant Average Annual kWh w/ losses (net free) Year 1 | 381 |
| 31 | Per Participant Average Annual kWh w/ losses (net free) Year 2 | 381 |
| 32 | Per Participant Average Annual kWh w/ losses (net free) Year 3 | 381 |
| 33 | Per Participant Average Annual kWh w/ losses (net free) Year 4 | 381 |
| 34 | Per Participant Average Annual kWh w/ losses (net free) Year 5 | 381 |
| 35 | Cumulative Lost Revenue (net free) Year 1 | \$472,161 |
| 36 | Cumulative Lost Revenue (net free) Year 2 | \$961,732 |
| 37 | Cumulative Lost Revenue (net free) Year 3 | \$1,472,149 |
| 38 | Cumulative Lost Revenue (net free) Year 4 | \$2,004,041 |
| 39 | Cumulative Lost Revenue (net free) Year 5 | \$2,558,864 |
| 40 | Average Lost Revenue per Participant (net free) Year 1 | \$36.77 |
| 41 | Average Lost Revenue per Participant (net free) Year 2 | \$37.26 |
| 42 | Average Lost Revenue per Participant (net free) Year 3 | \$37.96 |
| 43 | Average Lost Revenue per Participant (net free) Year 4 | \$38.72 |
| 44 | Average Lost Revenue per Participant (net free) Year 5 | \$39.54 |
| 45 | Total Avoided Costs/MW saved Year 1 | \$180,402 |
| 46 | Total Avoided Costs/MW saved Year 2 | \$181,730 |
| 47 | Total Avoided Costs/MW saved Year 3 | \$185,203 |
| 48 | Total Avoided Costs/MW saved Year 4 | \$189,993 |
| 49 | Total Avoided Costs/MW saved Year 5 | \$195,306 |
| 50 | Total Avoided Costs/MWh saved Year 1 | \$29 |
| 51 | Total Avoided Costs/MWh saved Year 2 | \$32 |
| 52 | Total Avoided Costs/MWh saved Year 3 | \$31 |
| 53 | Total Avoided Costs/MWh saved Year 4 | \$32 |
| 54 | Total Avoided Costs/MWh saved Year 5 | \$33 |

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Attachment B Cost-Effectiveness Evaluation

| Smart \$aver® Residential | | | | | |
|---|---------------------------------------|--------------|--------------|--------------|--------------|
| | | UCT | TRC | RIM | Participant |
| 1 | Avoided T&D Electric | \$11,718,732 | \$11,718,732 | \$11,718,732 | \$0 |
| 2 | Cost-Based Avoided Elec Production | \$10,754,178 | \$10,754,178 | \$10,754,178 | \$0 |
| 3 | Cost-Based Avoided Elec Capacity | \$4,221,792 | \$4,221,792 | \$4,221,792 | \$0 |
| 4 | Participant Elec Bill Savings (gross) | \$0 | \$0 | \$0 | \$41,546,741 |
| 5 | Net Lost Revenue Net Fuel | \$0 | \$0 | \$19,984,002 | \$0 |
| 6 | Administration Costs | \$294,414 | \$294,414 | \$294,414 | \$0 |
| 7 | Implementation Costs | \$828,632 | \$828,632 | \$828,632 | \$0 |
| 8 | Incentives | \$15,316,103 | \$0 | \$15,316,103 | \$15,316,103 |
| 9 | Other Utility Costs | \$4,625,479 | \$4,625,479 | \$4,625,479 | \$0 |
| 10 | Participant Costs (gross) | \$0 | \$0 | \$0 | \$38,666,368 |
| 11 | Participant Costs (net) | \$0 | \$25,790,467 | \$0 | \$0 |
| 12 | Total Benefits | \$26,694,701 | \$26,694,701 | \$26,694,701 | \$56,862,844 |
| 13 | Total Costs | \$21,064,627 | \$31,538,992 | \$41,048,629 | \$38,666,368 |
| 14 | Benefit/Cost Ratios | 1.27 | 0.85 | 0.65 | 1.47 |
| Data represents present value of costs and benefits over the life of the program. | | | | | |

Smart \$aver Residential

Attachment C Program Costs by Year

| Smart \$aver® Residential | | |
|---------------------------|---------------------------------|-------------|
| 1 | Incremental Participants Year 1 | 12,841 |
| 2 | Incremental Participants Year 2 | 12,970 |
| 3 | Incremental Participants Year 3 | 12,970 |
| 4 | Incremental Participants Year 4 | 12,970 |
| 5 | Incremental Participants Year 5 | 12,970 |
| 6 | Total Participant Costs Year 1 | \$8,688,365 |
| 7 | Total Participant Costs Year 2 | \$8,775,540 |
| 8 | Total Participant Costs Year 3 | \$8,775,540 |
| 9 | Total Participant Costs Year 4 | \$8,775,540 |
| 10 | Total Participant Costs Year 5 | \$8,775,540 |
| 11 | Administration Costs Year 1 | \$66,155 |
| 12 | Administration Costs Year 2 | \$66,819 |
| 13 | Administration Costs Year 3 | \$66,819 |
| 14 | Administration Costs Year 4 | \$66,819 |
| 15 | Administration Costs Year 5 | \$66,819 |
| 16 | Implementation Costs Year 1 | \$186,195 |
| 17 | Implementation Costs Year 2 | \$188,063 |
| 18 | Implementation Costs Year 3 | \$188,063 |
| 19 | Implementation Costs Year 4 | \$188,063 |
| 20 | Implementation Costs Year 5 | \$188,063 |
| 21 | Total Incentives Year 1 | \$3,441,500 |
| 22 | Total Incentives Year 2 | \$3,476,095 |
| 23 | Total Incentives Year 3 | \$3,476,095 |
| 24 | Total Incentives Year 4 | \$3,476,095 |
| 25 | Total Incentives Year 5 | \$3,476,095 |
| 26 | Other Utility Costs Year 1 | \$1,039,351 |
| 27 | Other Utility Costs Year 2 | \$1,049,782 |
| 28 | Other Utility Costs Year 3 | \$1,049,782 |
| 29 | Other Utility Costs Year 4 | \$1,049,782 |
| 30 | Other Utility Costs Year 5 | \$1,049,782 |
| 31 | Total Utility Costs Year 1 | \$4,733,200 |
| 32 | Total Utility Costs Year 2 | \$4,780,759 |
| 33 | Total Utility Costs Year 3 | \$4,780,759 |
| 34 | Total Utility Costs Year 4 | \$4,780,759 |
| 35 | Total Utility Costs Year 5 | \$4,780,759 |

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Attachment D Program Costs per Participant

| Smart \$aver® Residential | | |
|---------------------------|---|----------|
| 1 | Average Per Participant Administration Costs Year 1 | \$5.15 |
| 2 | Average Per Participant Administration Costs Year 2 | \$5.15 |
| 3 | Average Per Participant Administration Costs Year 3 | \$5.15 |
| 4 | Average Per Participant Administration Costs Year 4 | \$5.15 |
| 5 | Average Per Participant Administration Costs Year 5 | \$5.15 |
| 6 | Average Per Participant Implementation Costs Year 1 | \$14.50 |
| 7 | Average Per Participant Implementation Costs Year 2 | \$14.50 |
| 8 | Average Per Participant Implementation Costs Year 3 | \$14.50 |
| 9 | Average Per Participant Implementation Costs Year 4 | \$14.50 |
| 10 | Average Per Participant Implementation Costs Year 5 | \$14.50 |
| 11 | Average Per Participant Incentives Year 1 | \$268.01 |
| 12 | Average Per Participant Incentives Year 2 | \$268.01 |
| 13 | Average Per Participant Incentives Year 3 | \$268.01 |
| 14 | Average Per Participant Incentives Year 4 | \$268.01 |
| 15 | Average Per Participant Incentives Year 5 | \$268.01 |
| 16 | Average Per Participant Other Utility Costs Year 1 | \$80.94 |
| 17 | Average Per Participant Other Utility Costs Year 2 | \$80.94 |
| 18 | Average Per Participant Other Utility Costs Year 3 | \$80.94 |
| 19 | Average Per Participant Other Utility Costs Year 4 | \$80.94 |
| 20 | Average Per Participant Other Utility Costs Year 5 | \$80.94 |
| 21 | Average Per Participant Total Utility Costs Year 1 | \$368.60 |
| 22 | Average Per Participant Total Utility Costs Year 2 | \$368.60 |
| 23 | Average Per Participant Total Utility Costs Year 3 | \$368.60 |
| 24 | Average Per Participant Total Utility Costs Year 4 | \$368.60 |
| 25 | Average Per Participant Total Utility Costs Year 5 | \$368.60 |

Smart \$aver Residential

Attachment E Program Costs per kW

| Smart \$aver® Residential | | |
|---------------------------|--|---------|
| 1 | Cumulative Winter Coincident kW w/ losses (net free) Year 1 | 935 |
| 2 | Cumulative Winter Coincident kW w/ losses (net free) Year 2 | 1,879 |
| 3 | Cumulative Winter Coincident kW w/ losses (net free) Year 3 | 2,824 |
| 4 | Cumulative Winter Coincident kW w/ losses (net free) Year 4 | 3,768 |
| 5 | Cumulative Winter Coincident kW w/ losses (net free) Year 5 | 4,712 |
| 6 | Cumulative Summer Coincident kW w/ losses (net free) Year 1 | 1,364 |
| 7 | Cumulative Summer Coincident kW w/ losses (net free) Year 2 | 2,741 |
| 8 | Cumulative Summer Coincident kW w/ losses (net free) Year 3 | 4,118 |
| 9 | Cumulative Summer Coincident kW w/ losses (net free) Year 4 | 5,495 |
| 10 | Cumulative Summer Coincident kW w/ losses (net free) Year 5 | 6,872 |
| 11 | Administration Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$49 |
| 12 | Administration Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$24 |
| 13 | Administration Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$16 |
| 14 | Administration Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | \$12 |
| 15 | Administration Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | \$10 |
| 16 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$137 |
| 17 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$69 |
| 18 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$46 |
| 19 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | \$34 |
| 20 | Implementation Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | \$27 |
| 21 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$2,524 |
| 22 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$1,268 |
| 23 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$844 |
| 24 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | \$633 |
| 25 | Incentives / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | \$506 |
| 26 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$762 |
| 27 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$383 |
| 28 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$255 |
| 29 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | \$191 |
| 30 | Other Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | \$153 |
| 31 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 1 | \$3,471 |
| 32 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 2 | \$1,744 |
| 33 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 3 | \$1,161 |
| 34 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 4 | \$870 |
| 35 | Total Utility Costs / Cumulative Summer Coincident kW w/ losses (net free) Year 5 | \$696 |
| 36 | Administration Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 1 | \$71 |
| 37 | Administration Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 2 | \$36 |
| 38 | Administration Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 3 | \$24 |
| 39 | Administration Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 4 | \$18 |
| 40 | Administration Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 5 | \$14 |
| 41 | Implementation Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 1 | \$199 |
| 42 | Implementation Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 2 | \$100 |
| 43 | Implementation Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 3 | \$67 |
| 44 | Implementation Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 4 | \$50 |
| 45 | Implementation Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 5 | \$40 |
| 46 | Incentives / Cumulative Winter Coincident kW w/ losses (net free) Year 1 | \$3,681 |
| 47 | Incentives / Cumulative Winter Coincident kW w/ losses (net free) Year 2 | \$1,850 |
| 48 | Incentives / Cumulative Winter Coincident kW w/ losses (net free) Year 3 | \$1,231 |
| 49 | Incentives / Cumulative Winter Coincident kW w/ losses (net free) Year 4 | \$923 |
| 50 | Incentives / Cumulative Winter Coincident kW w/ losses (net free) Year 5 | \$738 |
| 51 | Other Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 1 | \$1,112 |
| 52 | Other Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 2 | \$559 |
| 53 | Other Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 3 | \$372 |
| 54 | Other Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 4 | \$279 |
| 55 | Other Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 5 | \$223 |
| 56 | Total Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 1 | \$5,063 |
| 57 | Total Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 2 | \$2,544 |
| 58 | Total Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 3 | \$1,693 |
| 59 | Total Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 4 | \$1,269 |
| 60 | Total Utility Costs / Cumulative Winter Coincident kW w/ losses (net free) Year 5 | \$1,015 |

Smart \$aver Residential

Attachment F Program Costs per kWh

| Smart \$aver® Residential | | |
|---------------------------|---|------------|
| 1 | Cumulative kWh w/ losses (net free) Year 1 | 4,891,495 |
| 2 | Cumulative kWh w/ losses (net free) Year 2 | 9,832,334 |
| 3 | Cumulative kWh w/ losses (net free) Year 3 | 14,773,173 |
| 4 | Cumulative kWh w/ losses (net free) Year 4 | 19,714,013 |
| 5 | Cumulative kWh w/ losses (net free) Year 5 | 24,654,852 |
| 6 | Administration Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.014 |
| 7 | Administration Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.007 |
| 8 | Administration Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.005 |
| 9 | Administration Costs / Cumulative kWh w/ losses (net free) Year 4 | \$0.003 |
| 10 | Administration Costs / Cumulative kWh w/ losses (net free) Year 5 | \$0.003 |
| 11 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.038 |
| 12 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.019 |
| 13 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.013 |
| 14 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 4 | \$0.0095 |
| 15 | Implementation Costs / Cumulative kWh w/ losses (net free) Year 5 | \$0.0076 |
| 16 | Incentives / Cumulative kWh w/ losses (net free) Year 1 | \$0.704 |
| 17 | Incentives / Cumulative kWh w/ losses (net free) Year 2 | \$0.354 |
| 18 | Incentives / Cumulative kWh w/ losses (net free) Year 3 | \$0.235 |
| 19 | Incentives / Cumulative kWh w/ losses (net free) Year 4 | \$0.176 |
| 20 | Incentives / Cumulative kWh w/ losses (net free) Year 5 | \$0.141 |
| 21 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.212 |
| 22 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.107 |
| 23 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.071 |
| 24 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 4 | \$0.053 |
| 25 | Other Utility Costs / Cumulative kWh w/ losses (net free) Year 5 | \$0.043 |
| 26 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 1 | \$0.968 |
| 27 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 2 | \$0.486 |
| 28 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 3 | \$0.324 |
| 29 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 4 | \$0.243 |
| 30 | Total Utility Costs / Cumulative kWh w/ losses (net free) Year 5 | \$0.194 |

Smart \$aver Residential

Attachment G Tariff

See attached.

OFFICIAL COPY

Sep 11 2023

RESIDENTIAL - SMART \$AVER® ENERGY EFFICIENCY PROGRAM

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 multi-family, 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, service, and controls, including 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 structures as required to ensure achievement of energy savings.
- 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 the incentive be provided to a third-party.

RESIDENTIAL - SMART \$AVER® ENERGY EFFICIENCY PROGRAM

- To qualify for payment under this program, qualifying improvements must be made on or after January 1, 2023 and the application for payment must be made as noted on the Company's website.
- 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 card options. Incentive payments shall be determined by the Company in 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.

RESIDENTIAL - SMART \$AVER® ENERGY EFFICIENCY PROGRAM

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 multi-family, single family detached, duplexes, townhomes, condominiums, and mobile homes who are served on a residential service schedule.
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 - 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.
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- 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 the incentive be provided to a third-party.

North Carolina First Revised Leaf No. 168

Effective for service on and after January-October 71, 2019

NCUC Docket No. E-7, Sub 1032

Order dated January 7, 2019

RESIDENTIAL - SMART \$AVER® ENERGY EFFICIENCY PROGRAM

- To qualify for payment under this program, qualifying improvements must be made on or after January 1, 20~~23~~¹⁹ and the application for payment must be made as noted on the Company's website.
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PAYMENT

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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.