



# EVALUATION, MEASUREMENT, AND VERIFICATION REPORT

Developed for: Virginia Electric and Power Company  
(Dominion Energy Virginia/Dominion Energy North Carolina)

Case No. PUR-2022-00210 (Virginia)  
Docket No. E-22, Sub 676 (North Carolina)

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Volume 1 of 8

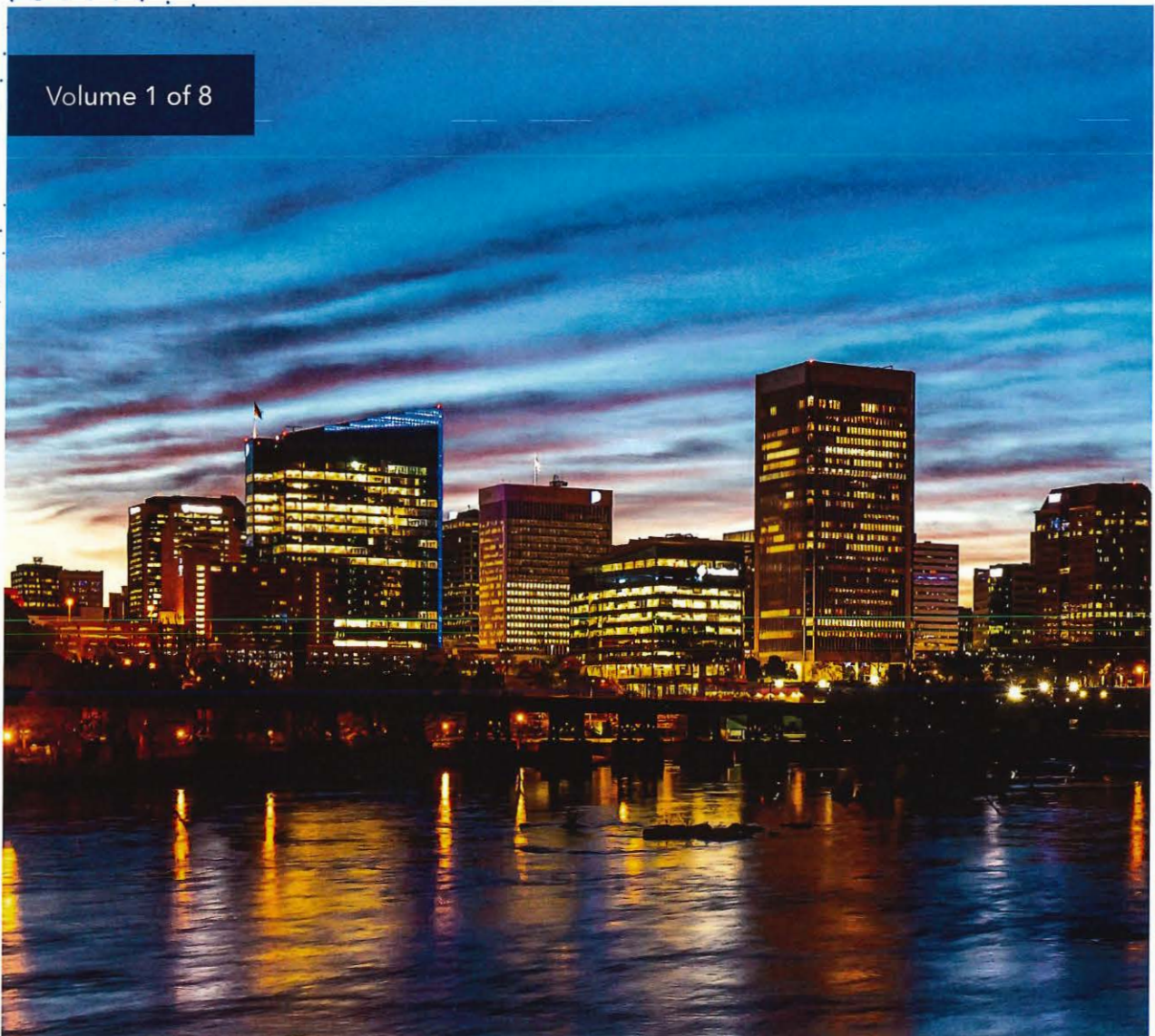




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# Data reflective of 2024 EM&V report and actuals for 2023

as of 5/30/2024

**Table 1**

| Net at Meter | YEAR      | VCEA Target MWh | VCEA Target % | DSM1-8 MWh | DSM9 MWh | DSM10 MWh | DSM11 MWh | DSM12 MWh | Opt-Outs MWh | Total DSM MWh | DSM %** |
|--------------|-----------|-----------------|---------------|------------|----------|-----------|-----------|-----------|--------------|---------------|---------|
|              | 2022      | 852,892         | 1.25%         | 775,939    | 2,693    | -         | -         | -         | 58,754       | 837,387       | 1.23%   |
| 2023         | 1,705,783 | 2.50%           | 868,216       | 37,427     | 3,875    | -         | -         | 59,855    | 969,372      | 1.4%          |         |
| 2024         | 2,558,675 | 3.75%           | 922,063       | 89,506     | 88,153   | 37,213    | -         | 60,955    | 1,197,890    | 1.8%          |         |
| 2025         | 3,411,567 | 5.00%           | 932,662       | 158,852    | 261,694  | 89,617    | 19,748    | 62,055    | 1,524,628    | 2.2%          |         |

**Table 2**

| Gross at Meter | YEAR      | VCEA Target MWh | VCEA Target % | DSM1-8 MWh | DSM9 MWh | DSM10 MWh | DSM11 MWh | DSM12 MWh | Opt-Outs MWh | Total DSM Forecast MWh | DSM %** |
|----------------|-----------|-----------------|---------------|------------|----------|-----------|-----------|-----------|--------------|------------------------|---------|
|                | 2022      | 852,892         | 1.25%         | 1,206,813  | 3,275    | -         | -         | -         | 58,754       | 1,268,843              | 1.9%    |
| 2023           | 1,705,783 | 2.50%           | 1,356,226     | 43,153     | 4,306    | -         | -         | 59,855    | 1,463,538    | 2.1%                   |         |
| 2024           | 2,558,675 | 3.75%           | 1,401,765     | 105,510    | 96,551   | 40,050    | -         | 60,955    | 1,704,831    | 2.5%                   |         |
| 2025           | 3,411,567 | 5.00%           | 1,403,332     | 187,643    | 282,244  | 98,125    | 23,943    | 62,055    | 2,057,341    | 3.0%                   |         |

All values exclude NC and non-Jurisdictional DSM reductions

# DEV DSM Dashboard



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## 2023 at a Glance

### Total Programs

|                         |    |
|-------------------------|----|
| Residential:            | 22 |
| Business:               | 21 |
| Residential / Business: | 1  |

*\*Note - Phase XI Programs Launch '24*

### Total Participants

|                          |         |
|--------------------------|---------|
| Residential:             | 357,260 |
| EE Products - Appliances | 19,118  |
| Business:                | 2,218   |

### kWh Saved - Portfolio

|        |             |
|--------|-------------|
| Net:   | 135,984,938 |
| Gross: | 197,221,252 |

*\* Annualized Savings*

### kW Saved - Portfolio

|        |         |
|--------|---------|
| Net:   | 276,505 |
| Gross: | 350,027 |

### Progress Towards \$870M GTSA Goal

\$797.0 M Proposed

### Progress Towards VCEA Savings Targets

As a percentage of 2019 sales

|                                  |            |       |
|----------------------------------|------------|-------|
| 2023 Net MWh                     | 969,373    | 1.42% |
| 2023 Gross MWh                   | 1,463,539  | 2.14% |
| 2019 VA Jurisdictional Sales MWh | 68,231,332 |       |

*\* Includes 59,855 MWh for Opt Out Customers*

### Annual Spend Portfolio

\$85.0 M

### Annual Spend IAQ Programs

\$24.0 M

*\* Includes \$14.3M for HB2789 HVAC / Solar*

### Total Customer Bill Savings

|              |              |
|--------------|--------------|
| Residential: | \$8,182,671  |
| Business:    | \$10,149,822 |

### DSM Related Emission Reductions (Metric Tons CO<sub>2</sub>)

Total 523,559

### Energy Saved Since Inception Portfolio

|            |           |
|------------|-----------|
| Net MWh:   | 6,503,739 |
| Gross MWh: | 9,573,390 |

# Executive summary

This EM&V report, prepared by DNV Energy Insights USA (DNV) on behalf of Virginia Electric and Power Company (Dominion Energy or the Company),<sup>1</sup> presents the key performance indicators of the Company's Phases II-XI demand-side management (DSM) programs in Virginia and North Carolina. It also reports DSM program impacts for 37 active energy efficiency and demand response programs through December 31, 2023.

The 2023 EM&V report complies with multiple Virginia and North Carolina regulatory orders, rules, and other legislative requirements for evaluation, measurement, and verification (EM&V) reporting. Further details on these requirements appear in the Introduction section of the report.<sup>2</sup>



Gross energy savings toward Virginia Clean Economy Act (VCEA): **1,404 GWh**



Net energy savings toward VCEA: **910 GWh<sup>3</sup>**



Spending toward Grid Transformation and Security Act (GTSA) **\$276M<sup>4</sup>**



Projected spending toward GTSA: **\$797M<sup>5</sup>**



Spending toward VCEA income and age qualifying 15% target: **\$25M or 9% of the \$276M<sup>6</sup>**

<sup>1</sup> Virginia Electric and Power Company may also include North Carolina operations depending on the context.

<sup>2</sup> Virginia State Corporation Commission (SCC) Case No. PUE-2009-0008, March 24, 2010, ordered annual EM&V report filings in Virginia.

<sup>3</sup> As of year end 2023.

<sup>4</sup> As of year end 2023; includes O&M, capital spending, common costs, and margin.

<sup>5</sup> Based on programs filed with or approved by SCC as of year end 2022; includes O&M, capital spending, common costs, and margin.

<sup>6</sup> As of year end 2023; includes O&M, capital spending, common costs, and margin. Per legislation, the 15% target does not include the House Bill 2789 3-year program approved by the SCC.

In 2023, Dominion Energy ran more than 37 energy efficiency and demand response programs serving the residential, income and age qualifying, and non-residential sectors.

In 2023, these programs achieved:

**\$18M/year**  
in bill savings  
for customers

**\$4M/year**  
in O&M NEI benefits  
for customers

**524k**  
metric tons CO<sub>2</sub>  
avoided/year

**92M gal/year**  
of water savings

**7,043 GWh**  
of lifetime savings

DNV completed impact evaluations and in-depth studies of the following demand response programs for program year 2023:

- Residential Thermostat Rewards Demand Response (DR) Program
- Non-Residential Distributed Generation (DR) Program
- Residential Electric Vehicle Charger Rewards (DR) Program





# Key metrics

This report presents performance indicators for Dominion Energy's DSM programs in Virginia and North Carolina in compliance with legal requirements in both states.

The key metrics summarized are:



## Expenditures

Program expenditures include operations and maintenance (O&M), capital spending, and common costs. O&M spending includes direct rebates, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported here do not include the Company's margins.



## Participation

Participation is generally measured as the number of unique accounts that participate in a program. There are a few exceptions to this. Programs that offer rebates for individual equipment (e.g., Residential Appliance Recycling, Residential Efficient Products Marketplace, Residential EV Energy Efficiency and Demand Reduction, Residential Water Savings) often count participation by units of installed measures. Other programs, such as Non-Residential Midstream Energy Efficiency Products, count participation by the number of work orders submitted to Dominion Energy for a rebate.



## Savings

Energy efficiency program savings are reported as annualized energy savings, in kilowatt hours per year (kWh/year), energy saved to date (kWh or MWh), and expected lifetime energy saved (kWh or MWh). We also report coincident peak demand reductions in kilowatts (kW) delivered by the program. We assume that the Company's planning summer peak is the maximum of the non-holiday weekday July hour ending 16 ET. We assume that its planning winter peak is the maximum of the non-holiday weekday January hour ending 8 ET. We report demand reductions for the demand response programs in kW and represent the estimated amount of dispatchable peak shaving potential delivered by the program under the Company's planning conditions.



## VCEA indicators

This metric encompasses emissions reductions, customer bill impacts, and O&M non-energy impacts attributable to the DSM programs.

# Active programs

This report covers programs that were open to enrollment or had participation in 2023. Figure 1 lists these active programs.



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Figure 1. Active Phases II-X demand-side management programs reported in 2023

## Residential Energy Efficiency

- Appliance Recycling
- Efficient Products Marketplace
- Home Energy Assessment
- Customer Engagement
- EV Energy Efficiency and Demand Response
- Home Retrofit
- Kits
- Manufactured Housing
- Multifamily
- New Construction
- Thermostat Purchase and WeatherSmart
- Smart Home
- Virtual Energy Audit
- Water Savings

## Non-Residential Energy Efficiency

- Heating and Cooling Efficiency
- Lighting Systems & Controls (Phases VII and X)
- Office
- Manufacturing
- Window Film
- Midstream Energy Efficiency Products
- Multifamily
- New Construction
- Small Business Improvement Enhanced
- Agricultural Energy Efficiency
- Building Automation System
- Building Optimization
- Engagement
- Prescriptive Enhanced

## Income & Age Qualifying Energy Efficiency

- Residential HVAC Health and Safety (Phase VIII)
- Solar
- Residential Energy Efficiency (Phase IX)
- Home Improvement Enhanced (Phase X)

## Residential Demand Response

- Smart Thermostat Rewards
- EV Charger Rewards
- Water Savings Demand Response

## Non-Residential Demand Response

- Distributed Generation

Tables 1-9 summarize the key required metrics for the Company's energy efficiency programs. The active programs are organized into three categories: residential, income and age qualifying, and non-residential. Within each category, the programs are further organized by the DSM phase under which they were originally filed.

The participation, energy savings, and non-energy impact values presented in Tables 2, 3, and 6-9 are produced by DNV. They are a mix of evaluated savings, deemed savings we calculated using customer rebate data collected by Dominion Energy and program implementers, and other customer-specific data applied to the energy savings protocols maintained by DNV in the Dominion Energy Technical Reference Manual (Appendix F). They also contain savings claimed by implementation vendors



using deemed approaches vetted by DNV. The deemed savings underwent a series of data quality checks prior to reporting.

The avoided cost assumptions (Table 1), financial data (Tables 2 and 3), and the benefit-cost (B/C) ratios (Tables 4-6) are produced by Dominion Energy and reported here for completeness. The B/C ratios incorporate the results from this 2023 report.

**Table 1. Virginia program avoided costs in Program Year 2023**

| Avoided Costs    |                       |  | Avoided T&D Demand Costs               |                                       |                                       |  |                                       |                                       |
|------------------|-----------------------|--|--|---------------------------------------|---------------------------------------|--|---------------------------------------|---------------------------------------|
| Average (\$/kWh) | Capacity (\$/kW-year) | Reserve Margin Forecast Pool Requirement (FPR) (%) | Transmission                           |                                       |                                       | Distribution                           |                                       |                                       |
|                  |                       |  | Avoided Transmission Cost (\$/kW-year) | Avoided Transmission Summer Split (%) | Avoided Transmission Winter Split (%) | Avoided Distribution Cost (\$/kW-year) | Avoided Transmission Summer Split (%) | Avoided Transmission Winter Split (%) |
| \$0.05           | \$14.87               | 10%  | \$33.12                                | 0%                                    | 100%                                  | \$18.80                                | 50%                                   | 50%                                   |



Tables 2 and 3 show the years that programs have been in operation, the count of participants, the number of measures installed, and the programs' financial metrics through program year 2023. The programs are organized by sector. Within each sector, they are further organized starting with those in the oldest phases at the top and alphabetically.

The residential programs cumulatively reached more customers and installed more measures than the income and age qualifying and non-residential programs. While the non-residential programs had the lowest number of customers, their spending per participant is considerably greater than the other sectors. This is reasonable given that non-residential customers tend to be much larger and have larger measures and projects than residential customers.

**Table 2. Virginia summary program metrics - participation and financials of residential and income and age qualified programs (cumulative through December 31, 2023)<sup>7, 8, 9</sup>**

| DSM phase  | Program                                   | Program operation years | Participation            |                          | Financial          |                                   |              |                         |                              |
|--|---|-------------------------|--------------------------|--------------------------|--------------------|-----------------------------------|--------------|-------------------------|------------------------------|
|  |   |                         | Participants (in 1,000s) | No. measures (in 1,000s) | Expenditures (\$M) | Administrative expenditures (\$M) | Budget (\$M) | Spending as % of budget | Program cost per participant |
| VII  | Appliance Recycling                       | 5                       | 6.56                     | 6.56                     | \$2.37             | \$0.12                            | \$8.32       | 28%                     | \$361                        |
|  | Efficient Products Marketplace            | 5                       | 14,829                   | 14,829                   | \$35               | \$1.67                            | \$41         | 86%                     | \$2.38                       |
|  | Home Energy Assessment                    | 5                       | 23                       | 1,225                    | \$20               | \$0.97                            | \$21         | 92%                     | \$842                        |
| VIII   | Customer Engagement                       | 4                       | 256                      | 256                      | \$5.08             | \$0.25                            | \$5.64       | 90%                     | \$20                         |
|  | EV Energy Efficiency and Demand Response  | 4                       | 0.64                     | 0.64                     | \$0.66             | \$0.03                            | \$1.19       | 55%                     | \$1,031                      |
|  | Home Retrofit                             | 4                       | 0.19                     | 0.64                     | \$2.68             | \$0.14                            | \$5.32       | 50%                     | \$13,883                     |
|  | Kits                                      | 4                       | 86                       | 156                      | \$3.95             | \$0.21                            | \$5.78       | 68%                     | \$46                         |
|  | Manufactured Housing                      | 4                       | 0.56                     | 0.84                     | \$2.02             | \$0.11                            | \$4.69       | 43%                     | \$3,605                      |
|  | Multifamily                               | 4                       | 2.92                     | 13                       | \$2.20             | \$0.12                            | \$6.19       | 36%                     | \$755                        |
|  | New Construction                          | 4                       | 6.50                     | 6.50                     | \$7.06             | \$0.38                            | \$14         | 52%                     | \$1,085                      |
|  | Thermostat Purchase and WeatherSmart      | 4                       | 19                       | 18                       | \$5.82             | \$0.14                            | \$3.60       | 81%                     | \$301                        |
|  | Smart Home                                | 3                       | 0.06                     | 0.29                     | \$1.32             | \$0.07                            | \$4.38       | 30%                     | \$21,224                     |
|  | IX  | Virtual Energy Audit    | 3                        | 10                       | 368                | \$2.17                            | \$0.13       | \$7.54                  | 29%                          |
| Water Savings                                    |   | 3                       | 0.43                     | 0.43                     | \$0.61             | \$0.03                            | \$1.88       | 33%                     | \$1,429                      |
| <b>Residential programs, total</b>               |   |                         | <b>15,242</b>            | <b>16,881</b>            | <b>\$91</b>        | <b>\$4.37</b>                     | <b>\$130</b> | <b>70%</b>              | <b>\$5.95</b>                |
| VIII   | Residential IAQ HVAC Health and Safety    | 4                       | 11                       | 18                       | \$31               | \$1.59                            | \$33         | 95%                     | \$2,900                      |
| IX   | IAQ Solar                                 | 3                       | 0.14                     | 0.14                     | \$4.84             | \$0.32                            | \$21         | 23%                     | \$35,330                     |
|  | Residential IAQ Energy Efficiency         | 3                       | 9.88                     | 55                       | \$14               | \$0.79                            | \$15         | 95%                     | \$1,413                      |
| X  | Residential IAQ Home Improvement Enhanced | 1                       | 0.003                    | 0.004                    | \$0.57             | \$0.04                            | \$1.29       | 44%                     | \$188,703                    |
| <b>Income and Age Qualifying programs, total</b> |   |                         | <b>21</b>                | <b>73</b>                | <b>\$50</b>        | <b>\$2.74</b>                     | <b>\$69</b>  | <b>73%</b>              | <b>\$2,432</b>               |

<sup>7</sup> Participants represent enrollees from program start through December 31, 2023, in thousands of participants. Participation in the Residential Appliance Recycling Program is measured by units recycled. Participation in the Residential Efficient Products Marketplace Program is measured by incentivized unit, i.e., lamp, fixture, or appliance. Participation in the EV Energy Efficiency and Demand Response Program is measured in units of EV chargers. Participation in the Thermostat Purchase and WeatherSmart program is measured by thermostats purchased and households with controlled thermostats, respectively.

<sup>8</sup> The number of measures represents the quantity of measures installed, serviced, or implemented at the units for which incentives are issued from program start through December 31, 2023 in thousands.

<sup>9</sup> Expenditures are from program start through December 31, 2023 and include O&M, capital spending, and common costs. O&M spending components include direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported here do not include the Company's margins.

**Table 3. Virginia summary program metrics - participation and financials of non-residential programs (cumulative through December 31, 2023)<sup>10</sup>**

| DSM phase                       | Program                              | Program operation years | Participation            |                          | Financial          |                                   |              |                         |                              |
|---------------------------------|--------------------------------------|-------------------------|--------------------------|--------------------------|--------------------|-----------------------------------|--------------|-------------------------|------------------------------|
|                                 |                                      |                         | Participants (in 1,000s) | No. measures (in 1,000s) | Expenditures (\$M) | Administrative expenditures (\$M) | Budget (\$M) | Spending as % of budget | Program cost per participant |
| VII                             | Heating and Cooling Efficiency       | 5                       | 0.15                     | 2.36                     | \$5.81             | \$0.33                            | \$8.72       | 67%                     | \$38,493                     |
|                                 | Lighting Systems & Controls          | 5                       | 1.06                     | 155                      | \$12               | \$0.60                            | \$9.00       | 136%                    | \$11,631                     |
| X                               | Lighting Systems & Controls          | 1                       | 0.26                     | 37                       | \$3.32             | \$0.22                            | \$9.72       | 34%                     | \$12,804                     |
| VII                             | Office                               | 5                       | 0.17                     | 1.71                     | \$3.23             | \$0.17                            | \$5.48       | 59%                     | \$19,363                     |
|                                 | Manufacturing                        | 5                       | 0.06                     | 0.39                     | \$2.84             | \$0.15                            | \$5.85       | 49%                     | \$45,864                     |
| VIII                            | Window Film                          | 5                       | 0.09                     | 126                      | \$1.40             | \$0.07                            | \$2.07       | 68%                     | \$15,588                     |
|                                 | Midstream Energy Efficiency Products | 4                       | 0.20                     | 2.23                     | \$2.10             | \$0.11                            | \$5.67       | 37%                     | \$10,331                     |
| VIII                            | Multifamily                          | 4                       | 0.03                     | 2.39                     | \$0.71             | \$0.04                            | \$1.39       | 51%                     | \$21,018                     |
|                                 | New Construction                     | 4                       | 0.01                     | 0.03                     | \$3.35             | \$0.20                            | \$5.15       | 65%                     | \$418,837                    |
| IX                              | Small Business Improvement Enhanced  | 4                       | 1.85                     | 30                       | \$11               | \$0.59                            | \$11         | 99%                     | \$5,879                      |
|                                 | Agricultural Energy Efficiency       | 3                       | 0.01                     | 19                       | \$1.38             | \$0.08                            | \$1.77       | 78%                     | \$125,183                    |
| IX                              | Building Automation System           | 3                       | 0                        | 0                        | \$0.79             | \$0.04                            | \$1.84       | 43%                     | N/A                          |
|                                 | Building Optimization                | 3                       | 0.05                     | 1.15                     | \$1.76             | \$0.11                            | \$2.12       | 83%                     | \$39,185                     |
| IX                              | Engagement                           | 3                       | 0                        | 0                        | \$1.16             | \$0.06                            | \$2.99       | 39%                     | N/A                          |
|                                 | Prescriptive Enhanced                | 3                       | 0.96                     | 44                       | \$16               | \$0.92                            | \$8.25       | 192%                    | \$16,450                     |
| Non-Residential programs, total |                                      |                         | 4.89                     | 421                      | \$67               | \$3.70                            | \$81         | 83%                     | \$13,654                     |
| All programs, total             |                                      |                         | 15,268                   | 17,375                   | \$208              | \$11                              | \$281        | 74%                     | \$14                         |

<sup>10</sup> Participants represent enrollees from program start through December 31, 2023, in thousands of participants. Participation in the Midstream Energy Efficiency Products program is measured by the number of invoices submitted to the Company for rebate.



Tables 4 and 5 show the forward-looking B/C ratios for the active programs. Dominion Energy calculated these ratios using savings and participation data through 2023 from DNV.

**Table 4. Virginia summary program metrics - B/C ratios of residential and income and age qualified programs (cumulative through December 31, 2023)<sup>11</sup>**

| DSM phase  | Program                                   | Benefit cost ratios  |         |       |      | Filing year |
|--|---|----------------------|---------|-------|------|-------------|
|  |   | Participant          | Utility | TRC   | RIM  |             |
| <b>Residential (energy efficiency)</b>               |   |                      |         |       |      |             |
| VII  | Appliance Recycling                       | 19.22                | 0.98    | 0.90  | 0.22 | 2023        |
|  | Efficient Products Marketplace            | ++                   | 15.83   | 18.74 | 0.27 | 2023        |
|  | Home Energy Assessment                    | 25.06                | 8.46    | 5.94  | 0.35 | 2023        |
| VIII   | Customer Engagement                       | 12.87                | 1.80    | 1.41  | 0.40 | 2023        |
|  | EV Energy Efficiency and Demand Response  | 0.57                 | 0.15    | 0.08  | 0.10 | 2024        |
|  | Home Retrofit                             | 7.05                 | 2.48    | 1.92  | 0.44 | 2023        |
|  | Kits                                      | ++                   | 0.74    | 3.34  | 0.20 | 2024        |
|  | Manufactured Housing                      | 1.08                 | 0.11    | 0.10  | 0.09 | 2024        |
|  | Multifamily                               | 1.17                 | 0.65    | 0.34  | 0.29 | 2024        |
|  | New Construction                          | 5.62                 | 4.42    | 2.61  | 0.46 | 2024        |
|  | Thermostat Purchase and WeatherSmart      | 6.00                 | 2.28    | 1.59  | 0.39 | 2024        |
|  | Smart Home                                | 1.30                 | 0.41    | 0.25  | 0.18 | 2024        |
|  | IX  | Virtual Energy Audit | 38.26   | 4.11  | 7.97 | 0.26        |
| Water Savings  |   | 4.13                 | 1.35    | 1.16  | 0.30 | 2024        |
| <b>Residential (demand response)</b>                 |   |                      |         |       |      |             |
| VIII   | Smart Thermostat Rewards                  | 9.37                 | 0.67    | 2.61  | 0.46 | 2024        |
|  | EV Rewards                                | 22.64                | 0.23    | 0.33  | 0.22 | 2024        |
| IX   | Water Savings Demand Response             | 4.99                 | 1.79    | 1.60  | 0.33 | 2020        |
| <b>Income and Age Qualifying (energy efficiency)</b> |   |                      |         |       |      |             |
| VIII   | IAQ HVAC Health and Safety                | 2.34                 | 0.29    | 0.37  | 0.18 | 2023        |
| IX   | IAQ Solar                                 | ++                   | 0.38    | 0.38  | 0.22 | 2024        |
|  | Residential IAQ Energy Efficiency         | ++                   | 0.73    | 0.73  | 0.27 | 2023        |
| X  | Residential IAQ Home Improvement Enhanced | 55.72                | 0.03    | 0.03  | 0.03 | 2021        |

<sup>11</sup> B/C ratios are forward-looking and incorporate 2023 EM&V results. Programs that closed to enrollment in 2023 include Appliance Recycling, Efficient Products Marketplace, Home Energy Assessment, and Customer Engagement; their B/C ratios were not updated. Additionally, the Water Savings Demand Response program had no participants through year-end 2023 and does not have an updated B/C ratio. Appendices J and K provide a complete list of each program's B/C ratios since the initial program filing.



Table 5. Virginia summary program metrics - B/C ratios of non-residential programs (cumulative through December 31, 2023)<sup>12</sup>

| DSM phase                                  | Program                              | Benefit cost ratios |         |       |      | Filing year |
|--|--------------------------------------|---------------------|---------|-------|------|-------------|
|  |                                      | Participant         | Utility | TRC   | RIM  |             |
| <b>Non-Residential (energy efficiency)</b> |                                      |                     |         |       |      |             |
| VII  | Heating and Cooling Efficiency       | 18.92               | 39.23   | 18.27 | 1.14 | 2023        |
|  | Lighting Systems & Controls          | 29.77               | 11.09   | 9.12  | 0.56 | 2022        |
| X  | Lighting Systems & Controls          | 9.90                | 14.55   | 6.42  | 0.66 | 2024        |
|  | Office                               | 10.55               | 1.46    | 1.56  | 0.30 | 2023        |
| VII  | Manufacturing                        | 20.59               | 6.16    | 5.76  | 0.48 | 2023        |
|  | Window Film                          | 2.97                | 0.80    | 0.59  | 0.32 | 2023        |
| VIII                                       | Midstream Energy Efficiency Products | 2.23                | 4.54    | 1.97  | 0.90 | 2024        |
|  | Multifamily                          | 4.48                | 2.12    | 1.69  | 0.48 | 2024        |
|  | New Construction                     | 10.7                | 4.8     | 4.7   | 0.6  | 2024        |
|  | Small Business Improvement Enhanced  | 3.28                | 1.44    | 1.16  | 0.42 | 2024        |
| IX   | Agricultural Energy Efficiency       | 7.68                | 3.05    | 2.40  | 0.61 | 2024        |
|  | Building Automation System           | 7.91                | 5.83    | 4.92  | 1.27 | 2020        |
|  | Building Optimization                | 9.82                | 4.76    | 4.31  | 0.76 | 2024        |
|  | Engagement                           | ++                  | 1.90    | 3.07  | 0.85 | 2020        |
|  | Prescriptive Enhanced                | 4.88                | 2.21    | 2.21  | 0.62 | 2023        |
| <b>Non-Residential (demand response)</b>   |                                      |                     |         |       |      |             |
| II   | Distributed Generation               | ++                  | 0.58    | 1.64  | 0.55 | 2024        |

<sup>12</sup> B/C ratios are forward-looking and incorporate the results from this EM&V report. B/C ratios for the Non-Residential Building Automation and Non-Residential Engagement programs were not updated because there was no enrollment through 2023. Appendices J and K provide a complete list of each program's B/C ratios since the initial program filing.



Tables 6 and 7 show program gross and net savings in annualized energy savings, cumulative savings to date, lifetime savings based on participation through year-end 2023, and summer peak demand reductions. The residential sector represented the majority of energy savings through 2023, particularly cumulative energy savings. This is due largely to the success of the Residential Efficient Products Marketplace program and the lighting measures

offered through the program. While the savings from the income and age qualifying programs are the lowest of the three sectors, those programs serve a hard-to-reach segment of the population. The program is designed to not only produce energy savings, but to also address various health and safety measures requiring attention before energy efficiency measures can be implemented (e.g., repairing walls or doors).

**Table 6. Virginia summary program metrics - energy impacts of residential and income and age qualified programs (cumulative through December 31, 2023)**

| DSM phase  | Program                                   | Energy impacts                                 |                                       |                                     |  |  |                                     |                                   |  |
|--|---|--|---------------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|
|  |   | Gross  |                                       |                                     |  | Net  |                                     |                                   |  |
|  |   | Total annualized gross energy savings (MWh/yr) | Cumulative gross energy savings (MWh) | Lifetime gross energy savings (MWh) | Total summer gross peak demand reductions (MW) | Total annualized net energy savings (MWh/yr) | Cumulative net energy savings (MWh) | Lifetime net energy savings (MWh) | Total summer net peak demand reductions (MW) |
| VII  | Appliance Recycling                       | 4,580  | 11,304                                | 36,653                              | 0.69   | 2,748  | 6,782                               | 21,992                            | 0.41   |
|  | Efficient Products Marketplace            | 446,246  | 1,184,524                             | 7,403,792                           | 41   | 253,744                                      | 711,593                             | 4,210,248                         | 23   |
|  | Home Energy Assessment                    | 45,311   | 96,677                                | 566,515                             | 3.41   | 13,389                                       | 25,907                              | 167,404                           | 1.05   |
| VIII   | Customer Engagement                       | 114,261  | 107,157                               | 115,394                             | 0  | 15,635                                       | 14,422                              | 15,822                            | 0  |
|  | EV Energy Efficiency and Demand Response  | 83   | 85                                    | 830                                 | 0  | 66   | 68                                  | 664                               | 0  |
|  | Home Retrofit                             | 442  | 677                                   | 10,166                              | 0.13   | 398  | 609                                 | 9,149                             | 0.11   |
|  | Kits                                      | 10,604   | 14,238                                | 60,843                              | 0.93   | 6,363  | 8,543                               | 36,506                            | 0.56   |
|  | Manufactured Housing                      | 120  | 50                                    | 655                                 | 0.04   | 108  | 45                                  | 590                               | 0.04   |
|  | Multifamily                               | 661  | 704                                   | 5,572                               | 0.12   | 595  | 633                                 | 5,015                             | 0.11   |
|  | New Construction                          | 14,430   | 15,864                                | 360,787                             | 6.17   | 12,554                                       | 13,802                              | 313,884                           | 5.37   |
|  | Thermostat Purchase and WeatherSmart      | 4,745  | 6,540                                 | 29,059                              | 1.09   | 3,955  | 5,366                               | 23,406                            | 1.03   |
|  | Smart Home                                | 31   | 18                                    | 193                                 | 0.002  | 26   | 15                                  | 164                               | 0.001  |
| IX   | Virtual Energy Audit                      | 7,933  | 4,885                                 | 81,121                              | 0.74   | 4,760  | 2,931                               | 48,673                            | 0.44   |
|  | Water Savings                             | 611  | 365                                   | 6,980                               | 0.10   | 550  | 329                                 | 6,282                             | 0.09   |
| <b>Residential programs, total</b>               |   | <b>650,059</b>                                 | <b>1,443,089</b>                      | <b>8,678,560</b>                    | <b>55</b>                                      | <b>314,891</b>                               | <b>791,046</b>                      | <b>4,859,800</b>                  | <b>33</b>                                    |
| VIII   | IAQ HVAC Health and Safety                | 3,137  | 4,760                                 | 42,378                              | 0.54   | 2,509  | 3,808                               | 33,902                            | 0.43   |
| IX   | IAQ Solar                                 | 857  | 394                                   | 21,438                              | 0.31   | 686  | 315                                 | 17,151                            | 0.25   |
|  | Residential IAQ Energy Efficiency         | 7,186  | 5,639                                 | 155,089                             | 1.83   | 5,749  | 4,511                               | 124,071                           | 1.46   |
| X  | Residential IAQ Home Improvement Enhanced | 1.66   | 0.27                                  | 33                                  | 0.001  | 1.64   | 0.27                                | 33                                | 0.001  |
| <b>Income and Age Qualifying programs, total</b> |   | <b>11,182</b>                                  | <b>10,793</b>                         | <b>218,938</b>                      | <b>2.67</b>                                    | <b>8,946</b>                                 | <b>8,635</b>                        | <b>175,157</b>                    | <b>2.14</b>                                  |

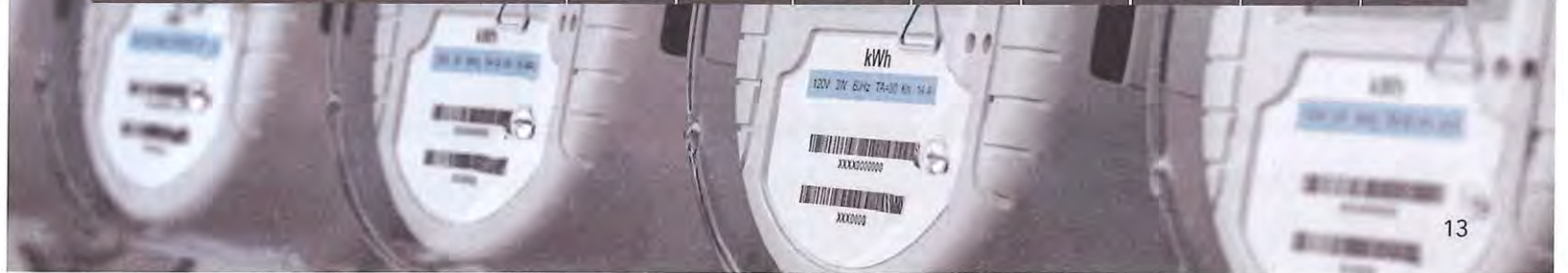




Table 7. Virginia summary program metrics - energy impacts of non-residential programs (cumulative through December 31, 2023)

| DSM phase                       | Program                              | Energy impacts                                 |                                       |                                     |  |  |                                     |                                   |  |
|---------------------------------|--------------------------------------|--|---------------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|
|                                 |                                      | Gross  |                                       |                                     |  | Net  |                                     |                                   |  |
|                                 |                                      | Total annualized gross energy savings (MWh/yr) | Cumulative gross energy savings (MWh) | Lifetime gross energy savings (MWh) | Total summer gross peak demand reductions (MW) | Total annualized net energy savings (MWh/yr) | Cumulative net energy savings (MWh) | Lifetime net energy savings (MWh) | Total summer net peak demand reductions (MW) |
| VII                             | Heating and Cooling Efficiency       | 29,529   | 28,613                                | 442,967                             | 5.51   | 20,670                                       | 20,029                              | 310,077                           | 3.85   |
|                                 | Lighting Systems & Controls          | 81,064   | 192,418                               | 825,218                             | 12   | 44,144                                       | 106,339                             | 449,395                           | 5.53   |
| X                               | Lighting Systems & Controls          | 20,831   | 4,305                                 | 211,840                             | 3.48   | 18,748                                       | 3,875                               | 190,656                           | 3.13   |
|                                 | Office                               | 12,633   | 11,745                                | 88,456                              | 0.09   | 11,370                                       | 10,571                              | 79,611                            | 0.08   |
| VII                             | Manufacturing                        | 12,691   | 10,445                                | 156,555                             | 1.53   | 11,422                                       | 9,400                               | 140,899                           | 1.38   |
|                                 | Window Film                          | 584  | 1,374                                 | 5,838                               | 0.08   | 467  | 1,099                               | 4,670                             | 0.06   |
| VIII                            | Midstream Energy Efficiency Products | 3,910  | 3,415                                 | 70,235                              | 2.66   | 3,519  | 3,073                               | 63,211                            | 2.39   |
|                                 | Multifamily                          | 377  | 229                                   | 3,232                               | 0.02   | 340  | 206                                 | 2,909                             | 0.02   |
|                                 | New Construction                     | 28,750   | 11,099                                | 431,362                             | 3.22   | 25,875                                       | 9,989                               | 388,226                           | 2.89   |
|                                 | Small Business Improvement Enhanced  | 12,711   | 16,174                                | 129,484                             | 2.72   | 10,604                                       | 13,932                              | 108,041                           | 2.14   |
| IX                              | Agricultural Energy Efficiency       | 5,896  | 5,776                                 | 64,998                              | 0.85   | 5,720  | 5,603                               | 63,048                            | 0.82   |
|                                 | Building Automation System           | 0  | 0                                     | 0                                   | 0  | 0  | 0                                   | 0                                 | 0  |
|                                 | Building Optimization                | 15,657   | 8,600                                 | 78,965                              | 0.36   | 14,091                                       | 7,740                               | 71,069                            | 0.33   |
|                                 | Engagement                           | 0  | 0                                     | 0                                   | 0  | 0  | 0                                   | 0                                 | 0  |
|                                 | Prescriptive Enhanced                | 23,199   | 20,751                                | 150,914                             | 20   | 20,879                                       | 18,676                              | 135,822                           | 18.29  |
| Non-Residential programs, total |                                      | 247,832  | 314,945                               | 2,660,064                           | 53   | 187,848                                      | 210,533                             | 2,007,635                         | 41   |
| All programs, total             |                                      | 909,073  | 1,768,827                             | 11,557,562                          | 110  | 511,685                                      | 1,010,214                           | 7,042,592                         | 76   |



Tables 8 and 9 show the annualized non-energy impacts in terms of customer bill savings; avoided carbon emissions; operations and maintenance non-energy impacts for HVAC, lighting, and motor measures; and water savings.

**Table 8. Virginia summary program metrics - other impacts of residential and income and age qualified programs (cumulative through December 31, 2023)**

| DSM phase  | Program                                   | Bill savings (\$M/year) | Carbon emissions avoided (metric tons CO <sub>2</sub> /yr) | O&M NEIs (\$M/year) | Water savings (Mgal/year) |
|--|---|-------------------------|--|---------------------|---------------------------|
| VII  | Appliance Recycling                       | \$0.12                  | 2,608  | N/A                 | N/A                       |
|  | Efficient Products Marketplace            | \$0.32                  | 257,591  | N/A                 | 44                        |
|  | Home Energy Assessment                    | \$0.63                  | 25,772   | \$2.18              | 3.49                      |
| VIII   | Customer Engagement                       | \$4.02                  | 64,449   | N/A                 | N/A                       |
|  | EV Energy Efficiency and Demand Response  | \$0.01                  | 47   | N/A                 | N/A                       |
|  | Home Retrofit                             | \$0.01                  | 250  | \$0                 | 0.01                      |
|  | Kits                                      | \$0.46                  | 6,293  | \$0.06              | 3.31                      |
|  | Manufactured Housing                      | \$0.01                  | 68   | \$0.01              | 0.06                      |
|  | Multifamily                               | \$0.03                  | 374  | \$0.06              | N/A                       |
|  | New Construction                          | \$0.92                  | 8,261  | N/A                 | N/A                       |
|  | Thermostat Purchase and WeatherSmart      | \$0.17                  | 2,775  | N/A                 | N/A                       |
|  | Smart Home                                | \$0.002                 | 18   | \$0.0002            | N/A                       |
|  | IX  | Virtual Energy Audit    | \$0.72   | 4,712               | \$1.94                    |
| Water Savings                                    |   | \$0.06                  | 356  | N/A                 | N/A                       |
| <b>Residential programs, total</b>               |   | <b>\$7.48</b>           | <b>373,572</b>   | <b>\$4.25</b>       | <b>85</b>                 |
| VIII   | IAQ HVAC Health and Safety                | \$0.10                  | 1,769  | -\$0.01             | N/A                       |
| IX   | IAQ Solar                                 | \$0.10                  | 497  | N/A                 | N/A                       |
|  | Residential IAQ Energy Efficiency         | \$0.50                  | 4,115  | \$0.03              | 4.07                      |
| X  | Residential IAQ Home Improvement Enhanced | N/A                     | 0.95   | N/A                 | N/A                       |
| <b>Income and Age Qualifying programs, total</b> |   | <b>\$0.70</b>           | <b>6,383</b>   | <b>\$0.03</b>       | <b>4.07</b>               |



Table 9. Virginia summary program metrics - other impacts of non-residential programs (cumulative through December 31, 2023)

| DSM phase                       | Program                              | Bill savings (\$M/year) | Carbon emissions avoided (metric tons CO <sub>2</sub> /yr) | O&M NEIs (\$M/year) | Water savings (Mgal/year) |
|---------------------------------|--------------------------------------|-------------------------|--|---------------------|---------------------------|
| VII                             | Heating and Cooling Efficiency       | \$0.85                  | 16,737   | -\$0.27             | N/A                       |
|                                 | Lighting Systems & Controls          | \$1.13                  | 47,197   | -\$0.12             | N/A                       |
| X                               | Lighting Systems & Controls          | \$2.14                  | 12,232   | \$0.25              | N/A                       |
|                                 | Office                               | \$0.63                  | 7,137  | N/A                 | N/A                       |
| VII                             | Manufacturing                        | \$0.67                  | 7,402  | N/A                 | N/A                       |
|                                 | Window Film                          | \$0.01                  | 345  | N/A                 | N/A                       |
| VIII                            | Midstream Energy Efficiency Products | N/A                     | 2,240  | -\$0.13             | 3.25                      |
|                                 | Multifamily                          | \$0.03                  | 214  | -\$0.02             | N/A                       |
|                                 | New Construction                     | \$1.74                  | 16,165   | N/A                 | N/A                       |
|                                 | Small Business Improvement Enhanced  | \$0.60                  | 8,405.54   | \$0.07              | N/A                       |
| IX                              | Agricultural Energy Efficiency       | \$0.10                  | 3,358  | \$0.005             | N/A                       |
|                                 | Building Automation System           | N/A                     | N/A  | N/A                 | N/A                       |
|                                 | Building Optimization                | \$0.75                  | 8,755  | N/A                 | N/A                       |
|                                 | Engagement                           | N/A                     | N/A  | N/A                 | N/A                       |
|                                 | Prescriptive Enhanced                | \$1.51                  | 13,416   | N/A                 | N/A                       |
| Non-Residential programs, total |                                      | \$10                    | 143,604  | -\$0.22             | 3.25                      |
| All programs, total             |                                      | \$18                    | 523,559  | \$4.06              | 92                        |



# Summary of energy efficiency programs

This section summarizes the Company's energy efficiency program activity through 2023 in Virginia and North Carolina.

## A shift away from lighting

Importantly, 2023 was the first program year that the Company removed various lighting measures from its residential programs.<sup>15</sup> This change occurred due to rules created in the Energy Independence and Security Act of 2007 (EISA) that took effect in January 2023. Similar shifts away from lighting measures are occurring in portfolios across the country, and Dominion Energy has been preparing for years to mitigate the effects of this change by growing and diversifying its programs.

As the graphics in this section show, the removal of EISA-compliant lighting measures had a notable effect on residential savings in both Virginia and North Carolina in 2023. From the start of the Phase I programs in 2010, lighting dominated the savings

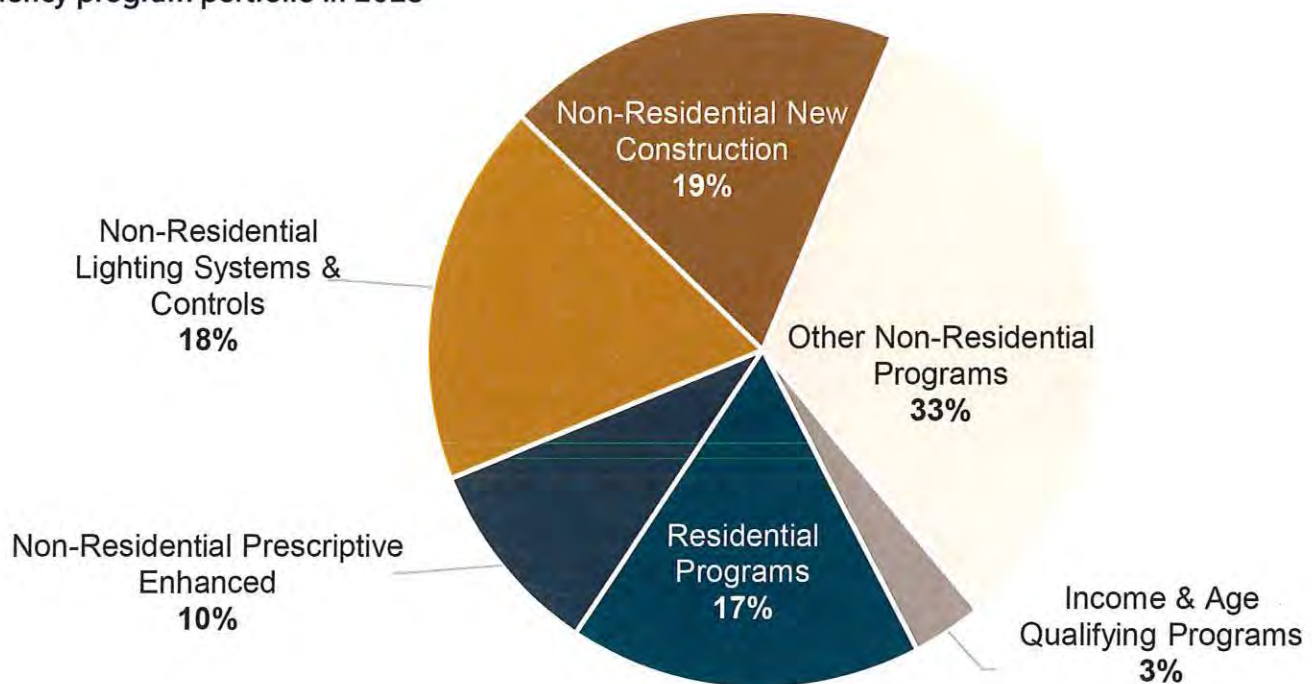
landscape, but in 2023 we see a different set of high-savings programs and measures begin to emerge in both states.

2023 was the first full year of the Company's broader customer awareness campaign. Given that the lead time between customer awareness, project implementation, and rebate approval may be many months, this report, which covers 2023 program activities, likely does not capture the full impacts of the awareness campaign.

## High-saving programs in 2023 - Virginia

Figure 2 shows the percentage of installed net annualized energy savings in 2023 by energy efficiency program in Virginia. More than three-quarters of the 2023 net savings resulted from the non-residential programs while roughly one-fifth were from the residential programs.

**Figure 2. Percentage of installed net annualized energy savings across the Virginia energy efficiency program portfolio in 2023**



<sup>15</sup> Non-residential lighting remained mostly unaffected by EISA in 2023 and continued to contribute a substantial portion of the portfolio's savings. While some residential lighting measures still received rebates in 2023, they contributed significantly less incremental savings.

In Virginia, three programs stand out for their high savings contributions to the portfolio: Non-Residential New Construction (19% of new incremental annualized net savings), Non-Residential Lighting Systems & Controls (18%), and Non-Residential Prescriptive Enhanced (10%).

After two years of implementation, the Non-Residential New Construction Program began to report participation and savings in 2023 with a large data center project and several similar projects in its pipeline. This program inherently requires long lead times to recruit building designers, identify measures, complete construction, and verify measure installation.

The Company has offered a Lighting Systems & Controls program in various forms and phases since DSM Phase I in 2010, and it has consistently been a high energy savings program.

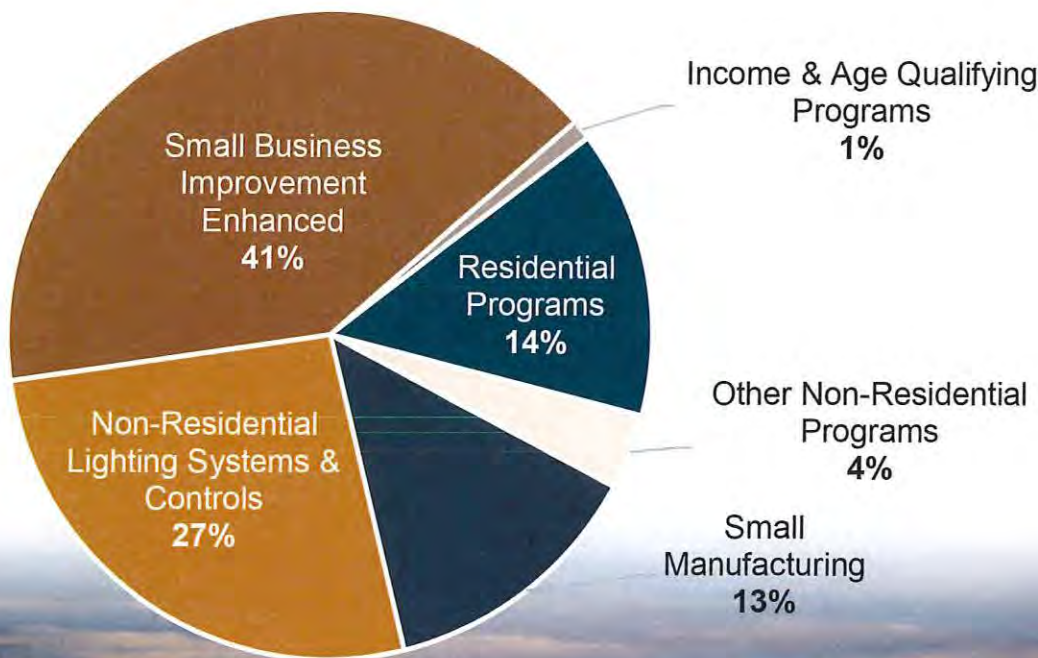
The Company has also offered various forms of the multi-measure Non-Residential Prescriptive Enhanced

program since DSM Phase II in 2012. It began as the Non-Residential Energy Audit program, transitioned in Phase VI to the Non-Residential Prescriptive program, and is now the Non-Residential Prescriptive Enhanced program. Notably, many of the measures from the closing Phase VII non-residential programs will be bundled into the Prescriptive Enhanced Bundle program starting in 2024.

### High-saving programs in 2023 – North Carolina

Figure 3 shows the percentage of installed net annualized energy savings in 2023 by energy efficiency program in North Carolina. Similar to Virginia, the non-residential sector contributed more than four-fifths of net savings, particularly the Small Business Improvement Enhanced program (41%). Consistent with past years and with trends in Virginia, the Non-Residential Lighting Systems & Controls Program is the next largest contributor, with 27% of new net total savings.

**Figure 3. Percentage of installed net annualized energy savings across the North Carolina energy efficiency program portfolio in 2023**



## Phase VIII programs are closing and bundling measures

### Residential Efficient Products Marketplace, Non-Residential Lighting Systems & Controls, and Residential Home Energy Assessment programs

Dominion Energy closed the Phase VII programs at the end of 2023 after being open for four full years. The energy savings from this phase of programs came primarily from lighting measures installed through the Residential Efficient Products Marketplace, Non-Residential Lighting Systems & Controls, and Residential Home Energy Assessment programs. Apart from the EISA-compliant residential lighting measures and the measures that the now closed Residential Appliance Recycling Program had offered, the measures that were available in these Phase VII programs will continue to be available in other new and existing programs.<sup>13</sup>

### Non-Residential Small Manufacturing Program, Cooling and Heating Efficiency, Window Film, and Office programs

The Non-Residential Small Manufacturing, Cooling and Heating Efficiency, Window Film, Office, and

Residential Appliance Recycling programs trended much lower than planned in participation and savings in their initial program years. To streamline these program offerings, the Company decided to bundle the Manufacturing, Cooling and Heating Efficiency, and Window Film programs under the Phase IX Non-Residential Enhanced Prescriptive program and closed the Office and Residential Appliance Recycling programs. In 2024, the measures formally offered by the Office program will continue to be available to non-residential customers under the Phase IX Building Optimization program.

This bundling approach allows the Company to continue to offer these programs' measures to customers while also reducing the costs of operating stand-alone programs that may be better combined.<sup>14</sup>

### Residential Appliance Recycling program

Dominion Energy offered the Residential Appliance Recycling program in partnership with different implementation vendors and appliance pick-up contractors over many years, beginning in

<sup>13</sup> All three programs underwent program evaluations during their lifecycle. The Residential Efficient Products Marketplace program was evaluated twice for gross and net impacts; the Non-Residential Lighting Systems & Controls program was evaluated for gross and net impacts, baseline, and measure persistence; and the Residential Home Energy Assessment program was evaluated for gross and net impacts. The studies were published under SCC Case No. PUR-2021-00247.

<sup>14</sup> SCC Case No. PUR-2022-00210. <https://scc.virginia.gov/docketsearch#/caseDetails/143710>. Accessed April 3, 2023.



Phase IV. However, while the program saw steady enrollment when it was operating smoothly, it was often plagued by disruptions to service. These disruptions originated from unexpected economic hardships for the contractors or supply chain-related setbacks such as labor and truck shortages. While the Company attempted to solicit new bids for this type of appliance recycling program in future phases, it received no bids. Therefore, the appliance recycling measures that this program offered will be discontinued for the foreseeable future.

### Impact of Covid-19 and legislative changes on Phase VII programs

The past several years brought many significant and unexpected changes to the economy and regulations that affected these programs. The programs were designed and filed in 2018, assuming 5-year implementation in a pre-pandemic economy, and under a regulatory framework that restricted large customers (with greater than 500 kW) from participating in them.<sup>15</sup> Just as the programs were launching, in early 2020, the COVID-19 pandemic forced them to pause and then readjust operations

with limited in-person contact. In later 2021, under the VCEA, the non-residential programs were opened to larger customers.

Despite these major events, the Phase VII programs combined spent \$85M or roughly 80% of planned expenditures through the end of 2023. Participation in the same programs was more than 130% of planned through the end of 2023, and net annualized savings were 372 GWh/year, or roughly 74% of planned net energy savings. This is an achievement given the challenges these programs had to face and the resulting adjustments in program delivery they had to make.

### Phase VIII programs continue to ramp up

#### Navigating the post-covid economy

The Phase VIII programs launched in spring 2021 and have been running for two to three years. These programs were also designed and filed prior to the pandemic and approved in 2020. The two new construction programs targeted at the residential and non-residential sectors have thus far contributed the most savings of the programs in this phase.<sup>16</sup>

<sup>15</sup> The Grid Transformation and Security Act, Code of Virginia. Chapter 296. Section § 56-585.1. A.5. c. Approved March 9, 2018. <https://lis.virginia.gov/cgi-bin/legp604.exe?181+ful+CHAP0296>

<sup>16</sup> The Residential New Construction baseline was studied recently, as published in SCC Case No. PUR-2021-00247.



### Small Business Improvement Enhanced program

The Small Business Improvement Enhanced program is a well-established program that has existed since the Phase V Small Business Improvement program (launched in 2016). While it has enrolled almost all its planned number of participants, the net savings are less than half of what the program had planned to realize. The program derives most of its energy savings from lighting measures, which were evaluated in the Non-Residential lighting study. As a program improvement to increase participation and savings, the Company asked the Commission (in Case No. PUR-2023-00217) to expand program eligibility to customers with greater than five subsidiaries and is awaiting the Commission’s decision as of this report.

### Targeted programs: Residential Manufactured Housing, Multifamily, Retrofit, and Electric Vehicle Energy Efficiency, and Non-Residential Midstream Energy Efficiency

The programs in Phase VIII that target specific segments of the population (Residential Manufactured Housing, Multifamily, Retrofit, Electric Vehicle Energy Efficiency, and Non-Residential

Midstream Energy Efficiency) continued to see lower-than-planned participation and net new energy savings in 2023. However, they are growing more than in prior years.

In the 2022 EM&V report, the Manufactured Housing and Retrofit programs reported a lack of a strong network of Building Performance Institute (BPI)-certified professionals. In 2024, the Retrofit program will be bundled with the closing Residential Home Energy Assessment Program.

The Electric Vehicle Energy Efficiency program has several customer enrollment restrictions that limit the eligible population to a subset of all EV owners (i.e., EV owners who purchased a new Level 2 charger recently).

### Residential Customer Engagement

The impact evaluation of Residential Customer Engagement found that the program, as implemented in 2021 and 2022, realized very little savings. This program will be extended with a new implementer in 2024.





## Phase IX programs experience both early successes and challenges

The SCC approved the Phase IX programs in the fall of 2021. By the end of 2023, many of these programs had exceeded their planned net savings goals including the Agricultural Program, the Non-Residential Building Optimization Program, and the Income and Age Qualifying Home Improvement Energy Efficiency Program (a continuation of a previous iteration of the program under Phase IV). Other programs like Income and Age Qualifying Solar and Non-Residential Automation and Engagement saw slower uptake than originally planned.

The Agricultural program was recently expanded to allow both residential and non-residential customers to participate. In 2024, the same measures in the Phase VII Office program will be available under the Building Optimization program.

In late 2023, the Company launched multiple marketing campaigns to drive customers to the Residential Virtual Audit program, which in 2023 led to participation levels that were quadruple the 2022 levels.

Like the Phase VIII programs targeting specific segments of the population, the Residential Smart Homes and Water Savings programs are still finding their niche in the market and ramping up.

The Income and Age Qualifying Solar program participation was lower than planned in 2023. One barrier to program growth is the strict siting

requirements for projects to have optimal site conditions for solar energy production, such as a south-facing roof without significant tree coverage. Fewer sites meet the required conditions than previously anticipated; in other instances, customers were not interested in following through with the installations.

The Non-Residential Automation and Engagement programs did not complete any projects in 2023 but established a pipeline of projects and participants. Similar to the Non-Residential New Construction program, both require long lead times before projects can be completed and participants can be counted. Building automation projects tend to be larger systems that take time to install and commission. Customer Engagement participants must be enrolled for at least one year before they can be counted as participants.

## Phase X programs are launching

Two of the Phase X programs approved by the SCC in late summer 2022, Non-Residential Lighting Systems & Controls and Residential Income and Age Qualifying Home Improvement, had participation in 2023. These two programs were continuations of programs offered in previous phases. Many of the other new programs are building their vendor networks (Non-Residential Data Center, Non-Residential Hotel and Lodging, Non-Residential Healthcare). Information technology systems delayed start-up for a few programs including Non-Residential Small Business Behavioral, and Residential Moderate to Low Income Targeted Reports.



## Annualized energy savings, participation, and program spending

Table 10 through Table 12 on the following pages show net annualized energy savings, participation, and program spending from the inception of active programs in Virginia and North Carolina.

In aggregate, the portfolio spent about three-fourths of its budget through 2023 in Virginia and slightly less than half of its budget in North Carolina.<sup>17</sup>

This spending resulted in the Virginia program achieving almost half of its planned net energy savings for 2023 and the North Carolina program attaining roughly one-fifth of planned net energy.

In Virginia, spending across the three sectors—residential, Income and Age Qualified (IAQ), and non-residential—ranged between 67% and 84% of planned. The residential sector led in the percentage of planned participation at 75% of planned compared to 44% of planned participation for the IAQ sector and only 22% for the non-residential sector. In terms of net energy savings achieved as a percentage of the plan across the three sectors, residential achieved 43% of planned, IAQ achieved 40%, and non-residential achieved 65%. Comparing the participation-level achievements with the energy savings achievements indicates that the residential

participants are producing less realized net savings than planned, the IAQ participants are producing about the same per-participant level of savings as planned, and the non-residential participants are producing a much greater per-participant level of savings than planned.

In North Carolina, the IAQ sector leads in net energy savings compared to planning, exceeding plans at 101% though participation in the IAQ program is much lower than planned (3%). This indicates that the IAQ program realized savings per participant are greater than planned. The non-residential sector shows a similar trend; participation was less than 4% of planned, and net energy savings is 25% of planned. In the residential sector, participation was 12% of planned and net energy savings was 21%.

As in Virginia, spending in North Carolina across the three sectors ranged between 34% and 56% of planned spending.

More granular details of each program’s performance by month appear in Appendix B, Appendix O, and Appendix P. Cumulative and lifetime participation, net energy savings, and net peak demand reduction indicators are provided in Appendix Q. The reported indicators support the Company’s integrated resource planning process, lost revenue recovery calculations (if pursued), program incentives, and other calculations that rely on these metrics.

<sup>17</sup> When reviewing the North Carolina results, please note that the overall system-level program budget is allocated relatively between Virginia and North Carolina, with about 94% of costs allocated to Virginia and the remaining 6% allocated to North Carolina.



**Table 10. Annualized program progress for active residential Phases VII and VIII energy efficiency programs (cumulative from program start through December 31, 2023) in Virginia and North Carolina (active programs)<sup>18, 19, 20</sup>**

| Program                                  | Metric    | Virginia           |                             |  | North Carolina     |                             |  |
|--|-----------|--------------------|-----------------------------|--|--------------------|-----------------------------|--|
|  |           | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) |
| <b>Phase VII</b>                         |           |                    |                             |  |                    |                             |  |
| Appliance Recycling                      | Actual    | \$2.37             | 6.56                        | 2,748  | \$0.08             | 0.04                        | 18   |
|  | Planned   | \$8.32             | 41                          | 19,266                                       | \$0.45             | 2.28                        | 1,073  |
|  | % of Plan | 28%                | 16%                         | 14%  | 17%                | 1.80%                       | 1.64%  |
| Efficient Products Marketplace           | Actual    | \$35               | 14,829                      | 253,744                                      | \$1.09             | 288                         | 4,824  |
|  | Planned   | \$41               | 13,402                      | 374,827                                      | \$2.14             | 666                         | 19,261                                       |
|  | % of Plan | 86%                | 111%                        | 68%  | 51%                | 43%                         | 25%  |
| Home Energy Assessment                   | Actual    | \$20               | 23                          | 13,389                                       | \$0.44             | 0.08                        | 36   |
|  | Planned   | \$21               | 137                         | 49,036                                       | \$1.19             | 8.03                        | 2,799  |
|  | % of Plan | 92%                | 17%                         | 27%  | 37%                | 0.93%                       | 1.28%  |
| <b>Phase VIII</b>                        |           |                    |                             |  |                    |                             |  |
| Customer Engagement                      | Actual    | \$5.08             | 806                         | 15,635                                       |                    |                             |  |
|  | Planned   | \$5.64             | 823                         | 138,298                                      |                    |                             |  |
|  | % of Plan | 90%                | 98%                         | 11%  |                    |                             |  |
| EV Energy Efficiency and Demand Response | Actual    | \$0.66             | 0.64                        | 66   |                    |                             |  |
|  | Planned   | \$1.19             | 2.44                        | 917  |                    |                             |  |
|  | % of Plan | 55%                | 26%                         | 7.24%  |                    |                             |  |
| Home Retrofit                            | Actual    | \$2.68             | 0.19                        | 398  | \$0.13             | 0                           | 0  |
|  | Planned   | \$5.32             | 5.08                        | 9,874  | \$0.33             | 0.32                        | 630  |
|  | % of Plan | 50%                | 3.80%                       | 4.03%  | 41%                | 0%                          | 0%   |
| Kits                                     | Actual    | \$3.95             | 86                          | 6,363  | \$0.20             | 4.27                        | 313  |
|  | Planned   | \$5.78             | 85                          | 22,378                                       | \$0.36             | 5.40                        | 1,428  |
|  | % of Plan | 68%                | 102%                        | 28%  | 55%                | 79%                         | 22%  |
| Manufactured Housing                     | Actual    | \$2.02             | 0.56                        | 108  |                    |                             |  |
|  | Planned   | \$4.69             | 5.60                        | 9,929  |                    |                             |  |
|  | % of Plan | 43%                | 10%                         | 1%   |                    |                             |  |
| Multifamily                              | Actual    | \$2.20             | 2.92                        | 595  |                    |                             |  |
|  | Planned   | \$6.19             | 37                          | 32,792                                       |                    |                             |  |
|  | % of Plan | 36%                | 8%                          | 2%   |                    |                             |  |
| New Construction                         | Actual    | \$7.06             | 6.50                        | 12,554                                       |                    |                             |  |
|  | Planned   | \$14               | 14                          | 19,053                                       |                    |                             |  |
|  | % of Plan | 52%                | 48%                         | 66%  |                    |                             |  |
| Thermostat Purchase and WeatherSmart     | Actual    | \$2.91             | 19                          | 3,955  | \$0.10             | 0.57                        | 143  |
|  | Planned   | \$3.60             | 23                          | 9,359  | \$0.22             | 1.44                        | 597  |
|  | % of Plan | 81%                | 86%                         | 42%  | 45%                | 39%                         | 24%  |

<sup>18</sup> Participation in the Residential Appliance Recycling Program is measured by units recycled. Participation in the Residential Efficient Products Marketplace Program is measured by incentivized unit, i.e., lamp, fixture, or appliance. Participation in the Thermostat Purchase and WeatherSmart program is measured by the number of thermostats purchased and the number of households with controlled thermostats, respectively.

<sup>19</sup> The SCC approved the Customer Engagement programs as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

<sup>20</sup> The SCC approved the Smart Thermostat Purchase and WeatherSmart programs as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

**Table 11. Annualized program progress for active residential Phase IX and income and age qualifying energy efficiency programs (cumulative through December 31, 2023) in Virginia and North Carolina**

| Program                                       | Metric    | Virginia           |                             |  | North Carolina     |                             |  |
|---|-----------|--------------------|-----------------------------|--|--------------------|-----------------------------|--|
|   |           | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) |
| <b>Phase IX</b>                               |           |                    |                             |  |                    |                             |  |
| Smart Home                                    | Actual    | \$1.32             | 0.06                        | 26   | \$0.05             | 0.002                       | 0.58   |
|   | Planned   | \$4.38             | 12                          | 14,265                                       | \$0.20             | 0.77                        | 910  |
|   | % of Plan | 30%                | 0.51%                       | 0.18%  | 27%                | 0.26%                       | 0.06%  |
| Virtual Energy Audit                          | Actual    | \$2.17             | 10                          | 4,760  | \$0.10             | 0.42                        | 238  |
|   | Planned   | \$7.54             | 103                         | 30,772                                       | \$0.31             | 6.60                        | 1,964  |
|   | % of Plan | 29%                | 10%                         | 15%  | 32%                | 6.30%                       | 12%  |
| Water Savings                                 | Actual    | \$0.61             | 0.43                        | 550  | \$0.02             | 0.01                        | 13   |
|   | Planned   | \$1.88             | 2.82                        | 5,551  | \$0.09             | 0.18                        | 354  |
|   | % of Plan | 33%                | 15%                         | 10%  | 25%                | 6.11%                       | 3.59%  |
| <b>All Residential programs</b>               |           |                    |                             |  |                    |                             |  |
| Total   | Actual    | \$88               | 963                         | 314,891                                      | \$2.22             | 5.38                        | 5,585  |
|   | Planned   | \$130              | 1,290                       | 736,316                                      | \$5.29             | 25                          | 29,018                                       |
|   | % of Plan | 67%                | 75%                         | 43%  | 42%                | 21%                         | 19%  |
| <b>Phase VIII</b>                             |           |                    |                             |  |                    |                             |  |
| IAQ HVAC Health and Safety                    | Actual    | \$31               | 11                          | 2,509  |                    |                             |  |
|   | Planned   | \$33               | 26                          | 17,406                                       |                    |                             |  |
|   | % of Plan | 95%                | 41%                         | 14%  |                    |                             |  |
| <b>Phase IX</b>                               |           |                    |                             |  |                    |                             |  |
| IAQ Solar                                     | Actual    | \$4.84             | 0.14                        | 686  |                    |                             |  |
|   | Planned   | \$21               | 1.11                        | 4,076  |                    |                             |  |
|   | % of Plan | 23%                | 12%                         | 17%  |                    |                             |  |
| Residential IAQ Energy Efficiency             | Actual    | \$14               | 10                          | 5,749  | \$0.26             | 0.04                        | 66   |
|   | Planned   | \$15               | 19                          | 1,027  | \$0.75             | 1.24                        | 66   |
|   | % of Plan | 95%                | 51%                         | 560%   | 34%                | 3.22%                       | 101%   |
| <b>Phase X</b>                                |           |                    |                             |  |                    |                             |  |
| Residential IAQ Home Improvement Enhanced     | Actual    | \$0.57             | 0.004                       | 1.64   |                    |                             |  |
|   | Planned   | \$1.29             | 0.40                        | 32   |                    |                             |  |
|   | % of Plan | 44%                | 1.00%                       | 5.19%  |                    |                             |  |
| <b>All Income and Age Qualifying programs</b> |           |                    |                             |  |                    |                             |  |
| Total   | Actual    | \$50               | 21                          | 8,946  | \$0.26             | 0.04                        | 66   |
|   | Planned   | \$69               | 47                          | 22,541                                       | \$0.75             | 1.24                        | 66   |
|   | % of Plan | 73%                | 44%                         | 40%  | 34%                | 3.22%                       | 101%   |



Table 12. Annualized program progress for active non-residential Phases VII and VIII energy efficiency programs (cumulative through December 31, 2023) in Virginia and North Carolina<sup>21</sup>

| Program                                     | Metric    | Virginia           |                             |  | North Carolina     |                             |  |
|---|-----------|--------------------|-----------------------------|--|--------------------|-----------------------------|--|
|   |           | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) |
| <b>Phase VII</b>                            |           |                    |                             |  |                    |                             |  |
| <b>Heating and Cooling Efficiency</b>       | Actual    | \$5.81             | 0.15                        | 20,670                                       | \$0.14             | 0.002                       | 100  |
|   | Planned   | \$8.72             | 2.98                        | 37,074                                       | \$0.48             | 0.17                        | 2,089  |
|   | % of Plan | 67%                | 5.06%                       | 56%  | 30%                | 1.19%                       | 4.78%  |
| <b>Lighting Systems &amp; Controls</b>      | Actual    | \$12               | 1.06                        | 44,144                                       | \$0.53             | 0.03                        | 1,157  |
|   | Planned   | \$9.00             | 1.99                        | 40,100                                       | \$0.47             | 0.11                        | 2,118  |
|   | % of Plan | 136%               | 53%                         | 110%   | 114%               | 27%                         | 55%  |
| <b>Office</b>                               | Actual    | \$3.23             | 0.17                        | 11,370                                       | \$0.11             | 0.003                       | 85   |
|   | Planned   | \$5.48             | 0.36                        | 20,977                                       | \$0.29             | 0.02                        | 1,172  |
|   | % of Plan | 59%                | 47%                         | 54%  | 37%                | 15%                         | 7.21%  |
| <b>Manufacturing</b>                        | Actual    | \$2.84             | 0.06                        | 11,422                                       | \$0.13             | 0.004                       | 378  |
|   | Planned   | \$5.85             | 0.30                        | 13,661                                       | \$0.31             | 0.02                        | 731  |
|   | % of Plan | 49%                | 21%                         | 84%  | 41%                | 25%                         | 52%  |
| <b>Window Film</b>                          | Actual    | \$1.40             | 0.09                        | 467  | \$0.07             | 1.30                        | 14   |
|   | Planned   | \$2.07             | 572                         | 7,551  | \$0.11             | 32                          | 424  |
|   | % of Plan | 68%                | 0.02%                       | 6.18%  | 60%                | 4.04%                       | 3.29%  |
| <b>Phase VIII</b>                           |           |                    |                             |  |                    |                             |  |
| <b>Midstream Energy Efficiency Products</b> | Actual    | \$2.10             | 0.20                        | 3,519  |                    |                             |  |
|   | Planned   | \$5.67             | 0.90                        | 11,503                                       |                    |                             |  |
|   | % of Plan | 37%                | 23%                         | 31%  |                    |                             |  |
| <b>Multifamily</b>                          | Actual    | \$0.71             | 0.03                        | 340  |                    |                             |  |
|   | Planned   | \$1.39             | 4.55                        | 7,783  |                    |                             |  |
|   | % of Plan | 51%                | 0.75%                       | 4.36%  |                    |                             |  |
| <b>New Construction</b>                     | Actual    | \$3.35             | 0.01                        | 25,875                                       | \$0.11             | 0.001                       | 39   |
|   | Planned   | \$5.15             | 0.16                        | 7,813  | \$0.32             | 0.01                        | 488  |
|   | % of Plan | 65%                | 5.00%                       | 331%   | 34%                | 10%                         | 8.08%  |
| <b>Small Business Improvement Enhanced</b>  | Actual    | \$11               | 1.85                        | 10,604                                       | \$0.61             | 0.06                        | 1,564  |
|   | Planned   | \$11               | 1.90                        | 27,598                                       | \$0.68             | 0.12                        | 1,785  |
|   | % of Plan | 99%                | 97%                         | 38%  | 90%                | 51%                         | 88%  |

<sup>21</sup> Participation in the Non-Residential Window Film program is reported in square feet rather than number of participants. Participation in the Midstream Energy Efficiency Products program is reported in the number of invoices rebated.

**Table 13. Annualized program progress for active non-residential Phases IX and X energy efficiency programs (cumulative through December 31, 2023) in Virginia and North Carolina<sup>22</sup>**

| Program                             | Metric    | Virginia           |                             |  | North Carolina     |                             |  |
|-------------------------------------|-----------|--------------------|-----------------------------|--|--------------------|-----------------------------|--|
|                                     |           | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) | Expenditures (\$M) | Gross participants (1,000s) | Total annualized net energy savings (MWh/yr) |
| <b>Phase IX</b>                     |           |                    |                             |  |                    |                             |  |
| Agricultural Energy Efficiency      | Actual    | \$1.38             | 0.01                        | 5,720  |                    |                             |  |
|                                     | Planned   | \$1.77             | 0.30                        | 3,746  |                    |                             |  |
|                                     | % of Plan | 78%                | 3.64%                       | 153%   |                    |                             |  |
| Building Automation System          | Actual    | \$0.79             | 0                           | 0  | \$0.03             | 0                           | 0  |
|                                     | Planned   | \$1.84             | 0.06                        | 7,560  | \$0.08             | 0.004                       | 540  |
|                                     | % of Plan | 43%                | 0%                          | 0%   | 41%                | 0%                          | 0%   |
| Building Optimization               | Actual    | \$1.76             | 0.05                        | 14,091                                       | \$0.04             | 0                           | 0  |
|                                     | Planned   | \$2.12             | 0.06                        | 9,217  | \$0.09             | 0.004                       | 658  |
|                                     | % of Plan | 83%                | 80%                         | 153%   | 43%                | 0%                          | 0%   |
| Engagement                          | Actual    | \$1.16             | 0                           | 0  | \$0.05             | 0                           | 0  |
|                                     | Planned   | \$2.99             | 0.11                        | 7,951  | \$0.14             | 0.01                        | 442  |
|                                     | % of Plan | 39%                | 0%                          | 0%   | 34%                | 0%                          | 0%   |
| Prescriptive Enhanced               | Actual    | \$16               | 0.96                        | 20,879                                       | \$0.12             | 0.01                        | 20   |
|                                     | Planned   | \$8.25             | 1.13                        | 30,455                                       | \$0.36             | 0.07                        | 1,944  |
|                                     | % of Plan | 192%               | 85%                         | 69%  | 35%                | 18%                         | 1.03%  |
| <b>Phase X</b>                      |           |                    |                             |  |                    |                             |  |
| Lighting Systems & Controls         | Actual    | \$3.32             | 0.26                        | 18,748                                       | \$0.12             | 0.01                        | 583  |
|                                     | Planned   | \$10               | 0.91                        | 63,137                                       | \$0.40             | 0.06                        | 4,015  |
|                                     | % of Plan | 34%                | 28%                         | 30%  | 29%                | 8.62%                       | 15%  |
| <b>All Non-Residential programs</b> |           |                    |                             |  |                    |                             |  |
| Total                               | Actual    | \$66               | 4.89                        | 187,848                                      | \$2.01             | 1.42                        | 3,940  |
|                                     | Planned   | \$78               | 588                         | 288,175                                      | \$3.58             | 33                          | 15,964                                       |
|                                     | % of Plan | 84%                | 0.83%                       | 65%  | 56%                | 4.34%                       | 25%  |
| <b>All programs</b>                 |           |                    |                             |  |                    |                             |  |
| Total                               | Actual    | \$204              | 989                         | 511,685                                      | \$4.49             | 6.84                        | 9,591  |
|                                     | Planned   | \$278              | 1,925                       | 1,047,032                                    | \$10               | 59                          | 45,048                                       |
|                                     | % of Plan | 73%                | 51%                         | 49%  | 47%                | 12%                         | 21%  |

<sup>22</sup> Participant total excludes the Efficient Products Marketplace and Window Film (DSM Phase VII) programs because they are measured by units incentivized and square feet installed, respectively, rather than by customers enrolled. While the Appliance Recycling program participation is measured by the number of units recycled, the program limits each customer to two units per household.

# Summary of peak shaving programs

Table 14 shows key performance indicators for Dominion Energy's four peak shaving programs.

The Residential Smart Thermostat Rewards Program (Virginia and North Carolina) added Google Nest as one of its participating manufacturers. This program expansion nearly doubled the program participation between 2022 and 2023.

2023 was the first year that the Electric Vehicle Charger Rewards Program (Virginia) called demand response events. The Water Savings Demand Response program enrolled customers in 2023. The program was designed with the assumption that the

penetration rate of heat pump water heaters would increase. However, both the market availability of controllable water heaters and their capital costs have slowed the uptake of this important measure. DNV conducted EM&V impact evaluations of the three programs that called demand response events in 2023: the Non-Residential Distributed Generation Program, the Smart Thermostat Rewards Program, and the Electric Vehicle Reward Program (details provided in Appendix L, Appendix M, and Appendix N). The key metrics for evaluating performance indicators are expenditures, net participation, and net peak shaving potential in kW.

**Table 14. Portfolio spending and net peak shaving potential by program (cumulative through December 31, 2023)<sup>23, 24</sup>**

| DSM phase              | Program                              | Metric           | Expenditures (\$M) | Participants (1,000s) | Peak shaving potential (kW) |
|------------------------|--------------------------------------|------------------|--------------------|-----------------------|-----------------------------|
| <b>Residential</b>     |                                      |                  |                    |                       |                             |
| VIII                   | <b>EV Charger Rewards</b>            | Actual           | \$0.45             | 1.49                  | 300                         |
|                        |                                      | Planned          | \$0.96             | 1.27                  | 1,271                       |
|                        |                                      | % of Plan        | 46%                | 117%                  | 24%                         |
|                        | <b>Smart Thermostat Rewards</b>      | Actual           | \$4.24             | 34                    | 39,107                      |
|                        |                                      | Planned          | \$6.32             | 30                    | 47,439                      |
|                        |                                      | % of Plan        | 67%                | 113%                  | 82%                         |
| IX                     | <b>Water Savings Demand Response</b> | Actual           | \$0.26             | 0.008                 | 0                           |
|                        |                                      | Planned          | \$0.69             | 2.00                  | 1,039                       |
|                        |                                      | % of Plan        | 38%                | 0.40%                 | 0%                          |
| <b>Non-Residential</b> |                                      |                  |                    |                       |                             |
| II                     | <b>Distributed Generation</b>        | Actual           | \$7.38             | 0.01                  | 6,688                       |
|                        |                                      | Planned          | \$15               | 0.01                  | 5,880                       |
|                        |                                      | % of Plan        | 48%                | 98%                   | 114%                        |
| <b>Total</b>           |                                      |                  |                    |                       |                             |
| <b>All Programs</b>    |                                      | <b>Actual</b>    | <b>12</b>          | <b>35</b>             | <b>46,095</b>               |
|                        |                                      | <b>Planned</b>   | <b>23</b>          | <b>33</b>             | <b>55,629</b>               |
|                        |                                      | <b>% of Plan</b> | <b>53%</b>         | <b>107%</b>           | <b>83%</b>                  |

<sup>23</sup> Participation is defined by the number of participating accounts except for in the Distributed Generation program. In this program, participation is defined by the number of enrolled megawatts.

<sup>24</sup> The SCC approved the Smart Thermostat Rewards Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). After additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020 as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.



## 1 INTRODUCTION

### 1.1 Reporting compliance requirements in Virginia

In Virginia, this report is designed to comply with three major legal requirements. The first is the SCC's Order requiring detailed evaluation, measurement, and verification (EM&V) reports following the implementation of demand-side management (DSM) programs. This Order states:

*The purpose of DSM programs is to reduce energy usage, either at peak times (demand response and peak-shaving programs) or year-round (energy efficiency programs). Once DSM programs have been approved, the Company is required to submit annual evaluation, measurement, and verification ("EM&V") reports of the approved programs to the Commission including evidence of actual energy savings achieved as a result of each specific program along with revised cost-benefit test results that incorporate actual Virginia energy savings and cost data.<sup>25</sup>*

The second legal requirement comes from the Virginia Clean Economy Act (VCEA), which states:

*The Commission shall annually monitor and report to the General Assembly the performance of all programs approved pursuant to this subdivision, including each utility's compliance with the total annual savings required by § 56-596.2, as well as the annual and lifecycle net and gross energy and capacity savings, related emissions reductions, and other quantifiable benefits of each program; total customer bill savings that the programs produce; utility spending on each program, including any associated administrative costs; and each utility's avoided costs and cost-effectiveness results.<sup>26</sup>*

The third legal requirement comes from Virginia's "EM&V Rule," which outlines the various elements that must be included in the Company's annual EM&V report.<sup>27</sup> In keeping with the motion granted by the SCC in Case No. PUR-2018-00168, this and all future EM&V reports shall be issued on or before June 15 of each calendar year.<sup>28</sup> Refer to Appendix A for a specific list of the reporting compliance requirements and where the required information can be found in this report or appendices to the report.

<sup>25</sup> Virginia State Corporation Commission. Ex Parte: In the matter of baseline determination, methodologies for evaluation, measurement, and verification of existing demand-side management programs, and the consideration of a standardized presentation of summary data for Virginia Electric and Power Company, Case No. PUR-2020-00156, Final Order (October 27, 2021).

<sup>26</sup> Virginia State Code Section 56-585.1 A 5 c (April 11, 2020).

<sup>27</sup> 20 VAC 5-318-50, developed through SCC Case No. PUR-2017-00047. November 9, 2017.

<sup>28</sup> Motion of Virginia Electric and Power Company to Extend and Modify Filing Date for Evaluation, Measurement & Verification Reports and for Expedited Consideration, Case No. PUR-2020-00156, Order Granting Motion (May 13, 2022).





## 1.2 Reporting compliance requirements in North Carolina

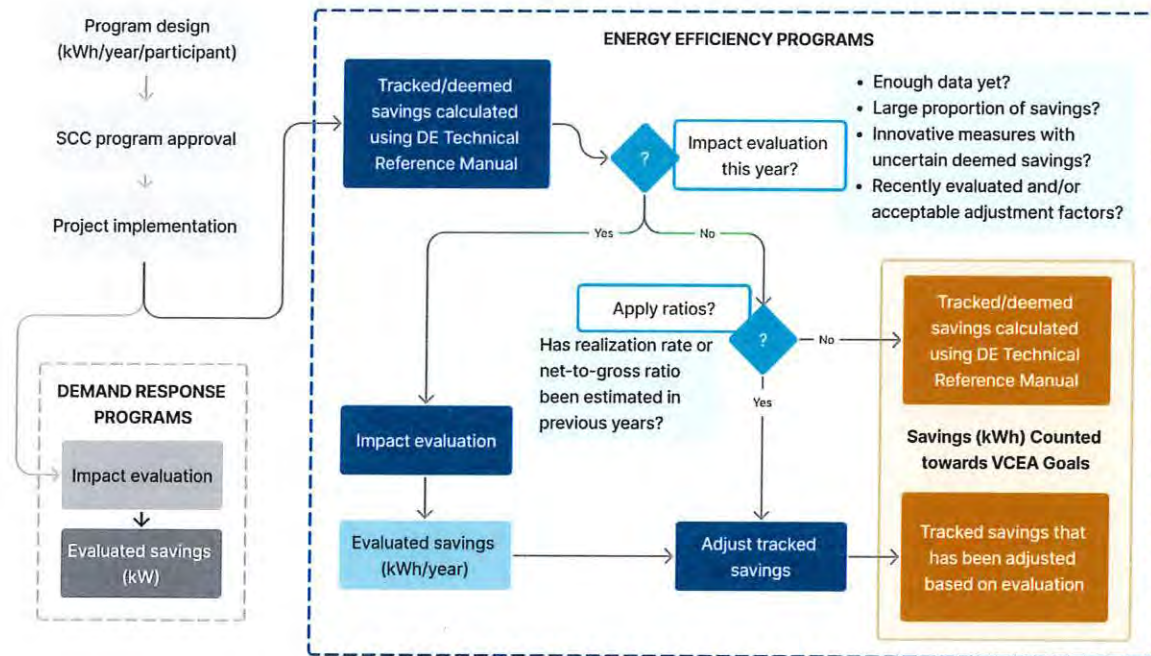
In North Carolina, this report meets the EM&V requirements established by the North Carolina Utilities Commission (NCUC). EM&V reports about the Company’s North Carolina programs must be filed with the NCUC and must include the EM&V reporting from Virginia.<sup>29, 30, 31</sup>

Refer to APPENDIX A for a specific list of the reporting compliance requirements and where the required information can be found in this report or appendices to the report.

## 1.3 Study approach

Figure 1-1 illustrates the EM&V process that Dominion Energy follows to track key program performance indicators and evaluate them according to rules and orders issued by the SCC and the NCUC and described in detail above. Refer to APPENDIX D for a detailed description of the methodologies used for calculating the results in this report, and to APPENDIX E for the program-specific EM&V plans that guide these methodologies.

Figure 1-1. Dominion Energy program evaluation, measurement, and verification process



EM&V is an important part of a program's cycle because its findings can be used during the program planning and design stages and can inform continuous improvement as a program evolves.

<sup>29</sup> In the Matter of Application of Virginia Electric and Power Company d/b/a Dominion North Carolina Power, for Approval of Demand Side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69, Order Approving DSM/EE Rider and Requiring Customer Notice at 13, Docket No. E-22, Sub 473 (December 13, 2011).

<sup>30</sup> Through its Orders issued in Docket No. E-22, Sub 473; and finally the NCUC’s instruction to align its EM&V filing schedule with that in Virginia (Docket No. E-22, Sub 524).

<sup>31</sup> SCC Case No. PUR-2018-00168 on April 30, 2020.



## 1.4 Report structure

Sections 2 through 5 contain the one-page summaries of the EM&V results for all the programs that were active in 2023. Each page contains the following:

1. VA SCC and NCUC case and docket numbers
2. Years program has been open
3. Per participant net savings per year
4. Eligibility requirements and measure list
5. Quick snapshot view of program performance to date by participation, net energy savings, and program costs
6. Key participant, energy, and demand metrics
7. Graphic summary of program composition by measure, building type, or some other valuable information

Following the body of the report, we provide appendices detailing supporting methodologies and program data in compliance with the legal requirements detailed above in Sections 1.1 and 1.2.

- APPENDIX A is a matrix showing in detail how DNV is complying with each legal requirement and order.
- APPENDIX B is the detailed version of this report, with program write-ups instead of one-page summaries.
- APPENDIX C provides a glossary of terms.
- APPENDIX D describes, in detail, the methodologies used to produce the results reported in the body of this report and supporting appendices.
- APPENDIX E contains the EM&V plans for each of the programs with program impacts that will be tracked and evaluated next year.
- APPENDIX F is the Dominion Energy Technical Reference Manual (TRM). It lists the protocols and assumptions used to calculate gross annualized savings, gross peak summer and winter demand reductions, water savings, and lifetime savings for the savings reported in this report.
- APPENDIX G through APPENDIX I present the detailed reports and memos documenting the impact evaluations and in-depth studies conducted for the following programs:
  - Non-Residential Distributed Generation (APPENDIX G)
  - Residential Smart Thermostat Reward (APPENDIX H)
  - Residential EV Charger Reward (APPENDIX I)
- APPENDIX J and APPENDIX K contain the detailed program performance indicators for each active and closed program with persistent savings in 2023 in Virginia and North Carolina respectively. The results are presented at these levels of detail:
  - Annual
  - Monthly for the reporting year (i.e., 2023)
  - Measure-level
  - Rate schedule level, compared to rate schedule level planned savings and compared to rate schedule level consumption
  - Benefit-cost ratios, including updated cost/benefit analysis of the DSM programs, along with a comparison of the updated cost/benefit analysis to the original cost/benefit analysis and all other cost/benefit analyses from prior EM&V Reports.
- APPENDIX L contains detailed program cumulative savings for each active and closed program with persistent savings in 2023 used for claiming lost revenue, program performance incentives, IRP modeling, lifetime savings accounting, and other purposes used in both states.



Section 1.5 shows the specific programs included in this report and the SCC's or NCUC's order date for approval, suspension, reinstatement, and closure of each of these programs. It also shows the average annualized kWh/year per participant.

## 1.5 Programs covered in this report

This report divides the DSM programs into four categories:

- Residential Energy Efficiency Programs (Section 2)
- Income and Age Qualifying Energy Efficiency Programs (Section 3)
- Non-Residential Energy Efficiency Programs (Section 4)
- Peak Shaving Programs (Section 5)

The tables in Sections 1.5.1 through 1.5.3 show the active, closed, and launching programs addressed in this report. The tables include the following information about each program:

- SCC's or NCUC's order dates for approval, suspension, reinstatement, and closure
- Average annualized kWh/year per for active, closed, and launching programs
- Appendices where more detailed data can be found about the respective program (e.g., EM&V plans, 2023 monthly program performance indicators, measure-level performance indicators, rate schedule level performance indicators)



1.5.1 Active programs

Table 1-1. Residential Phases VII and VIII energy efficiency programs open to enrollment or had savings in 2023

| DSM phase                                | Active program                 | State                      | Case/Docket                |               | Participant kWh/yr (through year-end 2023) | Report appendices |           |
|--|--------------------------------|----------------------------|----------------------------|---------------|--|-------------------|-----------|
|  |                                |                            | Number                     | Updated       |  | Perf. indic.      | EM&V plan |
| <b>Residential (energy efficiency)</b>   |                                |                            |                            |               |  |                   |           |
| VII                                      | Appliance Recycling            | VA                         | PUR-2018-00168             | May 2, 2019   | 387  | O.1               | E.3       |
|  |                                | NC                         | E-22, SUB 569              | Nov. 13, 2019 | 411  | P.6               |           |
|  | Efficient Products Marketplace | VA                         | PUR-2018-00168             | May 2, 2019   | 52   | O.2               | E.4       |
|  |                                | NC                         | E-22, SUB 568              | Nov. 13, 2019 | 44   | P.1               |           |
|  | Home Energy Assessment         | VA                         | PUR-2018-00168             | May 2, 2019   | 496  | O.3               | E.6       |
|  |                                | NC                         | E-22, SUB 567              | Nov. 13, 2019 | 467  | P.7               |           |
|  | Customer Engagement            | VA                         | Reapproved: PUR-2019-00201 | Jul. 30, 2020 | 22   | O.4               | E.7       |
|  |                                | NC                         | N/A                        | N/A           | N/A  | N/A               |           |
| EV Energy Efficiency and Demand Response | VA                             | PUR-2019-00201             | Jul. 30, 2020              | 103           | O.5  | E.9               |           |
|  | NC                             | N/A                        | N/A                        | N/A           | N/A  |                   | N/A       |
| Home Retrofit                            | VA                             | PUR-2019-00201             | Jul. 30, 2020              | 2,182         | O.6  | E.10              |           |
|  | NC                             | E-22, SUB 593              | Feb. 9, 2021               | 0             | P.8  |                   |           |
| Kits                                     | VA                             | PUR-2019-00201             | Jul. 30, 2020              | 71            | O.7  | E.12              |           |
|  | NC                             | E-22, SUB 592              | Feb. 9, 2021               | 70            | P.2  |                   |           |
| Manufactured Housing                     | VA                             | PUR-2019-00201             | Jul. 30, 2020              | 193           | O.8  | E.13              |           |
|  | NC                             | N/A                        | N/A                        | N/A           | N/A  |                   | N/A       |
| Multifamily                              | VA                             | PUR-2019-00201             | Jul. 30, 2020              | 164           | O.9  | E.14              |           |
|  | NC                             | N/A                        | N/A                        | N/A           | N/A  |                   | N/A       |
| New Construction                         | VA                             | PUR-2019-00201             | Jul. 30, 2020              | 2,180         | O.10                                       | E.15              |           |
|  | NC                             | N/A                        | N/A                        | N/A           | N/A  |                   | N/A       |
| Thermostat Purchase and WeatherSmart     | VA                             | Reapproved: PUR-2019-00201 | Jul. 30, 2020              | 236           | O.11                                       | E.16              |           |
|  | NC                             | E-22, SUB 594              | Feb. 19, 2019              | 277           | P.3  |                   |           |



Table 1-2. Residential Phase IX energy efficiency, residential Phases VII and IX demand response, and income and age qualifying programs open to enrollment or had impacts in 2023

| DSM phase  | Active program                            | State | Case/Docket                |               | Participant kWh/yr (through year-end 2023) | Report appendices |           |
|--|---|-------|----------------------------|---------------|--|-------------------|-----------|
|  |   |       | Number                     | Updated       |  | Perf. indic.      | EM&V plan |
| <b>Residential (energy efficiency)</b>               |   |       |                            |               |  |                   |           |
| IX   | Smart Home                                | VA    | PUR-2020-00274             | Sep. 7, 2021  | 409  | O.12              | E.17      |
|  |   | NC    | E-22, SUB 618              | Mar. 18, 2022 | 251  | P.4               |           |
|  | Virtual Energy Audit                      | VA    | PUR-2020-00274             | Sep. 7, 2021  | 445  | O.13              | E.18      |
|  |   | NC    | E-22, SUB 619              | Mar. 18, 2022 | 566  | P.10              |           |
|  | Water Savings                             | VA    | PUR-2020-00274             | Sep. 7, 2021  | 1,256                                      | O.14              | E.19      |
|  |   | NC    | E-22, SUB 620              | Mar. 18, 2022 | 1,156                                      | P.5               |           |
| <b>Residential (demand response)</b>                 |   |       |                            |               |  |                   |           |
| VIII   | EV Charger Rewards                        | VA    | PUR-2019-00201             | Jul. 30, 2020 | 0.201 (kW)                                 | O.43              | E.49      |
|  |   | NC    | N/A                        | N/A           | N/A  | N/A               | N/A       |
|  | Smart Thermostat Rewards                  | VA    | Reapproved: PUR-2019-00201 | Jul. 30, 2020 | 0.95 (kW)                                  | O.44              | E.50      |
|  |   | NC    | E-22, SUB 594              | Feb. 9, 2021  | 0.93 (kW)                                  | P.25              |           |
| IX   | Water Savings Demand Response             | VA    | PUR-2019-00201             | Jul. 30, 2020 | 0 (kW)                                     | O.45              | E.51      |
|  |   | NC    | E-22, SUB 621              | Mar. 18, 2022 | N/A  | P.26              |           |
| <b>Income and Age Qualifying (energy efficiency)</b> |   |       |                            |               |  |                   |           |
| VIII   | IAQ HVAC Health and Safety                | VA    | PUR-2019-00201             | Jul. 30, 2020 | 172  | O.15              | E.20      |
|  |   | NC    | N/A                        | N/A           | N/A  | N/A               | N/A       |
| IX   | IAQ Solar                                 | VA    | PUR-2020-00274             | Sep. 7, 2021  | 5,064                                      | O.16              | E.21      |
|  |   | NC    | N/A                        | N/A           | N/A  | N/A               | N/A       |
|  | Residential IAQ Energy Efficiency         | VA    | PUR-2020-00274             | Sep. 7, 2021  | 635  | O.17              | E.22      |
|  |   | NC    | E-22, SUB 608              | Dec. 14, 2021 | 2,019                                      | P.9               |           |
| X  | Residential IAQ Home Improvement Enhanced | VA    | PUR-2021-00247             | Aug. 10, 2022 | 411  | O.18              | E.23      |
|  |   | NC    | N/A                        | N/A           | N/A  | N/A               | N/A       |

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**Table 1-3. Non-residential Phases VII and VIII energy efficiency programs open to enrollment or had savings in 2023**

| DSM phase                                  | Active program                       | State          | Case/Docket    |               | Participant kWh/yr (through year-end 2023) | Report appendices |           |
|--|--------------------------------------|----------------|----------------|---------------|--|-------------------|-----------|
|  |                                      |                | Number         | Updated       |  | Perf. indic.      | EM&V plan |
| <b>Non-Residential (energy efficiency)</b> |                                      |                |                |               |  |                   |           |
| VII  | Heating and Cooling Efficiency       | VA             | PUR-2018-00168 | May 2, 2019   | 438,625                                    | O.21              | E.28      |
|  |                                      | NC             | E-22, SUB 574  | Nov. 13, 2019 | N/A  | P.13              |           |
|  | Lighting Systems & Controls          | VA             | PUR-2018-00168 | May 2, 2019   | 87,273                                     | O.22              | E.29      |
|  |                                      | NC             | E-22, SUB 573  | Nov. 13, 2019 | 54,543                                     | P.14              |           |
| X  | Lighting Systems & Controls          | VA             | PUR-2021-00247 | Aug. 10, 2022 | 72,385                                     | O.23              | E.30      |
|  |                                      | NC             | N/A            | N/A           | 116,646                                    | P.15              |           |
| VII  | Office                               | VA             | PUR-2018-00168 | May 2, 2019   | 74,106                                     | O.24              | E.31      |
|  |                                      | NC             | E-22, SUB 572  | Nov. 13, 2019 | 45,416                                     | P.20              |           |
|  | Manufacturing                        | VA             | PUR-2018-00168 | May 2, 2019   | 164,847                                    | O.25              | E.32      |
|  |                                      | NC             | E-22, SUB 571  | Nov. 13, 2019 | 94,487                                     | P.16              |           |
| Window Film                                | VA                                   | PUR-2018-00168 | May 2, 2019    | 3,452         | O.26                                       | E.33              |           |
|  | NC                                   | E-22, SUB 570  | Nov. 13, 2019  | N/A           | P.17                                       |                   |           |
| VIII                                       | Midstream Energy Efficiency Products | VA             | PUR-2019-00201 | Jul. 30, 2020 | 24,076                                     | O.27              | E.34      |
|  |                                      | NC             | PUR-2019-00201 | Jul. 30, 2020 | N/A  | N/A               | N/A       |
|  | Multifamily                          | VA             | PUR-2019-00201 | Jul. 30, 2020 | 6,571                                      | O.28              | E.14      |
|  |                                      | NC             | N/A            | N/A           | N/A  | N/A               | N/A       |
|  | New Construction                     | VA             | PUR-2019-00201 | Jul. 30, 2020 | 3,234,344                                  | O.29              | E.35      |
|  |                                      | NC             | E-22, SUB 591  | Feb. 9, 2021  | 39,446                                     | P.18              |           |
|  | Small Business Improvement Enhanced  | VA             | PUR-2019-00201 | Jul. 30, 2020 | 4,205                                      | O.30              | E.38      |
|  |                                      | NC             | E-22, SUB 596  | Feb. 9, 2021  | 24,486                                     | P.19              |           |



Table 1-4. Non-residential Phase IX energy efficiency and Phase II demand response programs open to enrollment or had impacts in 2023

| DSM phase                                  | Active program                           | State                  | Case/Docket    |                           | Participant kWh/yr (through year-end 2023) | Report appendices |           |      |
|--|--|------------------------|----------------|---------------------------|--|-------------------|-----------|------|
|  |  |                        | Number         | Updated                   |  | Perf. indic.      | EM&V plan |      |
| <b>Non-Residential (energy efficiency)</b> |  |                        |                |                           |  |                   |           |      |
| IX   | Agricultural Energy Efficiency           | VA                     | PUR-2020-00274 | Sep. 7, 2021              | 111,050                                    | O.31              | E.39      |      |
|  |  | NC                     | N/A            | N/A                       | N/A  | N/A               | N/A       |      |
|  | Building Automation System               | VA                     | PUR-2020-00274 | Sep. 7, 2021              | N/A  | O.32              | E.40      |      |
|  |  | NC                     | E-22, SUB 614  | Mar. 18, 2022             | N/A  | P.22              |           |      |
|  | Building Optimization                    | VA                     | PUR-2020-00274 | Sep. 7, 2021              | 290,074                                    | O.33              | E.41      |      |
|  |  | NC                     | E-22, SUB 615  | Mar. 18, 2022             | N/A  | P.21              |           |      |
|  | Engagement                               | VA                     | PUR-2020-00274 | Sep. 7, 2021              | N/A  | O.34              | E.42      |      |
|  |  | NC                     | E-22, SUB 616  | Mar. 18, 2022             | N/A  | P.23              |           |      |
|  | Prescriptive Enhanced                    | VA                     | PUR-2020-00274 | Sep. 7, 2021              | 21,707                                     | O.35              | E.36      |      |
|  |  | NC                     | E-22, SUB 617  | Mar. 18, 2022             | 1,539                                      | P.11              |           |      |
|  | <b>Non-Residential (demand response)</b> |                        |                |                           |  |                   |           |      |
|  | II                                       | Distributed Generation | VA             | Extension: PUR-2020-00274 | Sep. 7, 2021                               | 1163 (kW)         | O.42      | E.48 |
| NC   |  |                        | N/A            | N/A                       | N/A  | N/A               | N/A       |      |

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1.5.2 Closed programs

Table 1-5. Closed residential and income and age qualifying programs

| DSM phase                        | Closed program                   | State | Case/Docket               |               | Participant kWh/yr (through year-end 2023) | Performance indicators appendix |
|----------------------------------|----------------------------------|-------|---------------------------|---------------|--|---------------------------------|
|                                  |                                  |       | Number                    | Updated       |  |                                 |
| <b>Residential</b>               |                                  |       |                           |               |  |                                 |
| I                                | Lighting                         | VA    | PUE-2009-00081            | Mar. 24, 2010 | 28   | O.52                            |
|                                  |                                  | NC    | E-22, Sub 469             | Feb. 22, 2011 | 28   | P.26                            |
|                                  | Residential Smart Cooling Reward | VA    | Extension: PUR-2019-00201 | Jul. 30, 2020 | 0.53 (kW)                                  | O.41                            |
|                                  |                                  | NC    | E-22, Sub 465             | Feb. 22, 2011 | 0.53 (kW)                                  | P.24                            |
| II                               | Duct Sealing                     | VA    | PUE-2011-00093            | Apr. 30, 2012 | 232  | O.56                            |
|                                  |                                  | NC    | E-22, Sub 397             | Dec.16, 2013  | 242  | P.30                            |
|                                  | Heat Pump Tune-Up                | VA    | PUE-2011-00093            | Apr. 30, 2012 | 214  | O.54                            |
|                                  |                                  | NC    | E-22, Sub 499             | Dec. 17, 2013 | 229  | P.28                            |
|                                  | Heat Pump Upgrade                | VA    | PUE-2011-00093            | Apr. 30, 2012 | 758  | O.55                            |
|                                  |                                  | NC    | E-22, Sub 500             | Dec. 17, 2013 | 209  | P.29                            |
|                                  | Home Energy Check-Up             | VA    | PUE-2011-00093            | Apr. 30, 2012 | 628  | O.57                            |
|                                  |                                  | NC    | E-22, Sub 498             | Dec. 17, 2013 | 755  | P.31                            |
| IV                               | Appliance Recycling              | VA    | PUE-2014-00071            | Apr. 24, 2015 | 499  | O.58                            |
|                                  |                                  | NC    | N/A                       | N/A           | N/A  | N/A                             |
| V                                | Retail LED                       | VA    | N/A                       | N/A           | N/A  | N/A                             |
|                                  |                                  | NC    | E-22, Sub 539             | Dec. 20, 2016 | 21   | P.32                            |
| <b>Income and Age Qualifying</b> |                                  |       |                           |               |  |                                 |
| I                                | Residential Low Income           | VA    | PUE-2009-00081            | Mar. 24, 2010 | 528  | O.53                            |
|                                  |                                  | NC    | E-22, Sub 523             | Oct. 6, 2015  | 490  | P.27                            |
| IV                               | Residential IAQ Home Improvement | VA    | PUE-2014-00071            | Apr. 24, 2015 | 385  | O.66                            |
|                                  |                                  | NC    | Reopening: E-22 SUB       | Jun. 26, 2018 | 622  | P.40                            |





Table 1-6. Closed non-residential programs

| DSM phase              | Closed program               | State | Case/Docket    |               | Participant kWh/yr (through year-end 2023) | Performance indicators appendix |
|------------------------|------------------------------|-------|----------------|---------------|--|---------------------------------|
|                        |                              |       | Number         | Updated       |  |                                 |
| <b>Non-Residential</b> |                              |       |                |               |  |                                 |
| I                      | Commercial HVAC Upgrade      | VA    | PUE-2009-00081 | Mar. 24, 2010 | 47,361                                     | O.60                            |
|                        |                              | NC    | E-22, Sub 467  | Aug. 13, 2014 | 27,641                                     | P.34                            |
|                        | Commercial Lighting          | VA    | PUE-2009-00081 | Mar. 24, 2010 | 29,337                                     | O.59                            |
|                        |                              | NC    | E-22, Sub 469  | Aug. 13, 2014 | 58,372                                     | P.33                            |
| II                     | Duct Testing and Sealing     | VA    | PUE-2011-00093 | Apr. 30, 2012 | 15,491                                     | O.61                            |
|                        |                              | NC    | E-22, Sub 496  | Dec.17, 2013  | 12,621                                     | P.35                            |
|                        | Energy Audit                 | VA    | PUE-2011-00093 | Apr. 30, 2012 | 23,982                                     | O.62                            |
|                        |                              | NC    | E-22, Sub 495  | Dec. 16, 2013 | 12,838                                     | P.36                            |
| III                    | Heating & Cooling Efficiency | VA    | PUE-2013-00072 | Apr. 29, 2014 | 27,248                                     | O.63                            |
|                        |                              | NC    | E-22, Sub 507  | Oct. 27, 2014 | 2,062                                      | P.37                            |
|                        | Lighting Systems & Controls  | VA    | PUE-2013-00072 | Apr. 29, 2014 | 45,611                                     | O.64                            |
|                        |                              | NC    | E-22, Sub 508  | Oct. 27, 2014 | 15,090                                     | P.38                            |
|                        | Window Film                  | VA    | PUE-2013-00072 | Apr. 29, 2014 | 6,440                                      | O.65                            |
|                        |                              | NC    | E-22 Sub 509   | Oct. 16, 2018 | 6,974                                      | P.39                            |
| V                      | Small Business Improvement   | VA    | PUE-2015-00089 | Apr. 19, 2016 | 20,401                                     | O.67                            |
|                        |                              | NC    | E-22 Sub 538   | Oct. 26, 2016 | 24,235                                     | P.41                            |
| VI                     | Prescriptive                 | VA    | PUE-2016-00111 | Jun. 1, 2017  | 14,730                                     | O.68                            |
|                        |                              | NC    | E-22, SUB 543  | Oct. 16, 2017 | 13,410                                     | P.10                            |



### 1.5.3 Launching programs

Table 1-7. Residential and income and age qualifying programs launching in 2024

| DSM phase                        | Launching program                | State | Case/Docket               |               | Report appendices |           |
|----------------------------------|----------------------------------|-------|---------------------------|---------------|-------------------|-----------|
|                                  |                                  |       | Number                    | Updated       | Perf. indic.      | EM&V plan |
| <b>Residential</b>               |                                  |       |                           |               |                   |           |
| VIII                             | Home Retrofit Bundle             | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.6               | E.10      |
|                                  |                                  | NC    | E-22, SUB 683             | Jan. 22, 2024 | P.8               |           |
|                                  | Efficient Products Marketplace   | VA    | Extension: PUR-2022-00210 | Aug. 4, 2023  | O.2               | E.5       |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |
|                                  | Customer Engagement              | VA    | Extension: PUR-2022-00210 | Aug. 4, 2023  | O.48              | E.8       |
|                                  |                                  |       | N/A                       | N/A           | N/A               | N/A       |
| XI                               | Enhanced Home Retrofit           | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.6               | E.11      |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |
|                                  | Peak Time Rebate                 | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.51              | E.53      |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |
|                                  | Telematics Vehicle Charger Pilot | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.50              | E.52      |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |
| <b>Income and Age Qualifying</b> |                                  |       |                           |               |                   |           |
| X                                | Non-Residential IAQ              | VA    | PUR-2021-00247            | Aug. 10, 2022 | O.19              | E.24      |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |
|                                  | Residential IAQ Target Report    | VA    | PUR-2021-00247            | Aug. 10, 2022 | O.20              | E.25      |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |
| XI                               | Residential IAQ Bundle           | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.49              | E.26      |
|                                  |                                  | NC    | E-22, SUB 684             | Jan. 22, 2024 | N/A               |           |
|                                  | Non-Residential IAQ Bundle       | VA    | PUR-2022-00210            | Aug. 4, 2023  | O.46              | E.27      |
|                                  |                                  | NC    | N/A                       | N/A           | N/A               | N/A       |

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Table 1-8. Non-residential programs launching in 2024

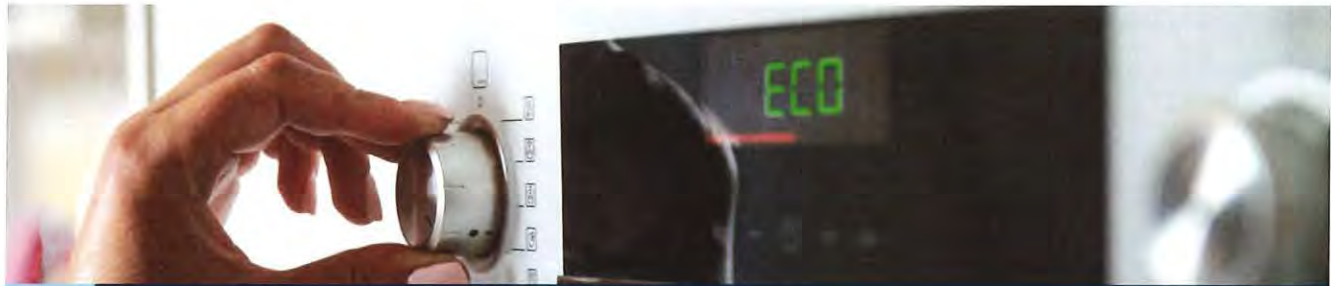
| DSM phase              | Launching program         | State | Case/Docket    |               | Report appendices |           |
|------------------------|---------------------------|-------|----------------|---------------|-------------------|-----------|
|                        |                           |       | Number         | Updated       | Perf. indic.      | EM&V plan |
| <b>Non-Residential</b> |                           |       |                |               |                   |           |
| IX                     | Enhanced Prescriptive     | VA    | PUR-2022-00210 | Aug. 4, 2023  | O.35              |           |
|                        |                           | NC    | E-22, SUB 682  | Jan. 22, 2024 | P.12              | E.37      |
|                        | Data Server Room          | VA    | PUR-2021-00247 | Aug. 10, 2022 | O.36              | E.43      |
|                        |                           | NC    | N/A            | N/A           | N/A               | N/A       |
|                        | Healthcare                | VA    | PUR-2021-00247 | Aug. 10, 2022 | O.37              | E.44      |
|                        |                           | NC    | N/A            | N/A           | N/A               | N/A       |
| X                      | Hotel and Lodging         | VA    | PUR-2021-00247 | Aug. 10, 2022 | O.38              | E.45      |
|                        |                           | NC    | N/A            | N/A           | N/A               | N/A       |
|                        | Small Business Behavioral | VA    | PUR-2021-00247 | Aug. 10, 2022 | O.39              | E.46      |
|                        |                           | NC    | N/A            | N/A           | N/A               | N/A       |
|                        | Voltage Optimization      | VA    | PUR-2021-00247 | Aug. 10, 2022 | O.40              | E.54      |
|                        |                           | NC    | N/A            | N/A           | N/A               | N/A       |
| XI                     | Custom                    | VA    | PUR-2022-00210 | Aug. 4, 2023  | 0.47              | E.47      |
|                        |                           | NC    | N/A            | N/A           | N/A               | N/A       |

### 1.6 Adjustments and/or corrections to prior years' calculations

DNV retrospectively adjusted and corrected winter coincident peak demand reduction values in the Residential Appliance Recycling Program (DSM Phase VII). These corrections were separate from the natural retrospective adjustments due to evaluation study findings. These adjustments are summarized in Table 1-2.

Table 1-2. Explanation of adjustments

| Correction   | Reason for correction   |
|--|---|
| <b>The Residential Appliance Recycling Program (Phase VII) Program 2022 winter demand reduction (kW) was adjusted.</b> | The winter demand reduction (kW) values were omitted in the program year 2022 report, though there were specifications to calculate these values for this program in the PY2022 Technical Reference Manual (TRM), listed in Appendix F. The winter demand reduction (kW) was reported as 0 kW in 2022. Prior to 2021, winter demand reduction (kW) was not calculated for any programs. These values are displayed as "-" or dashes to indicate they were not a metric being estimated. In 2021, the program paused and had no participation, so winter demand reduction was 0 kW. The 2022 gross winter demand reduction (kW) increased from 0 kW to 70 kW and 2022 net winter demand reduction (kW) increased from 0 to 42 kW after the correction. |



**2 ENERGY EFFICIENCY – RESIDENTIAL**

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**Table 2-1. Residential energy efficiency programs open to enrollment or had savings in 2023**

| DSM Phase | Acronym      | Program                                  | VA | NC |
|-----------|--------------|--|----|----|
| VII       | RAR2         | Appliance Recycling                      | ✓  | ✓  |
|           | REEC<br>REE2 | Efficient Products Marketplace           | ✓  | ✓  |
|           | RTHO         | Home Energy Assessment                   | ✓  | ✓  |
| VIII      | RCEB         | Customer Engagement                      | ✓  |    |
|           | REVEE        | EV Energy Efficiency and Demand Response | ✓  |    |
|           | RHRF         | Home Retrofit                            | ✓  | ✓  |
|           | RKTS         | Kits                                     | ✓  | ✓  |
|           | RMHP         | Manufactured Housing                     | ✓  |    |
|           | RMFP         | Multifamily                              | ✓  |    |
|           | RNCR         | New Construction                         | ✓  |    |
|           | RTEE         | Thermostat Purchase and WeatherSmart     | ✓  | ✓  |
| IX        | RSMH         | Smart Home                               | ✓  | ✓  |
|           | RVAU         | Virtual Energy Audit                     | ✓  | ✓  |
|           | RWEE         | Water Savings                            | ✓  | ✓  |

Figure 2-1 and Figure 2-2 show the cumulative count of residential program participation and gross annualized energy savings in the two states, for the programs listed above, at the county level, through December 31, 2023. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation in descending order are Fairfax, Chesterfield, and Virginia Beach City . In North Carolina, Dare, Currituck, and Halifax counties have the highest participation

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Chesterfield, and Virginia Beach City. In North Carolina, Dare, Currituck, and Halifax counties have the most energy savings.



Figure 2-1. Virginia and North Carolina Residential Efficient Products Program Participation, by County

Participants

- A. Less than 10
- B. 10 - 100
- C. 100 - 1,000
- D. 1,000 - 3,000
- E. More than 3,000

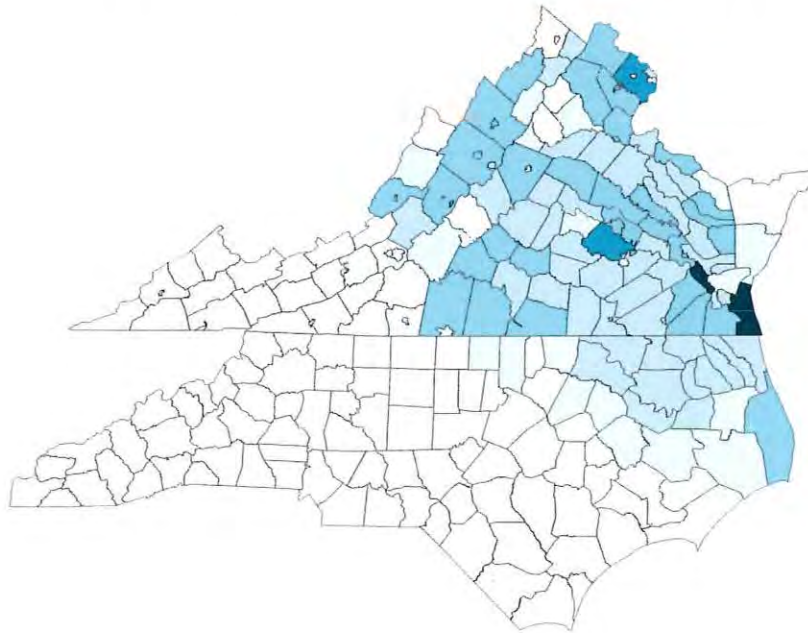
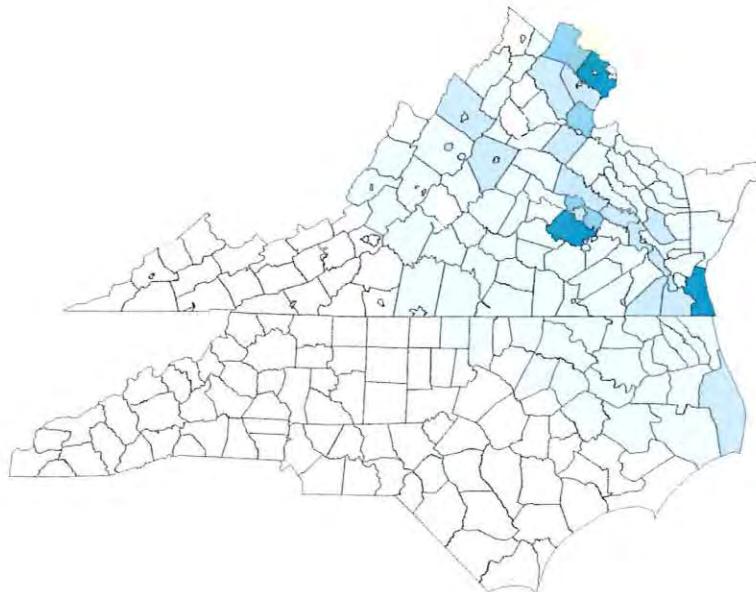


Figure 2-2. Virginia and North Carolina Residential Efficient Products Program Gross Annualized Energy Savings, by County

Gross Total Electric Impact

- A. Less than 100 MWh/year
- B. 100 - 500 MWh/year
- C. 500 MWh/year - 1 GWh/year
- D. 1 - 5 GWh/year
- E. More than 5 GWh/year



# RESIDENTIAL APPLIANCE RECYCLING

2019-2023

419 kWh/yr Average Net Savings Per Participant

## Eligibility

- Owner of an operational refrigerator or freezer that is at least 10 years old and between 10 and 32 cubic feet

Incentivized **6,561** units, **16%** of planned units. Starting in June 2023, participation slowed due to operational challenges posed by the vendor, ARCA. ARCA ultimately ceased operations.



## Measures

- Refrigerator recycling
- Freezer recycling



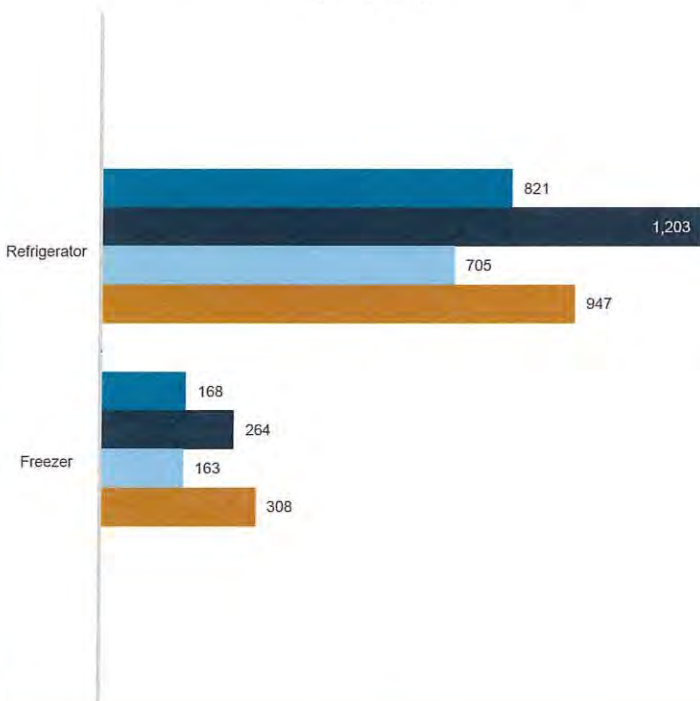
Achieved net annual energy savings of **2,748 MWh/year**, **14%** of planned energy savings



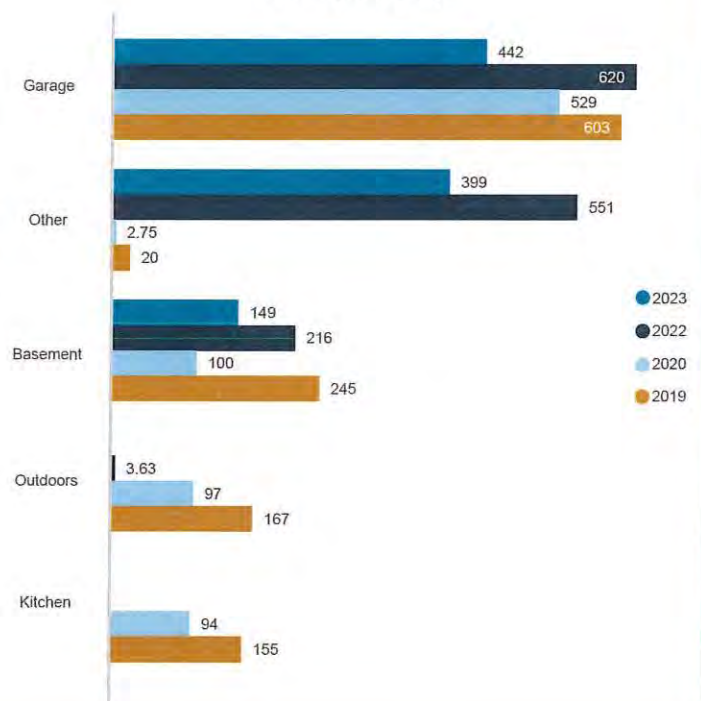
Spent **28%** of planned expenditures

| Category                                       | 2019      | 2020      | 2021    | 2022      | 2023      | Lifetime   |
|--|-----------|-----------|---------|-----------|-----------|------------|
| Total Program Cost (\$)                        | 384,884   | 473,111   | 222,880 | 702,471   | 585,278   | 2,368,625  |
| Total Program Participants (#)                 | 1,579     | 972       | 0       | 2,478     | 1,532     | 6,561      |
| Total Gross Incremental Savings (kWh/yr)       | 1,255,513 | 868,091   | 0       | 1,467,578 | 988,970   |            |
| Total Net Incremental Savings (kWh/yr)         | 753,308   | 520,855   | 0       | 880,547   | 593,382   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 188       | 130       | 0       | 220       | 148       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 113       | 78        | 0       | 132       | 89        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0         | 0         | 0       | 70        | 47        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0         | 0         | 0       | 42        | 28        |            |
| Total Net Lifetime Savings (kWh)               | 119,309   | 1,206,460 | 0       | 4,189,246 | 6,782,400 | 21,991,994 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 113       | 191       | 0       | 323       | 411       | 411        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0         | 0         | 0       | 42        | 70        | 70         |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY LOCATION TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, SUB 569


## RESIDENTIAL APPLIANCE RECYCLING

2019-2023

429 kWh/yr Average Net Savings Per Participant


### Eligibility

- Owner of an operational refrigerator or freezer that is at least 10 years old and between 10 and 32 cubic feet

 Incentivized **41 units, 2%** of planned units. Starting in June 2023, participation slowed due to operational challenges posed by the vendor, ARCA. ARCA ultimately ceased operations.

### Measures

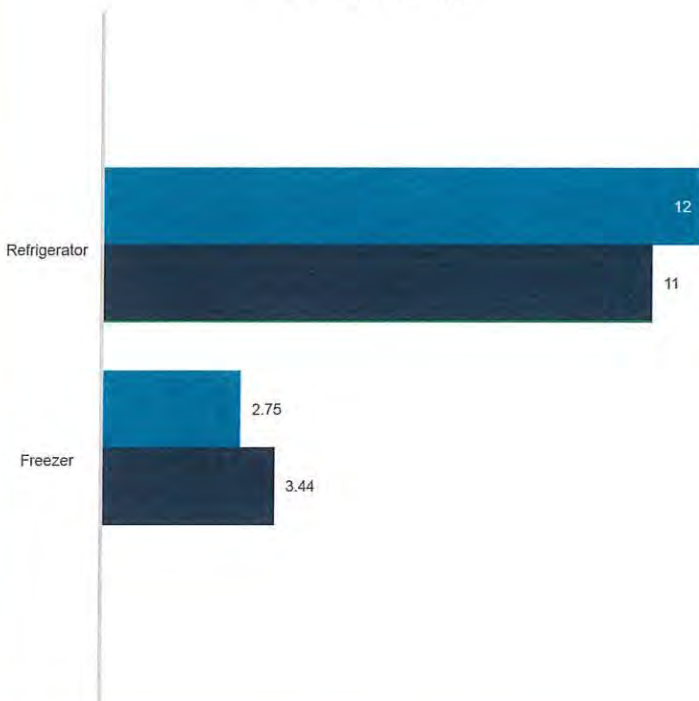
- Refrigerator recycling
- Freezer recycling

 Achieved net annual energy savings of **17,592 kWh/year, 2%** of planned energy savings

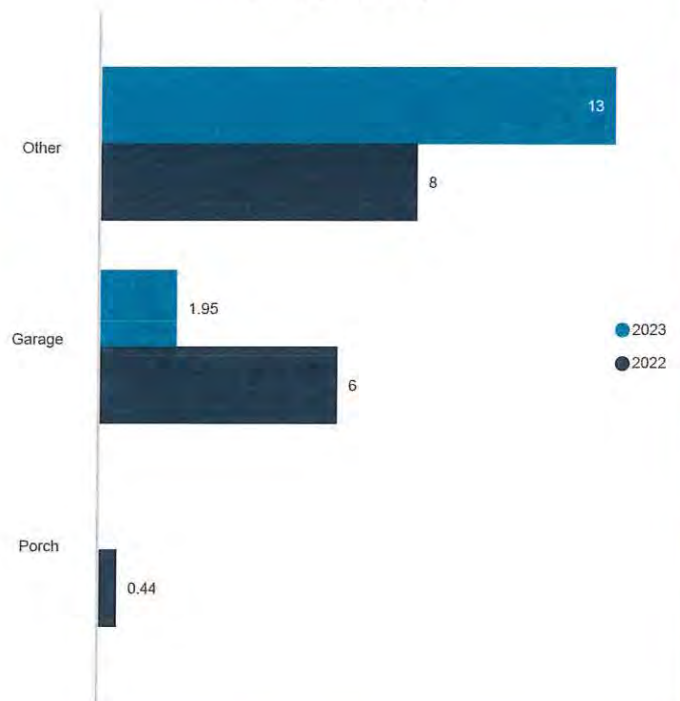
 Spent **17%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021   | 2022   | 2023   | Lifetime |
|--|------|--------|--------|--------|--------|----------|
| Total Program Cost (\$)                        | 0    | 17,270 | 11,552 | 25,314 | 24,687 | 78,823   |
| Total Program Participants (#)                 | 0    | 0      | 0      | 19     | 22     | 41       |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 0      | 14,260 | 15,059 |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 0      | 8,556  | 9,036  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 0      | 2      | 2      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 1      | 1      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 1      | 1      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 0      | 4,600  | 20,166 | 140,781  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 1      | 3      | 3        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 1      | 1        |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)



# Virginia

Case #: PUE-2018-00168

## RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE

2019-2023

17 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission and authorization to complete the rebate submission
- New ENERGY STAR® products



Incentivized **14,829,174** units, **111%** of planned units.



Achieved net annual energy savings of **253,744 MWh/year**, **68%** of planned energy savings



Spent **86%** of planned expenditures

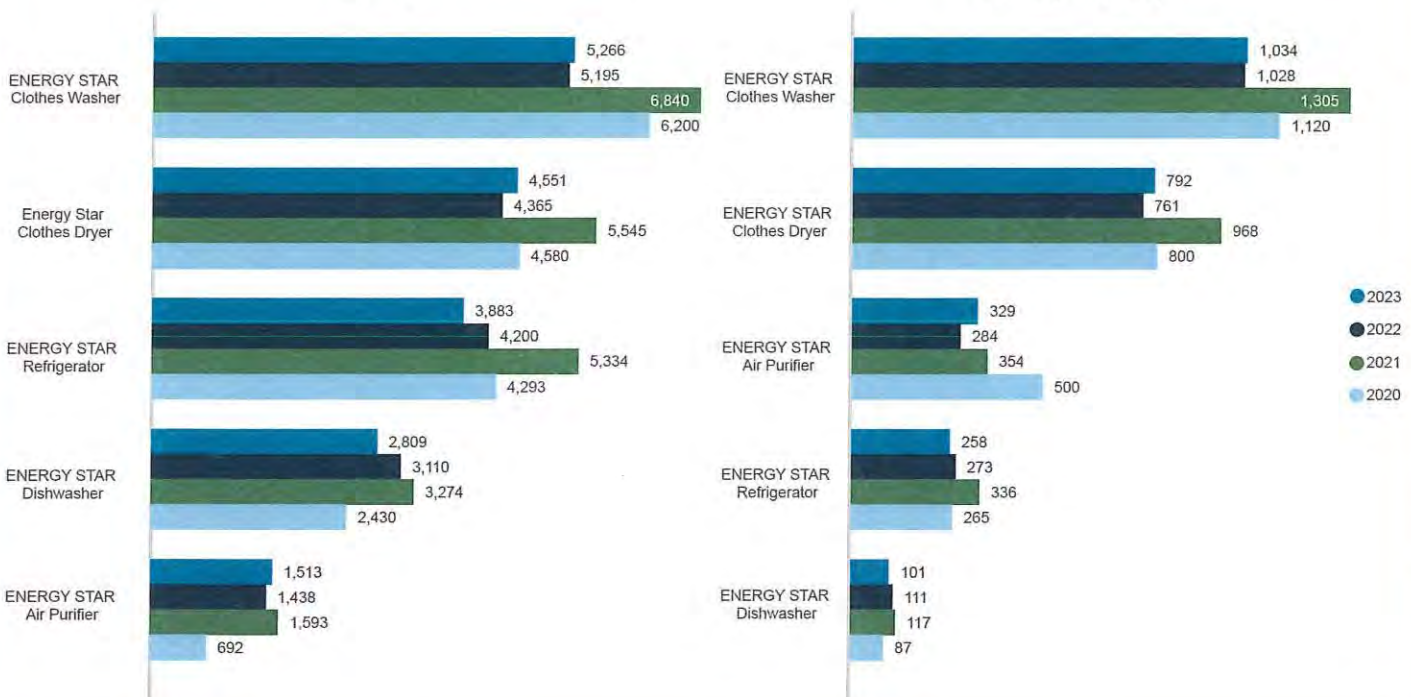
### Measures

- LEDs lamps
- Refrigerator
- Freezer
- Clothes washer
- Clothes dryer
- Room air purifier
- Dehumidifier
- Dishwasher

| Category                                       | 2019       | 2020       | 2021        | 2022        | 2023      | Lifetime      |
|--|------------|------------|-------------|-------------|-----------|---------------|
| Total Program Cost (\$)                        | 4,636,049  | 8,063,058  | 8,459,198   | 9,952,004   | 4,134,018 | 35,244,327    |
| Total Program Participants (#)                 | 2,785,850  | 2,596,966  | 4,263,855   | 5,163,385   | 19,118    | 14,829,174    |
| Total Gross Incremental Savings (kWh/yr)       | 81,119,512 | 89,881,928 | 122,317,496 | 150,318,593 | 2,608,640 |               |
| Total Net Incremental Savings (kWh/yr)         | 56,783,659 | 60,072,654 | 60,277,598  | 75,613,324  | 996,488   |               |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 7,421      | 8,295      | 11,274      | 13,821      | 305       |               |
| Peak Net Inc. Summer Demand Reduction (kW)     | 5,195      | 5,532      | 5,549       | 6,946       | 118       |               |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0          | 0          | 23,472      | 29,038      | 147       |               |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0          | 0          | 11,620      | 14,653      | 59        |               |
| Total Net Lifetime Savings (kWh)               | 10,727,983 | 97,722,792 | 243,614,941 | 458,373,267 | 472,882   | 4,210,248,413 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 5,195      | 10,726     | 16,276      | 23,221      | 118       | 23,340        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0          | 0          | 11,620      | 26,274      | 59        | 26,332        |

TOTAL PARTICIPANTS BY APPLIANCE MEASURE TOP 5

TOTAL SAVINGS BY APPLIANCE MEASURE TOP 5 (MWH/YR)





# North Carolina

Docket #: E-22, SUB 568

## RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE

2019-2023

17 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in North Carolina
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission and authorization to complete the rebate submission
- New ENERGY STAR® products



Incentivized **288,004** units, **43%** of planned units.



Achieved net annual energy savings of **4,824 MWh/year**, **25%** of planned energy savings



Spent **51%** of planned expenditures

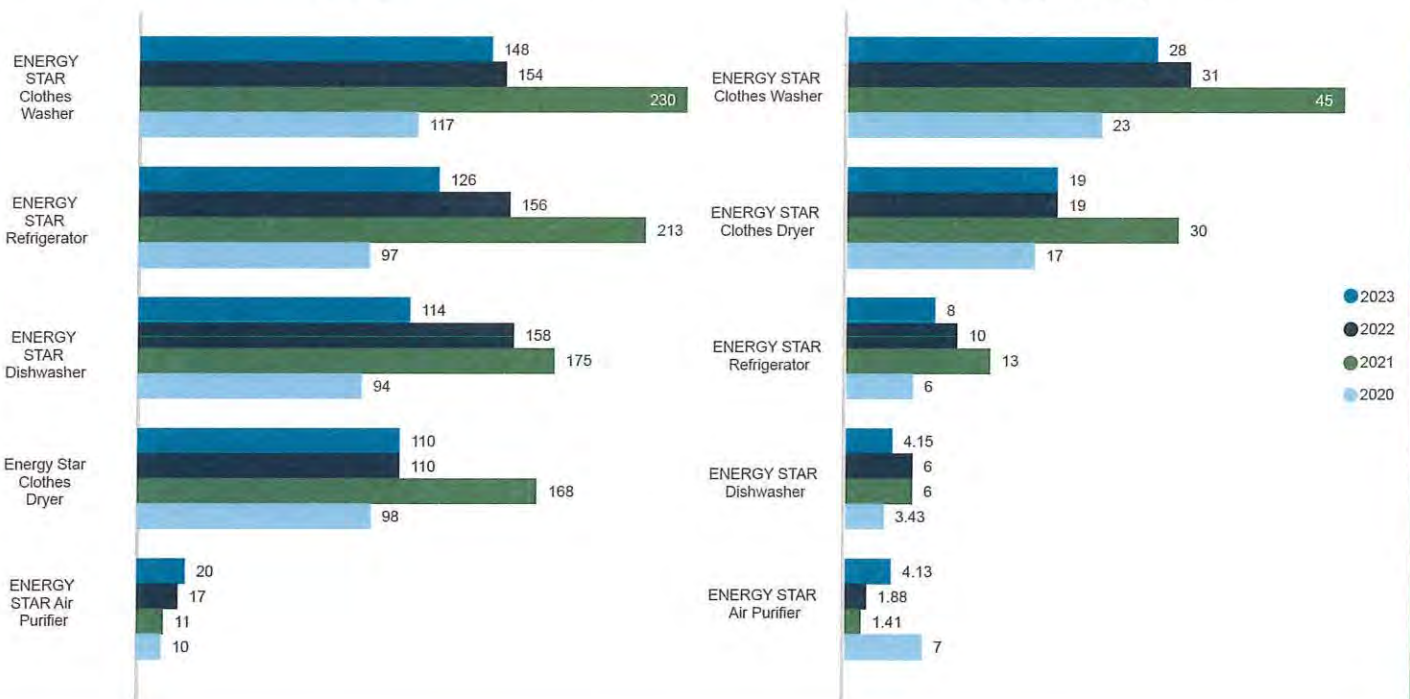
### Measures

- LEDs lamps
- Refrigerator
- Freezer
- Clothes washer
- Clothes dryer
- Room air purifier
- Dehumidifier
- Dishwasher

| Category                                       | 2019 | 2020      | 2021      | 2022      | 2023    | Lifetime   |
|--|------|-----------|-----------|-----------|---------|------------|
| Total Program Cost (\$)                        | 0    | 238,201   | 386,515   | 308,435   | 157,460 | 1,090,612  |
| Total Program Participants (#)                 | 0    | 86,493    | 116,668   | 84,301    | 542     | 288,004    |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 2,707,492 | 3,582,113 | 2,828,480 | 65,245  |            |
| Total Net Incremental Savings (kWh/yr)         | 0    | 1,796,481 | 1,676,053 | 1,327,228 | 24,084  |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 249       | 330       | 261       | 8       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 165       | 154       | 122       | 3       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0         | 686       | 543       | 3       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0         | 323       | 256       | 1       |            |
| Total Net Lifetime Savings (kWh)               | 0    | 816,795   | 3,492,945 | 7,515,976 | 11,222  | 80,007,282 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 165       | 319       | 441       | 3       | 444        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0         | 323       | 579       | 1       | 580        |

TOTAL PARTICIPANTS BY APPLIANCE MEASURE TOP 5

TOTAL SAVINGS BY APPLIANCE MEASURE TOP 5 (MWH/YR)



# Virginia

Case #: PUE-2018-00168

## RESIDENTIAL HOME ENERGY ASSESSMENT

2019-2023

576 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia living in a single-family detached or attached residence
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **23,265** customers, **17%** of planned participation



Achieved net annual energy savings of **13,389 MWh/year**, **27%** of planned energy savings



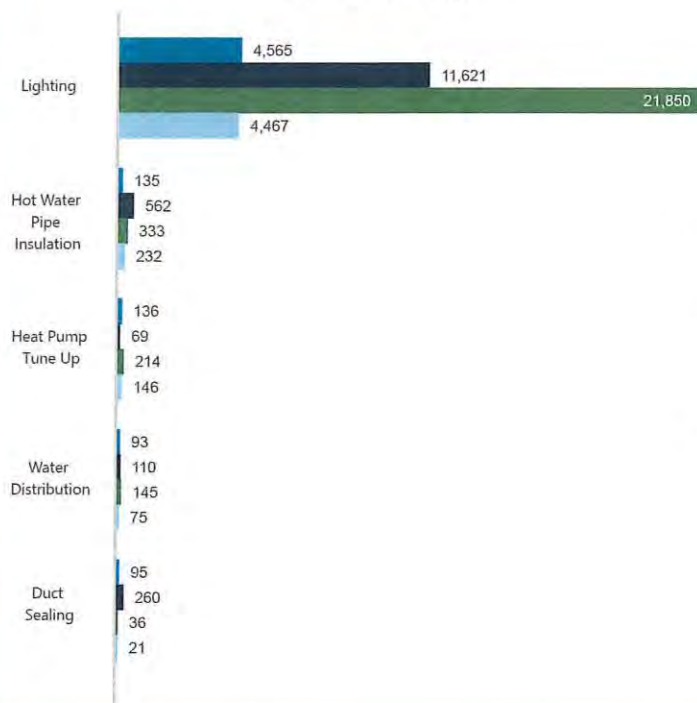
Spent **92%** of planned expenditures

### Measures

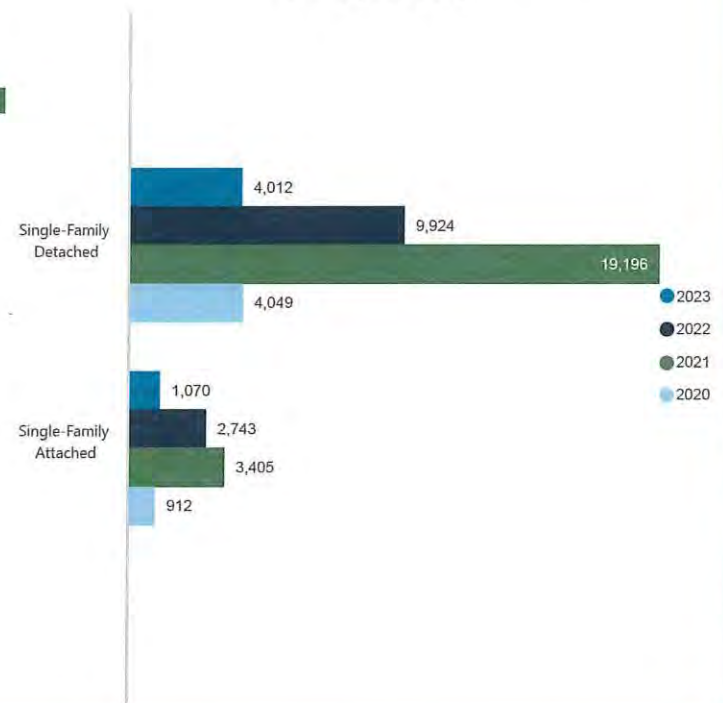
- Direct install lighting
- Cool roof
- Hot water ENERGY STAR appliances
- Faucets aerators
- Low flow showerheads
- Heat pump tune-up and upgrade
- Duct sealing and duct insulation

| Category                                       | 2019    | 2020      | 2021       | 2022       | 2023       | Lifetime    |
|--|---------|-----------|------------|------------|------------|-------------|
| Total Program Cost (\$)                        | 715,145 | 2,981,049 | 7,652,974  | 4,661,476  | 3,581,578  | 19,592,223  |
| Total Program Participants (#)                 | 0       | 2,738     | 9,917      | 6,509      | 4,101      | 23,265      |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 4,960,666 | 22,601,069 | 12,667,811 | 5,081,335  |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 1,091,347 | 5,198,246  | 5,067,125  | 2,032,534  |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 411       | 1,414      | 1,025      | 563        |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 90        | 325        | 410        | 225        |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0         | 3,163      | 1,724      | 1,085      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0         | 728        | 690        | 434        |             |
| Total Net Lifetime Savings (kWh)               | 0       | 480,008   | 4,288,514  | 13,252,805 | 25,906,809 | 167,404,184 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 90        | 416        | 826        | 1,051      | 1,051       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0         | 728        | 1,417      | 1,851      | 1,851       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 567

## RESIDENTIAL HOME ENERGY ASSESSMENT

2019-2023

476 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in the North Carolina living in a single-family detached or attached residence
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **75** customers, 1% of planned participation



Achieved net annual energy savings of **35,731 kWh/year**, 1% of planned energy savings



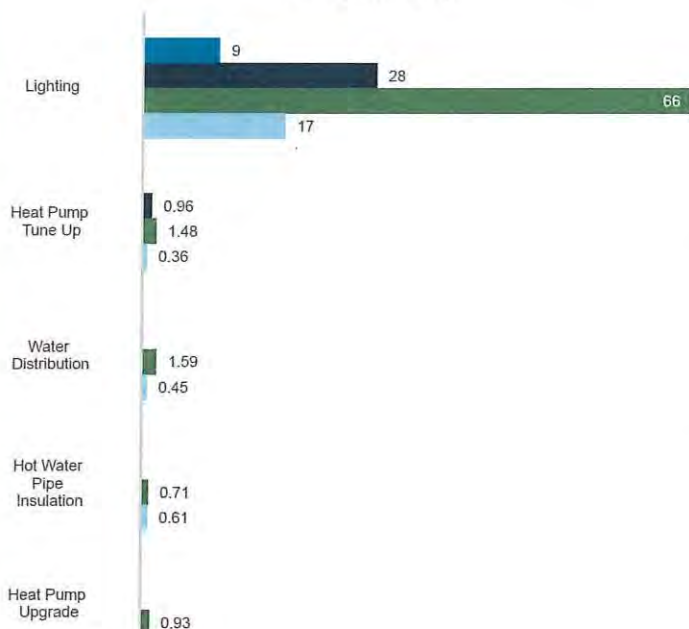
Spent **37%** of planned expenditures

### Measures

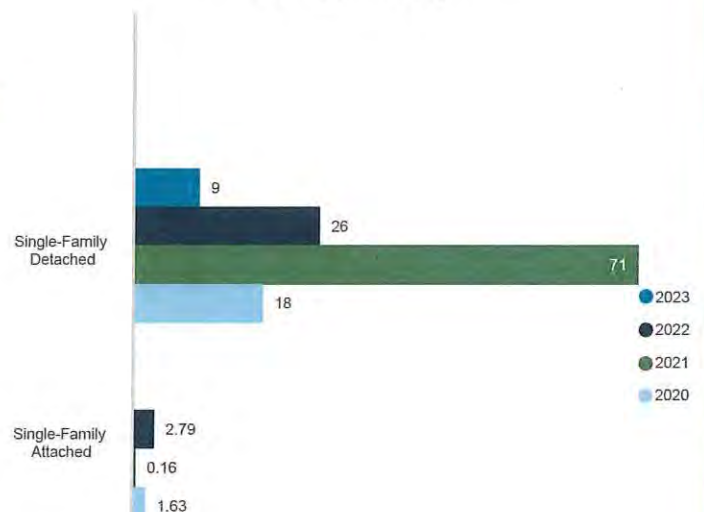
- Direct install lighting
- Cool roof
- Hot water ENERGY STAR appliances
- Faucets aerators
- Low flow showerheads
- Heat pump tune-up and upgrade
- Duct sealing and duct insulation

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime |
|--|------|--------|---------|---------|---------|----------|
| Total Program Cost (\$)                        | 0    | 96,955 | 120,947 | 108,763 | 114,518 | 441,184  |
| Total Program Participants (#)                 | 0    | 17     | 32      | 18      | 8       | 75       |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 19,413 | 70,833  | 28,587  | 9,334   |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 4,271  | 16,292  | 11,435  | 3,733   |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 1      | 4       | 2       | 1       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 1       | 1       | 0       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 10      | 4       | 2       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 2       | 2       | 1       |          |
| Total Net Lifetime Savings (kWh)               | 0    | 850    | 13,203  | 37,620  | 72,655  | 446,780  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 1       | 2       | 2       | 2        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 2       | 4       | 5       | 5        |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL CUSTOMER ENGAGEMENT

2020-2023

19 kWh/yr Average Net Savings Per Participant

### Eligibility

- Report recipients are selected to participate using a randomized control trial (RCT) experimental design



Enrolled **256,468** customers, **99%** of planned participation



Achieved net annual energy savings of **15,635 MWh/year**, **11%** of planned energy savings



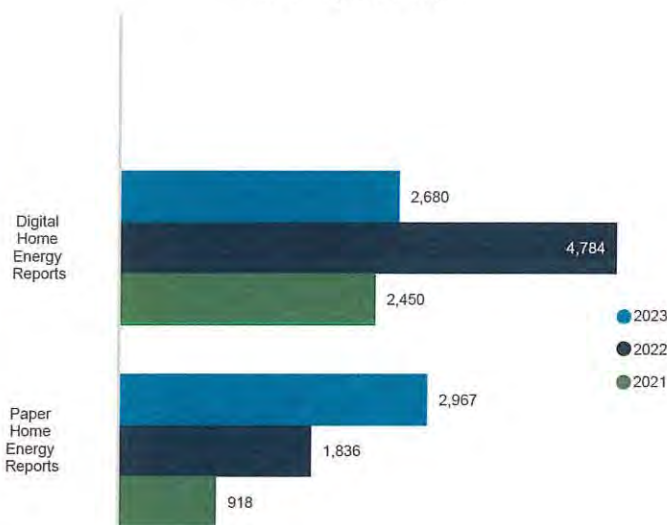
Spent **90%** of planned expenditures

### Measures

- Monthly digital or paper home energy reports

| Category                                       | 2019 | 2020    | 2021       | 2022       | 2023       | Lifetime   |
|--|------|---------|------------|------------|------------|------------|
| Total Program Cost (\$)                        |      | 162,614 | 2,012,981  | 1,749,425  | 1,157,588  | 5,082,608  |
| Total Program Participants (#)                 |      | 0       | 286,456    | 263,463    | 256,468    | 806,387    |
| Total Gross Incremental Savings (kWh/yr)       |      | 0       | 42,102,743 | 38,940,500 | 33,218,144 |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0       | 3,368,219  | 6,619,885  | 5,647,085  |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0       | 0          | 0          | 0          |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0       | 0          | 0          | 0          |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0       | 0          | 0          | 0          |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0       | 0          | 0          | 0          |            |
| Total Net Lifetime Savings (kWh)               |      | 0       | 2,689,758  | 8,859,710  | 14,421,908 | 15,822,112 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0       | 0          | 0          | 0          | 0          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0       | 0          | 0          | 0          | 0          |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



• The SCC approved the Customer Engagement Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL ELECTRIC VEHICLE ENERGY EFFICIENCY

2020-2023

104 kWh/yr Average Net Savings Per Participant

### Eligibility

- Residential customers in single family or detached homes
- Customers must have WiFi service and be responsible for the electric bill



Enrolled **638** customers, **26%** of planned participation



Achieved net annual energy savings of **66,407 kWh/year**, **7%** of planned energy savings



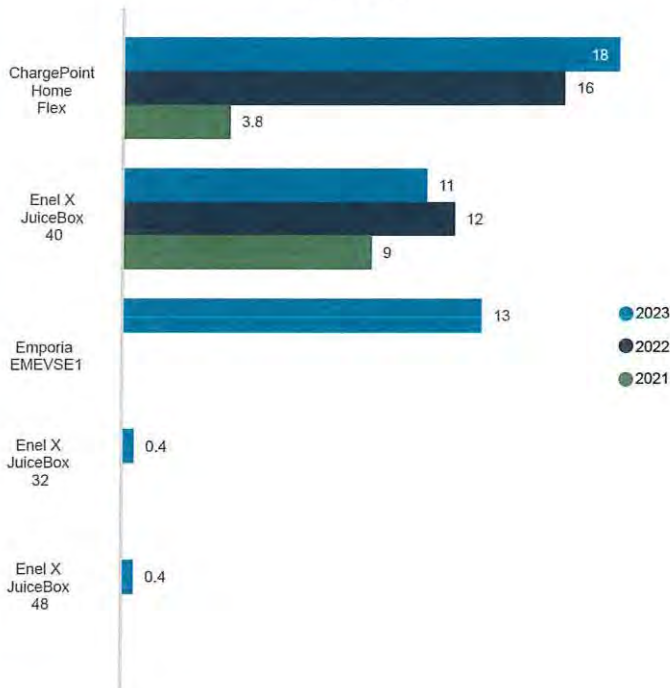
Spent **55%** of planned expenditures

### Measures

- Rebate for Level 2 EV chargers

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023   | Lifetime |
|--|------|--------|---------|---------|--------|----------|
| Total Program Cost (\$)                        |      | 14,517 | 282,385 | 277,166 | 83,768 | 657,836  |
| Total Program Participants (#)                 |      | 0      | 95      | 205     | 338    | 638      |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 12,379  | 27,255  | 43,375 |          |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 9,903   | 21,804  | 34,700 |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 0       | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 0       | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 0       | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 0       | 0      |          |
| Total Net Lifetime Savings (kWh)               |      | 0      | 1,898   | 20,914  | 68,389 | 664,223  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 0       | 0      | 0        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 0       | 0      | 0        |

**TOTAL SAVINGS BY CHARGER MODEL (MWH/YR)**



# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL HOME RETROFIT

2020-2023

2,061 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia living in a single-family home or townhome
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- Work must be completed by a participating contractor

### Measures

- Walk-through audit of customer home, direct install measures, and recommendations for additional home energy improvements
- Domestic hot water efficiency improvements
- LED lamps
- Tune-up of heat pump system and/or central AC
- Smart thermostats
- Attic and crawlspace insulation



Enrolled **193** customers, **4%** of planned participation



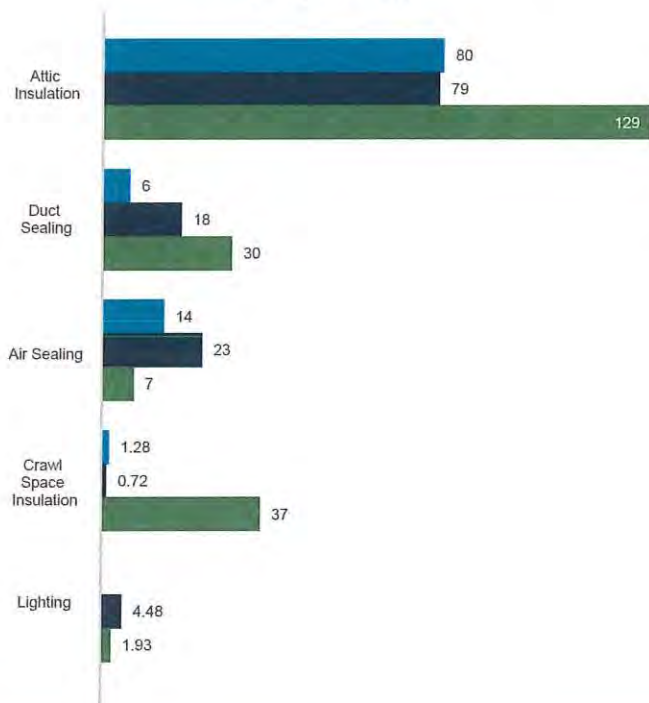
Achieved net annual energy savings of **397,731 kWh/year**, **4%** of planned energy savings



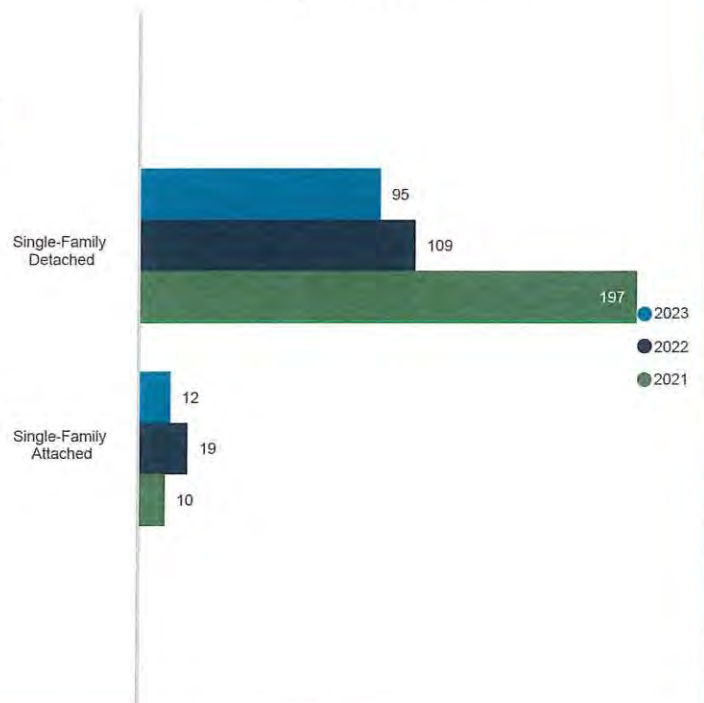
Spent **50%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|--|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 56,887 | 865,549 | 852,714 | 904,306 | 2,679,455 |
| Total Program Participants (#)                 |      | 0      | 99      | 50      | 44      | 193       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 207,565 | 127,675 | 106,684 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 186,809 | 114,907 | 96,015  |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 68      | 30      | 27      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 62      | 27      | 24      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 75      | 44      | 35      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 68      | 40      | 31      |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 36,630  | 273,273 | 609,309 | 9,149,168 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 62      | 89      | 113     | 113       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 68      | 107     | 138     | 138       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
(MWH/YR)



# North Carolina

Docket #: E-22, Sub 593

## RESIDENTIAL HOME RETROFIT

2020-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in North Carolina living in a single-family home or townhome
- Customer that is responsible for electric bill and either owns the home or is otherwise able to secure permission to complete measures
- Work must be completed by a participating contractor

### Measures

- Walk-through audit of customer home, direct install measures, and recommendations for additional home energy improvements
- Domestic hot water efficiency improvements
- LED lamps
- Tune-up of heat pump system and/or central AC
- Smart thermostats
- Attic and crawlspace insulation



Enrolled **0** customers, **0%** of planned participation



Achieved net annual energy savings of **0 kWh/year**, **0%** of planned energy savings



Spent **41%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022   | 2023   | Lifetime |
|--|------|------|--------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      | 35,738 | 48,397 | 50,642 | 134,778  |
| Total Program Participants (#)                 |      |      | 0      | 0      | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 0      | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 0      | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 0      | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 0      | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 0      | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0      | 0      |          |

# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL KITS

2020-2023

74 kWh/yr Average Net Savings Per Participant

### Eligibility

- New customer accounts in Virginia
- To receive more than the basic energy efficiency kit, customers must confirm their address and account status as well as answer a questionnaire



Enrolled **86,301** customers, **102%** of planned participation



Achieved net annual energy savings of **6,363 MWh/year**, **28%** of planned energy savings



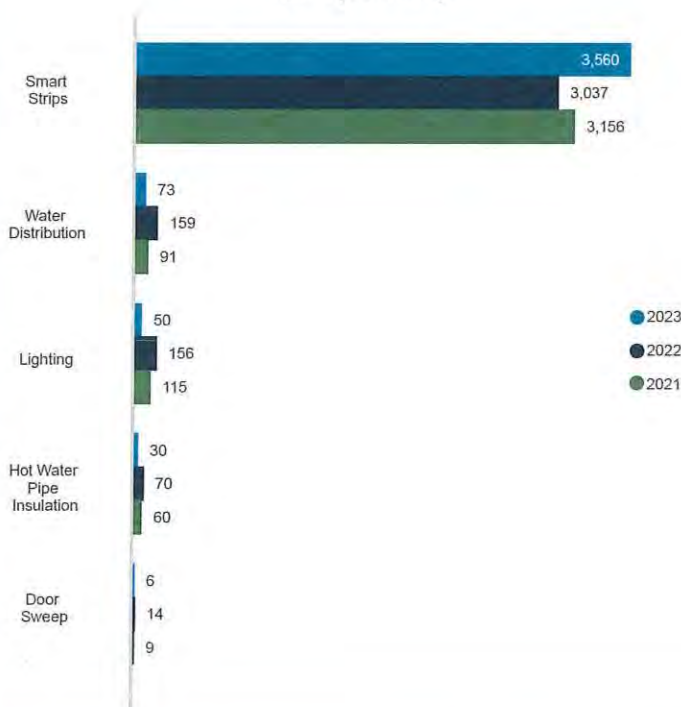
Spent **68%** of planned expenditures

### Measures

- Welcome kit with a tier 1 advanced power strip and educational insert informing customers how to manage their energy use
- Low-flow showerheads
- Aerators
- Water heater pipe insulation
- LED lamps
- Door and window weather stripping, door sweeps

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023      | Lifetime   |
|--|------|--------|-----------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      | 36,118 | 1,318,034 | 1,232,247 | 1,360,051 | 3,946,449  |
| Total Program Participants (#)                 |      | 0      | 28,113    | 26,790    | 31,398    | 86,301     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 3,442,999 | 3,439,997 | 3,721,439 |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 2,065,800 | 2,063,998 | 2,232,864 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 302       | 301       | 329       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 181       | 181       | 197       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 335       | 332       | 342       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 201       | 199       | 205       |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 576,373   | 3,532,892 | 8,542,827 | 36,505,583 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 181       | 362       | 560       | 560        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 201       | 400       | 606       | 606        |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)





# North Carolina

Docket #: E-22, Sub 592

## RESIDENTIAL KITS

2020-2023

73 kWh/yr Average Net Savings Per Participant

### Eligibility

- New customer accounts in North Carolina
- To receive more than the basic energy efficiency kit, customers must confirm their address and account status as well as answer a questionnaire



Enrolled **4,268** customers, **79%** of planned participation

### Measures

- Welcome kit with a tier 1 advanced power strip and educational insert informing customers how to manage their energy use
- Low-flow showerheads
- Aerators
- Water heater pipe insulation
- LED lamps
- Door and window weather stripping, door sweeps



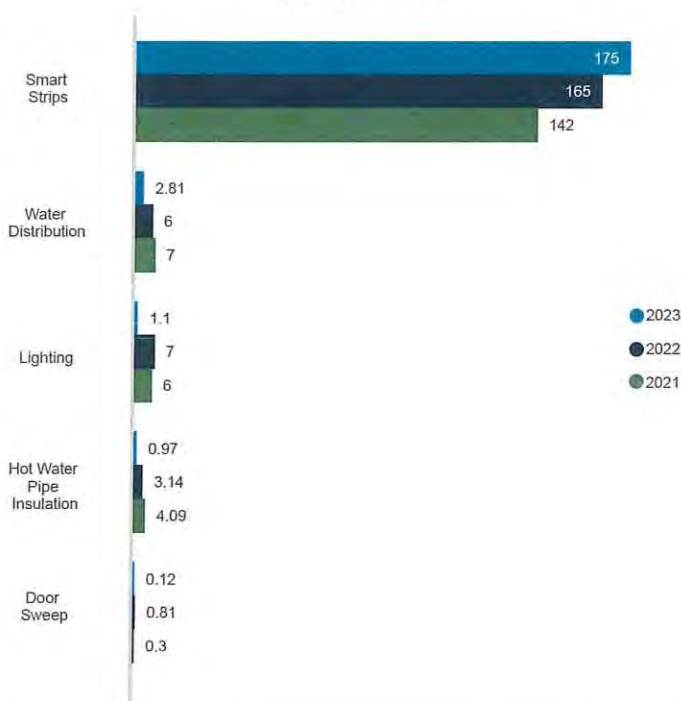
Achieved net annual energy savings of **313,404 kWh/year**, **22%** of planned energy savings



Spent **55%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021    | 2022    | 2023    | Lifetime  |
|--|------|------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 57,116  | 69,433  | 72,060  | 198,609   |
| Total Program Participants (#)                 |      |      | 1,264   | 1,453   | 1,551   | 4,268     |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 159,580 | 182,428 | 180,331 |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 95,748  | 109,457 | 108,199 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 14      | 16      | 16      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 8       | 10      | 10      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 15      | 18      | 16      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 9       | 11      | 10      |           |
| Total Net Lifetime Savings (kWh)               |      |      | 28,571  | 170,570 | 415,902 | 1,796,097 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 8       | 18      | 28      | 28        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 9       | 20      | 30      | 30        |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL MANUFACTURED HOUSING

2020-2023

193 kWh/yr Average Net Savings Per Participant

### Eligibility

- Customer must be a permanent resident of a manufactured home
- Customers must be responsible for the electric bill and own the residence or are able to secure permission from the owner to perform the recommended improvements



Enrolled **560** customers, **10%** of planned participation



Achieved net annual energy savings of **108,033 kWh/year**, **1%** of planned energy savings



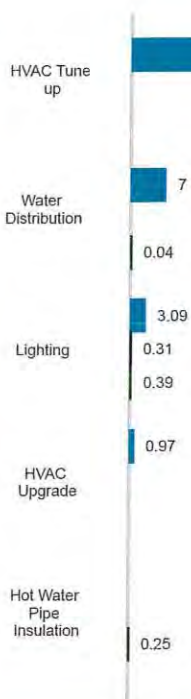
Spent **43%** of planned expenditures

### Measures

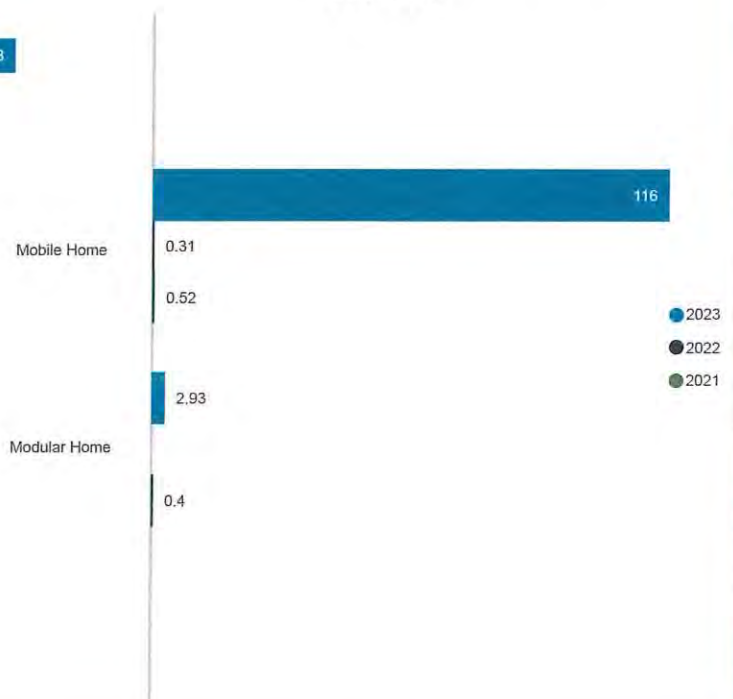
- Home energy audit covering all energy systems and envelope of the manufactured home
- Review of home energy audit between auditor and homeowner
- Installation of the most comprehensive set of energy efficiency measures recommended by audit results
- Installation of measures depends on homeowner agreement

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|--|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 49,716 | 642,418 | 627,383 | 699,057 | 2,018,574 |
| Total Program Participants (#)                 |      | 0      | 3       | 3       | 554     | 560       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 916     | 310     | 118,811 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 824     | 279     | 106,930 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 0       | 45      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 0       | 40      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 0       | 51      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 0       | 46      |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 60      | 998     | 44,804  | 589,764   |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 0       | 40      | 40        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 0       | 46      | 46        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE (MWH/YR)



# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL MULTIFAMILY

2020-2023

204 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia
- Customer that is responsible for electric bill and either owns the property or is otherwise able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **2,916** customers, **8%** of planned participation



Achieved net annual energy savings of **594,717 kWh/year**, **2%** of planned energy savings



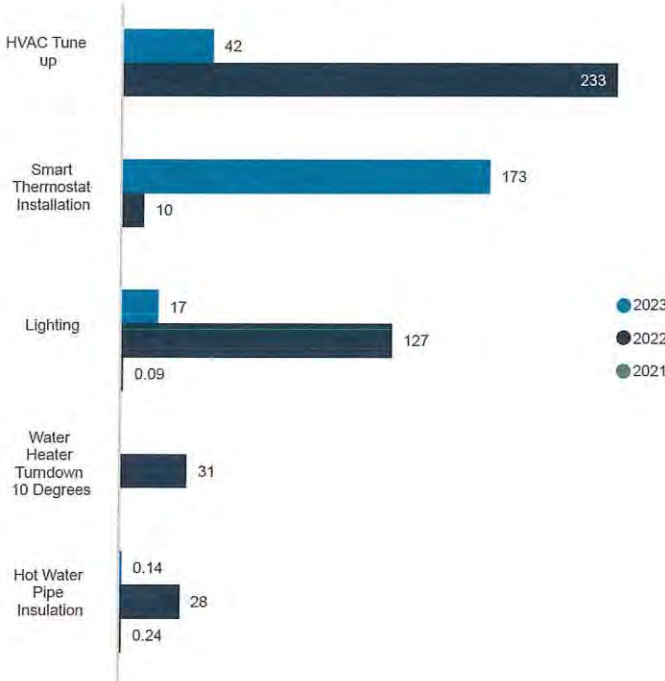
Spent **36%** of planned expenditures

### Measures

- On-site energy assessment of tenant units
- Pipe insulation
- LED lamps
- Tune-up of heat pump system and/or central AC
- Installation of smart thermostats
- Air sealing, duct sealing, attic insulation
- Installation of ENERGY STAR® washers and dryers

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|--|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 28,940 | 629,586 | 768,978 | 774,765 | 2,202,269 |
| Total Program Participants (#)                 |      | 0      | 9       | 1,634   | 1,273   | 2,916     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 335     | 428,505 | 231,957 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 301     | 385,655 | 208,761 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 107     | 16      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 96      | 15      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 169     | 29      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 152     | 26      |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 15      | 157,793 | 633,329 | 5,014,980 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 96      | 111     | 111       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 152     | 178     | 178       |

**TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)**



# RESIDENTIAL NEW CONSTRUCTION

2020-2023

1,931 kWh/yr Average Net Savings Per Participant

## Eligibility

- New homes being constructed that are ENERGY STAR® certified
- Home must receive electric service on a residential rate schedule
- Incentive recipient must be the homebuilder
- Eligible homes can be single family attached, single family detached, or two-over-two condos

## Measures

- Shell improvements
- HVAC performance
- Lighting and appliances
- Domestic hot water measures



Enrolled **6,503** customers, **48%** of planned participation



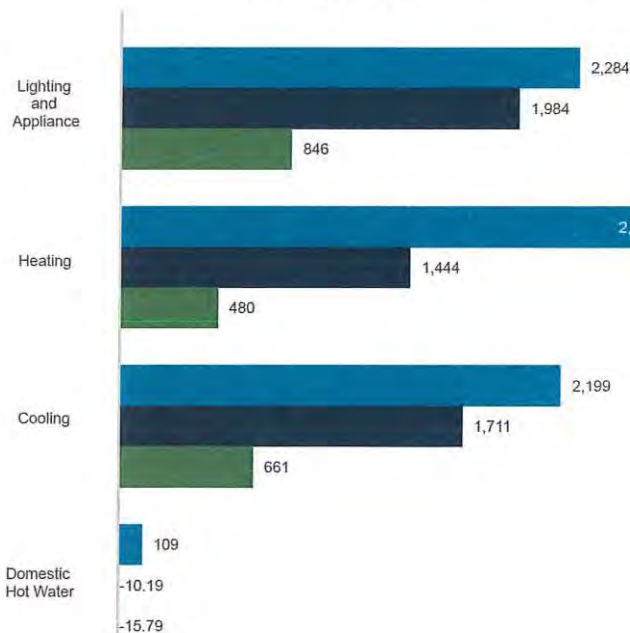
Achieved net annual energy savings of **12,554 MWh/year**, **66%** of planned energy savings



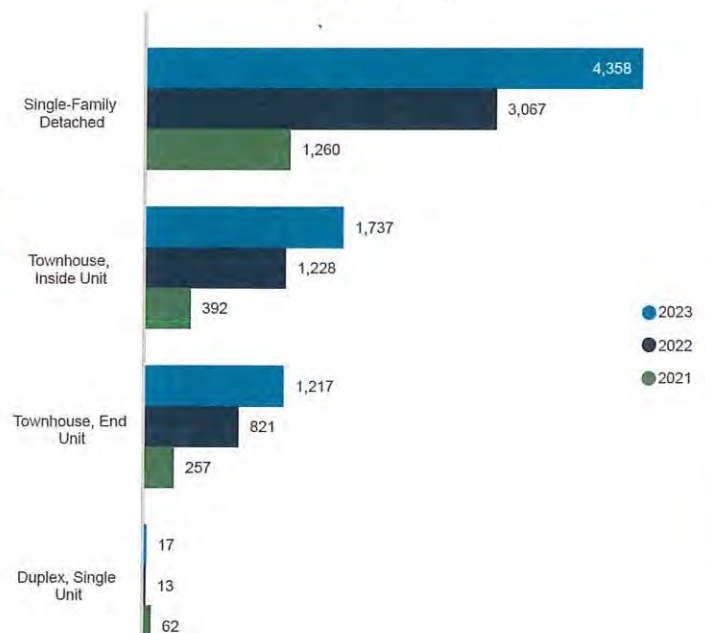
Spent **52%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023       | Lifetime    |
|--|------|--------|-----------|-----------|------------|-------------|
| Total Program Cost (\$)                        |      | 30,084 | 1,203,424 | 2,688,603 | 3,135,419  | 7,057,530   |
| Total Program Participants (#)                 |      | 0      | 1,018     | 2,560     | 2,925      | 6,503       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 1,971,437 | 5,129,363 | 7,329,239  |             |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 1,715,150 | 4,462,546 | 6,376,438  |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 883       | 2,285     | 3,004      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 769       | 1,988     | 2,613      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 343       | 970       | 1,675      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 298       | 844       | 1,458      |             |
| Total Net Lifetime Savings (kWh)               |      | 0      | 432,466   | 4,348,299 | 13,801,995 | 313,884,291 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 769       | 2,757     | 5,370      | 5,370       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 298       | 1,142     | 2,599      | 2,599       |

TOTAL SAVINGS BY END USE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# RESIDENTIAL THERMOSTAT PURCHASE AND WEATHERSMART

2020-2023

205 kWh/yr Average Net Savings Per Participant

## Eligibility

- Active residential customer in Virginia living in a single family detached, attached, or manufactured home
- Customer must be responsible for electric bill and able to secure permission to complete measures
- Customer must have a heat pump to participate in the Purchase program component, and may have either a central air conditioner or heat pump to participate in the WeatherSmart program component



Enrolled **19,336** customers, **86%** of planned participation



Achieved net annual energy savings of **3,955 MWh/year**, **42%** of planned energy savings



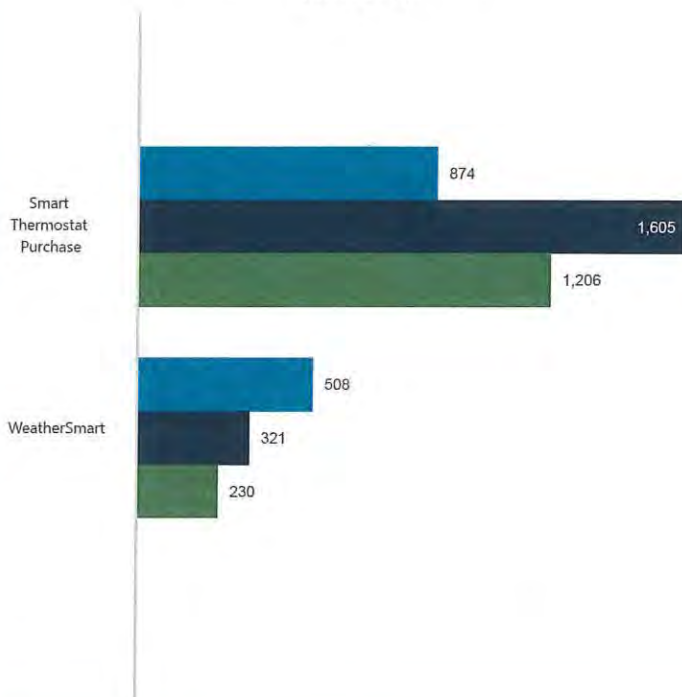
Spent **81%** of planned expenditures

## Measures

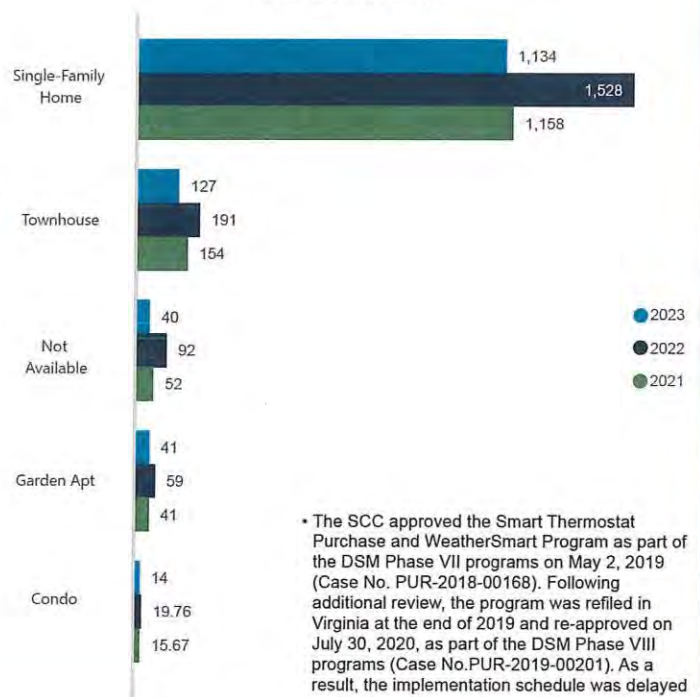
- ENERGY STAR® certified smart thermostat
- Optimization of thermostat schedule and set points
- Monthly report with personalized energy-saving tips

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023      | Lifetime   |
|--|------|--------|-----------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      | 99,671 | 1,002,656 | 1,146,575 | 660,213   | 2,909,116  |
| Total Program Participants (#)                 |      | 0      | 5,321     | 7,638     | 6,377     | 19,336     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 1,436,716 | 1,926,560 | 1,382,048 |            |
| - Total Net Incremental Savings (kWh/yr)       |      | 0      | 1,183,947 | 1,589,437 | 1,181,790 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 225       | 305       | 556       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 214       | 290       | 528       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 42        | 60        | 76        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 40        | 57        | 72        |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 473,495   | 2,334,127 | 5,366,471 | 23,406,046 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 214       | 290       | 528       | 528        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 40        | 57        | 72        | 72         |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



• The SCC approved the Smart Thermostat Purchase and WeatherSmart Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

# North Carolina

Docket #:E-22, SUB 595

## RESIDENTIAL THERMOSTAT PURCHASE AND WEATHERSMART

2021-2023

253 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in North Carolina living in a single family detached, attached, or manufactured home
- Customer must be responsible for electric bill and able to secure permission to complete measures
- Customer must have a heat pump to participate in the Purchase program component, and may have either a central air conditioner or heat pump to participate in the WeatherSmart program component



Enrolled **566** customers, **39%** of planned participation



Achieved net annual energy savings of **143,223 kWh/year**, **24%** of planned energy savings



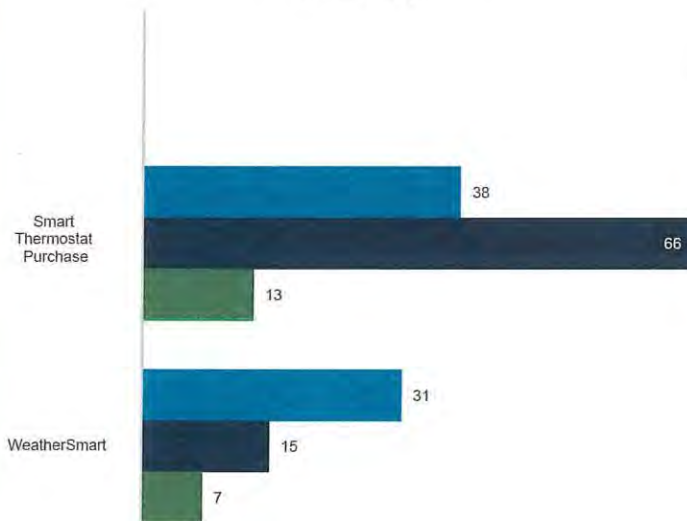
Spent **45%** of planned expenditures

### Measures

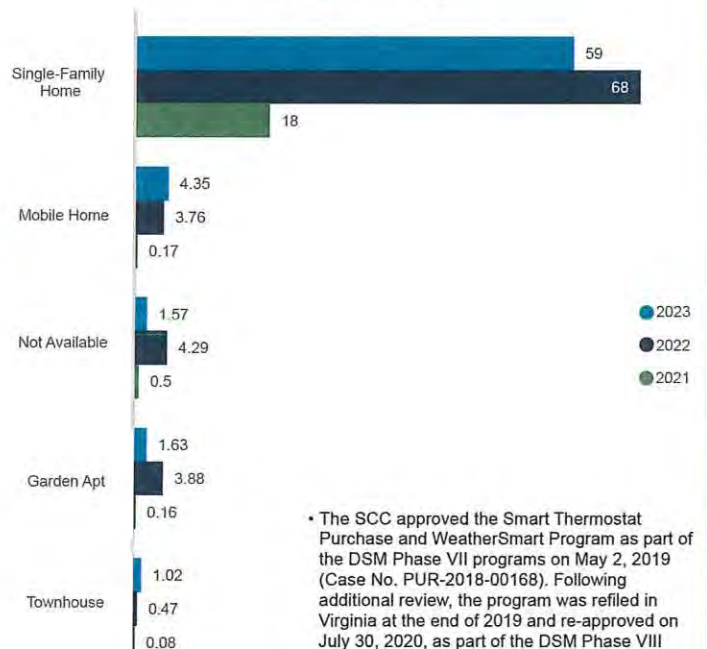
- ENERGY STAR® certified smart thermostat
- Optimization of thermostat schedule and set points
- Monthly report with personalized energy-saving tips

| Category                                       | 2019 | 2020 | 2021   | 2022   | 2023    | Lifetime |
|--|------|------|--------|--------|---------|----------|
| Total Program Cost (\$)                        |      |      | 19,202 | 50,894 | 31,196  | 101,292  |
| Total Program Participants (#)                 |      |      | 71     | 265    | 230     | 566      |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 19,412 | 80,592 | 69,185  |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 16,560 | 66,658 | 60,004  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 9      | 16     | 40      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 8      | 16     | 38      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 1      | 2      | 3       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 1      | 2      | 3       |          |
| Total Net Lifetime Savings (kWh)               |      |      | 5,128  | 45,894 | 149,420 | 761,311  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 8      | 16     | 38      | 38       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 1      | 2      | 3       | 3        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



• The SCC approved the Smart Thermostat Purchase and WeatherSmart Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refilled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

# Virginia

Case #: PUR-2020-00274

## RESIDENTIAL SMART HOME

2021-2023

421 kWh/yr Average Net Savings Per Participant

### Eligibility

- Residential customers in Virginia
- Cannot participate in DSM Phase VIII Residential Smart Thermostat (EE) Program
- Customer must be responsible for the electric bill and either own the residence or secure permission from the owner



Enrolled **62** customers, 1% of planned participation



Achieved net annual energy savings of **26,098 kWh/year**, 0.18% of planned energy savings



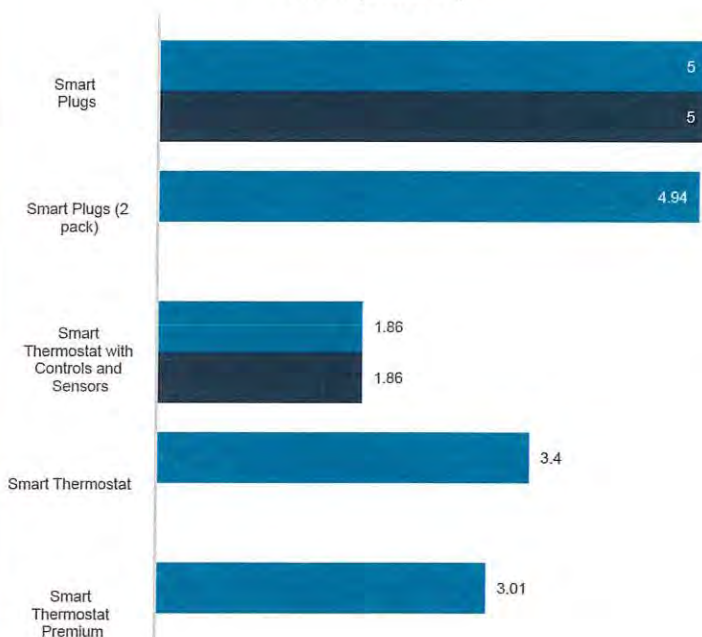
Spent **30%** of planned expenditures

### Measures

- Smart plugs
- Connected 9.5 W ENERGY STAR LED lamps
- A19 Wi-Fi 8.8W color lamps (60W equivalent)
- Downlight 7.2W BR30 color lamps (65W equivalent)
- Smart home hub with entry / motion sensor
- Smart home energy monitor (with solar option)
- Smart thermostat with voice control and temperature / humidity sensor

| Category                                       | 2019 | 2020 | 2021  | 2022    | 2023    | Lifetime  |
|--|------|------|-------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 9,058 | 720,794 | 586,023 | 1,315,876 |
| Total Program Participants (#)                 |      |      | 0     | 15      | 47      | 62        |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 8,087   | 22,616  |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 6,874   | 19,224  |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 1       | 1       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 0       | 1       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 3       | 1       |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 2       | 1       |           |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 1,511   | 15,248  | 164,290   |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 0       | 1       | 1         |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 2       | 3       | 3         |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 618

## RESIDENTIAL SMART HOME

2022-2023

288 kWh/yr Average Net Savings Per Participant

### Eligibility

- Residential customers in North Carolina
- Cannot participate in DSM Phase VII Residential Smart Thermostat (EE) Program
- Customer must be responsible for the electric bill and either own the residence or secure permission from the owner



Enrolled **2** customers, **0.26%** of planned participation

### Measures

- Smart plugs
- Connected 9.5 W ENERGY STAR LED lamps
- A19 Wi-Fi 8.8W color lamps (60W equivalent)
- Downlight 7.2W BR30 color lamps (65W equivalent)
- Smart home hub with entry / motion sensor
- Smart home energy monitor (with solar option)
- Smart thermostat with voice control and temperature / humidity sensor



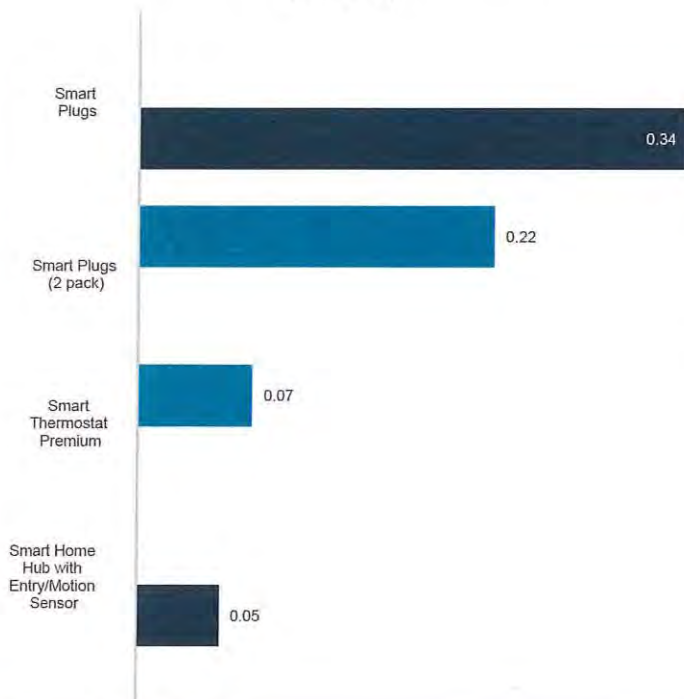
Achieved net annual energy savings of **577 kWh/year**, **0.06%** of planned energy savings



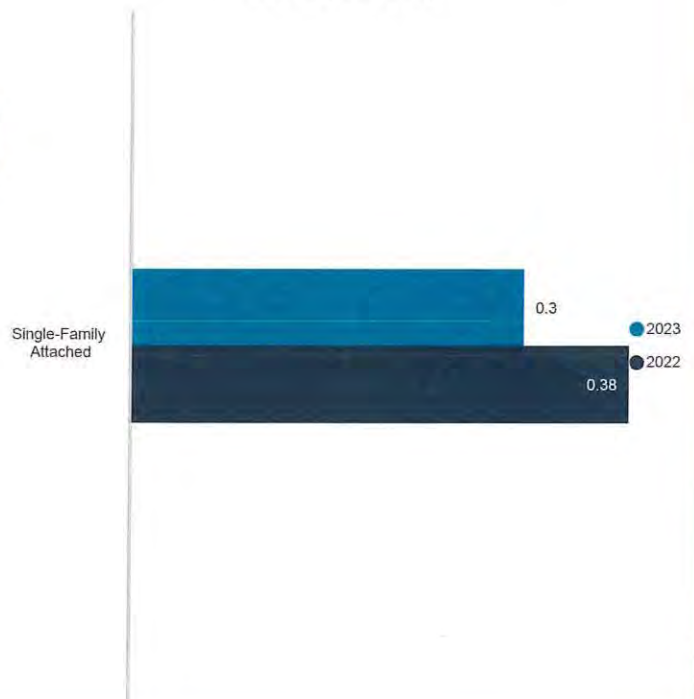
Spent **27%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022   | 2023   | Lifetime |
|--|------|------|------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 16,505 | 35,651 | 52,155   |
| Total Program Participants (#)                 |      |      |      | 1      | 1      | 2        |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 383    | 295    |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 326    | 251    |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0      | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 36     | 399    | 3,244    |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0      | 0      | 0        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0      | 0      | 0        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)





# Virginia

Case #: PUR-2020-00274

## RESIDENTIAL VIRTUAL ENERGY AUDIT

2021-2023

467 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in Virginia
- Customer that is responsible for electric bill and either own the home or is otherwise able to secure permission and authorization to complete the rebate submission



Enrolled **10,193** customers, **10%** of planned participation



Achieved net annual energy savings of **4,760 MWh/year**, **15%** of planned energy savings



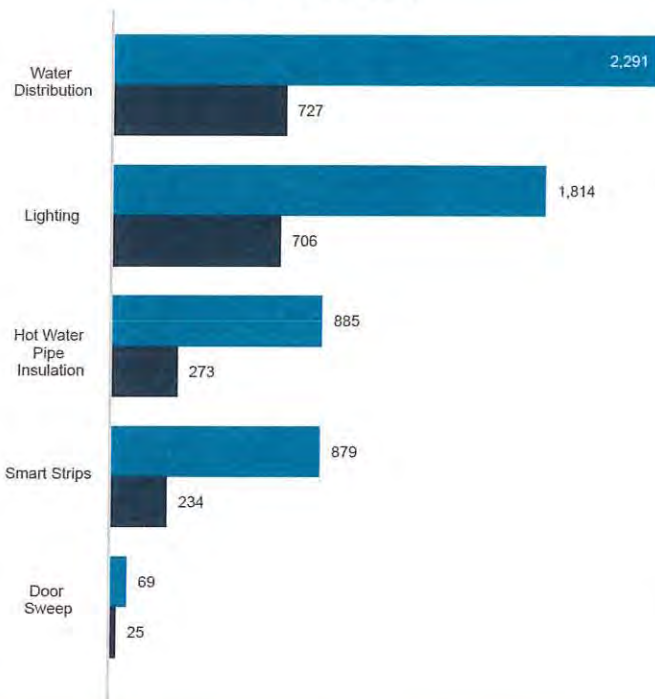
Spent **29%** of planned expenditures

### Measures

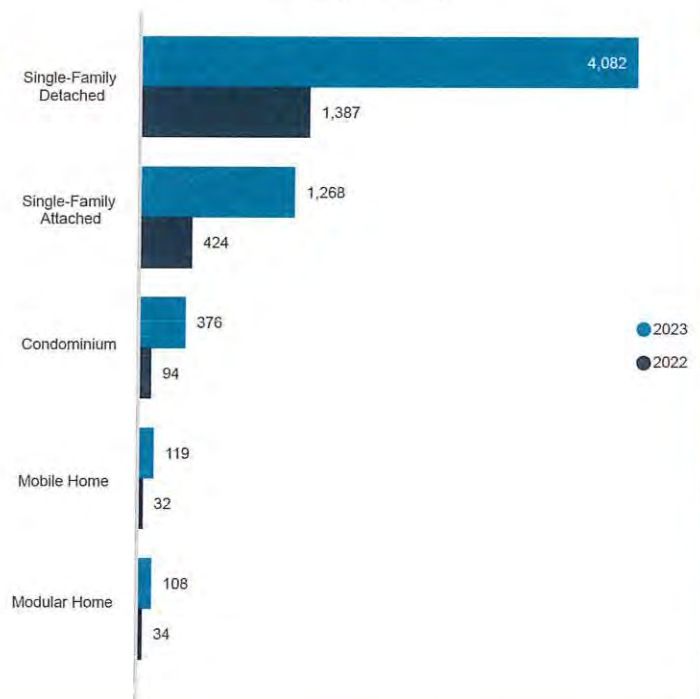
- Low-flow showerheads and aerators
- Water heat pipe insulation
- Window Weather-stripping
- Outlet / Switch Gaskets
- Outlet / Switch Gaskets Cooling and Elec Heat Pump
- Tier 1 Smart Strip
- LED lamp upgrades
- Door Weather-stripping
- Door Sweep
- Caulking

| Category                                       | 2019 | 2020 | 2021  | 2022      | 2023      | Lifetime   |
|--|------|------|-------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      |      | 4,465 | 665,100   | 1,496,704 | 2,166,270  |
| Total Program Participants (#)                 |      |      | 0     | 2,149     | 8,044     | 10,193     |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 1,972,641 | 5,960,092 |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 1,183,584 | 3,576,055 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 164       | 574       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 98        | 344       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 269       | 942       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 162       | 565       |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 360,263   | 2,930,827 | 48,672,600 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 98        | 443       | 443        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 162       | 727       | 727        |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 619

## RESIDENTIAL VIRTUAL ENERGY AUDIT

2022-2023

572 kWh/yr Average Net Savings Per Participant

### Eligibility

- Active residential customer in North Carolina
- Customer that is responsible for electric bill and either own the home or is otherwise able to secure permission and authorization to complete the rebate submission



Enrolled **416** customers, **6%** of planned participation



Achieved net annual energy savings of **237,941 kWh/year**, **12%** of planned energy savings



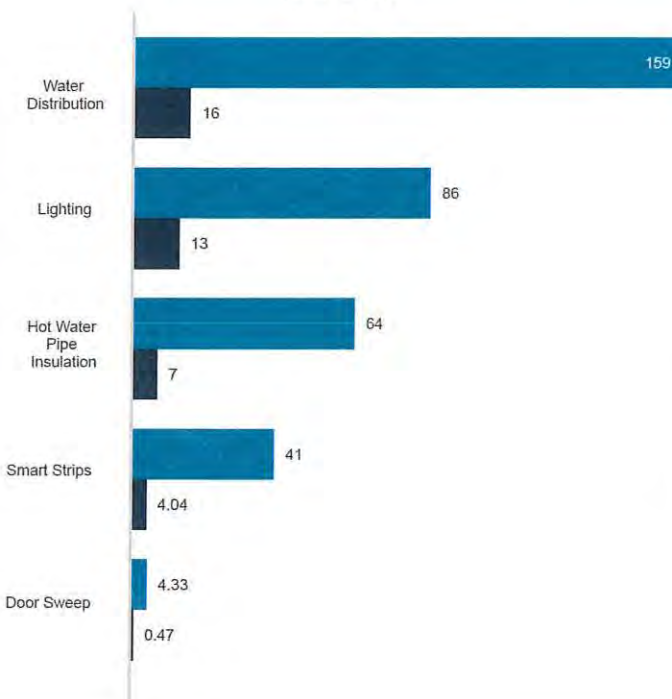
Spent **32%** of planned expenditures

### Measures

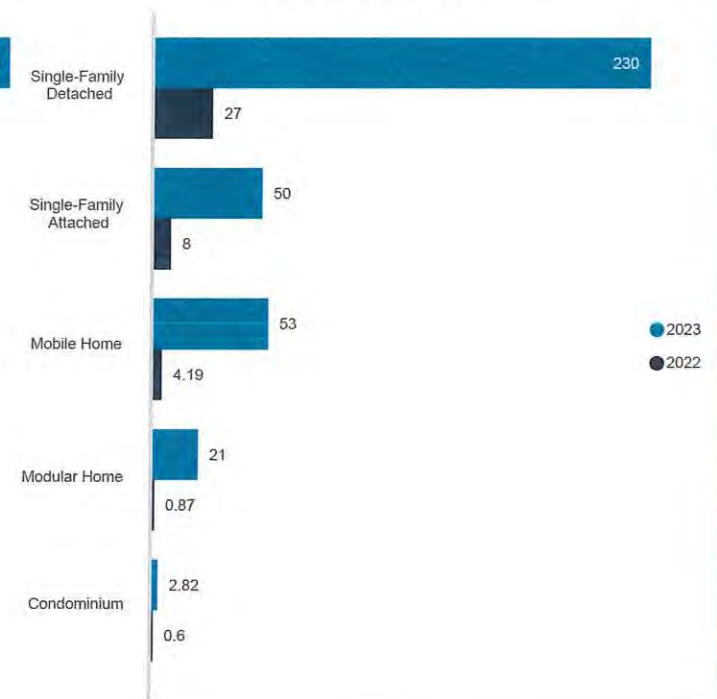
- Low-flow showerheads and aerators
- Water heat pipe insulation
- Window Weather-stripping
- Outlet / Switch Gaskets
- Outlet / Switch Gaskets Cooling and Elec Heat Pump
- Tier 1 Smart Strip
- LED lamp upgrades
- Door Weather-stripping
- Door Sweep
- Caulking

| Category                                       | 2019 | 2020 | 2021 | 2022   | 2023    | Lifetime  |
|--|------|------|------|--------|---------|-----------|
| Total Program Cost (\$)                        |      |      |      | 15,492 | 85,520  | 101,012   |
| Total Program Participants (#)                 |      |      |      | 39     | 377     | 416       |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 40,749 | 355,820 |           |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 24,450 | 213,492 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 3      | 34      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 2      | 20      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 6      | 52      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 3      | 31      |           |
| Total Net Lifetime Savings (kWh)               |      |      |      | 7,869  | 94,162  | 2,382,950 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 2      | 22      | 22        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 3      | 35      | 35        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2020-00274

## RESIDENTIAL WATER SAVINGS

2021-2023

1,279 kWh/yr Average Net Savings Per Participant

### Eligibility

- Residential customers in Virginia who reside in single-family homes
- Customer must be responsible for the electric bill and either own the residence or are able to secure permission from the owner to perform the recommended improvements



Enrolled **430** customers, **15%** of planned participation



Achieved net annual energy savings of **550,183 kWh/year**, **10%** of planned energy savings



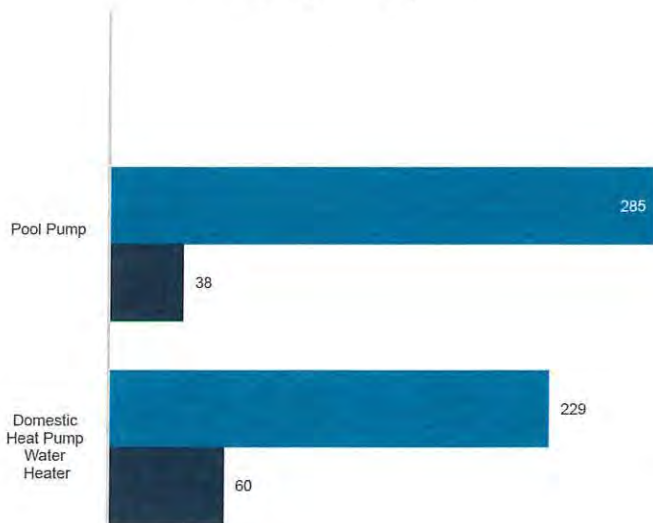
Spent **33%** of planned expenditures

### Measures

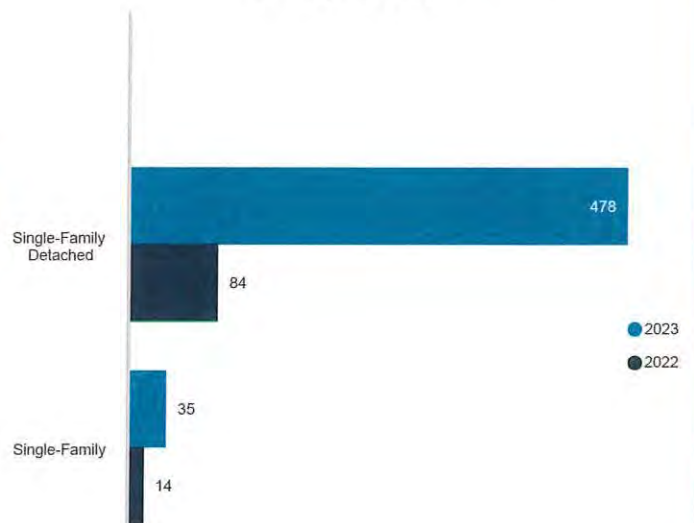
- Domestic Heat Pump Water Heater
- Variable Speed Pool Pumps

| Category                                       | 2019 | 2020 | 2021   | 2022    | 2023    | Lifetime  |
|--|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 10,197 | 256,790 | 347,383 | 614,369   |
| Total Program Participants (#)                 |      |      | 0      | 62      | 368     | 430       |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 97,694  | 513,620 |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 87,925  | 462,258 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 12      | 89      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 11      | 80      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 16      | 103     |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 14      | 92      |           |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 11,881  | 328,722 | 6,282,244 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 11      | 91      | 91        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 14      | 106     | 106       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 620

## RESIDENTIAL WATER SAVINGS

2022-2023

1,156 kWh/yr Average Net Savings Per Participant

### Eligibility

- Residential customers in North Carolina who reside in single-family homes
- Customer must be responsible for the electric bill and either own the residence or are able to secure permission from the owner to perform the recommended improvements



Enrolled **11** customers, **6%** of planned participation



Achieved net annual energy savings of **12,716 kWh/year**, **4%** of planned energy savings



Spent **25%** of planned expenditures

### Measures

- Domestic Heat Pump Water Heater
- Variable Speed Pool Pumps

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023   | Lifetime |
|--|------|------|------|-------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 5,048 | 16,481 | 21,529   |
| Total Program Participants (#)                 |      |      |      | 0     | 11     | 11       |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 14,129 |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 12,716 |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 3      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 2      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 3      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 3      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 4,397  | 145,034  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 2      | 2        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 3      | 3        |

**TOTAL SAVING BY MEASURE TYPE**  
(MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)





**3 ENERGY EFFICIENCY – INCOME AND AGE QUALIFYING**

**Table 3-1. Active income and age qualifying energy efficiency programs in 2023**

| DSM Phase | Acronym | Program                                   | VA | NC |
|-----------|---------|---|----|----|
| VIII      | RHVC    | Residential IAQ HVAC Health and Safety    | ✓  |    |
| IX        | EALS    | IAQ Solar                                 | ✓  |    |
|           | EAL4    | Residential IAQ Energy Efficiency         | ✓  | ✓  |
| X         | RIAQ    | Residential IAQ Home Improvement Enhanced | ✓  |    |

Figure 5-1 and Figure 5-2 show the cumulative count of residential income and age qualifying program participation and gross annualized energy savings in the two states, for the active programs, at the county level, through December 31, 2022. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation, in descending order, are Henrico, Richmond City, and Hampton City. In North Carolina, Halifax, Martin, and Washington counties have the highest participation.

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Richmond City, Henrico, and Chesapeake City. In North Carolina, Halifax, Washington, and Martin counties have the most energy savings.



Figure 3-1. Virginia and North Carolina Income and Age Qualifying Program Participation, by County

Participants

- A. Less than 10
- B. 10 - 100
- C. 100 - 1,000
- D. 1,000 - 3,000
- E. More than 3,000

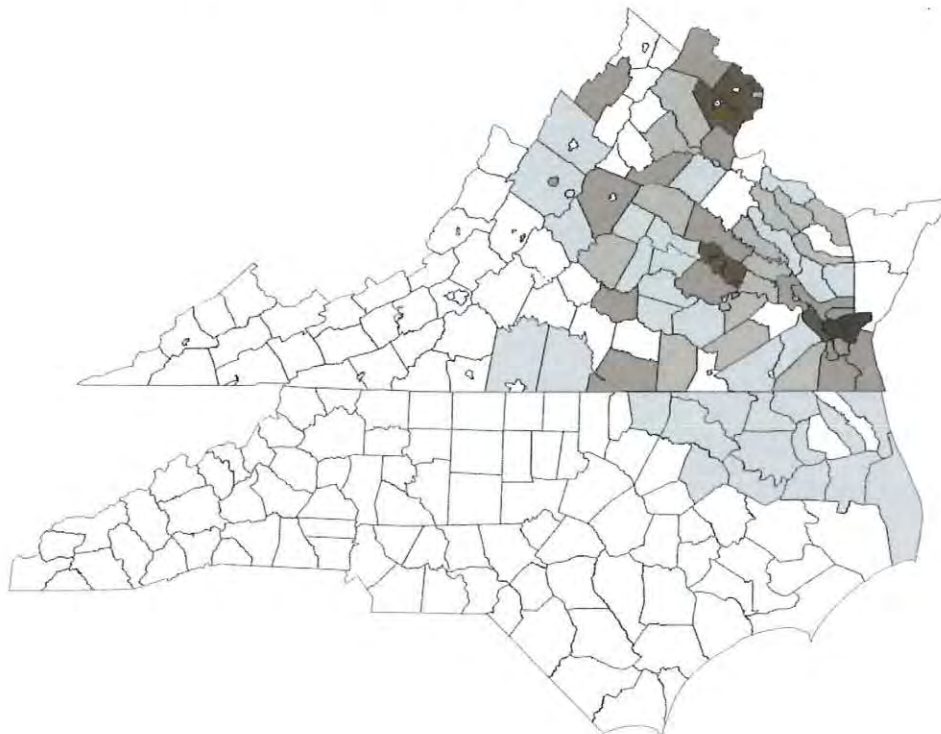
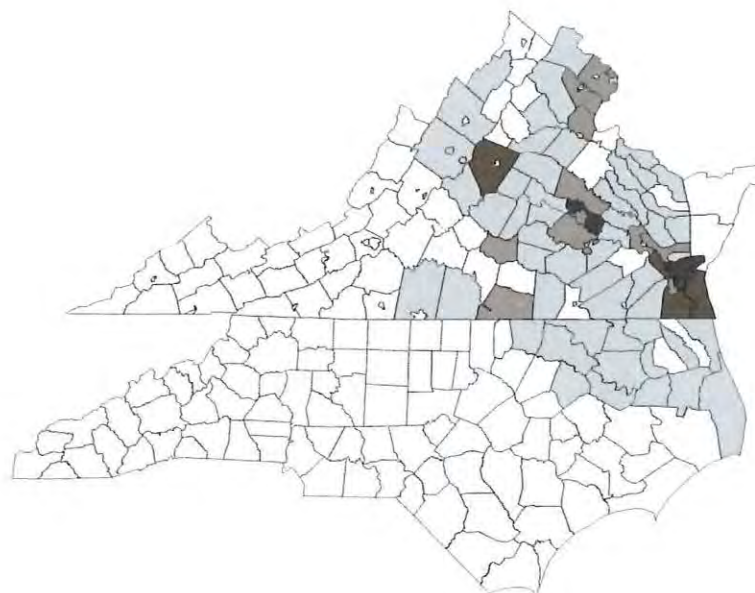


Figure 3-2. Virginia and North Carolina Income and Age Qualifying Program Gross Annualized Energy Savings, by County

Gross Total Electric Impact

- A. Less than 100 MWh/year
- B. 100 - 500 MWh/year
- C. 500 MWh/year - 1 GWh/year
- D. 1 - 5 GWh/year



# Virginia

Case #: PUR-2019-00201

## RESIDENTIAL HVAC HEALTH AND SAFETY

2020-2023

234 kWh/yr Average Net Savings Per Participant

### Eligibility

- Current or new Dominion customer on residential rate schedule
- Customer total household income must not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income (whichever is greater)
- Customers over 60 years of age with a total household income that does not exceed 120% of the Virginia Median Income also qualify
- Both owner-occupied and renter-occupied households are eligible

### Measures

- HVAC replacement and upgrade
- HVAC improvement
- HVAC tune-up
- Thermostat replacement
- Duct sealing, insulation, repair, and replacement
- Wall and floor insulation repair and upgrade
- Comprehensive air sealing
- Health and safety



Enrolled **10,715** customers, **41%** of planned participation



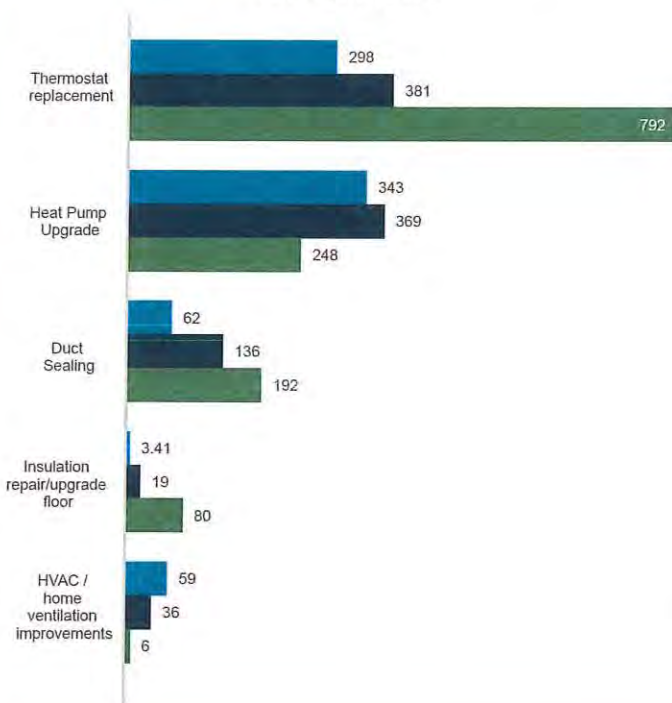
Achieved net annual energy savings of **2,509 MWh/year**, **14%** of planned energy savings



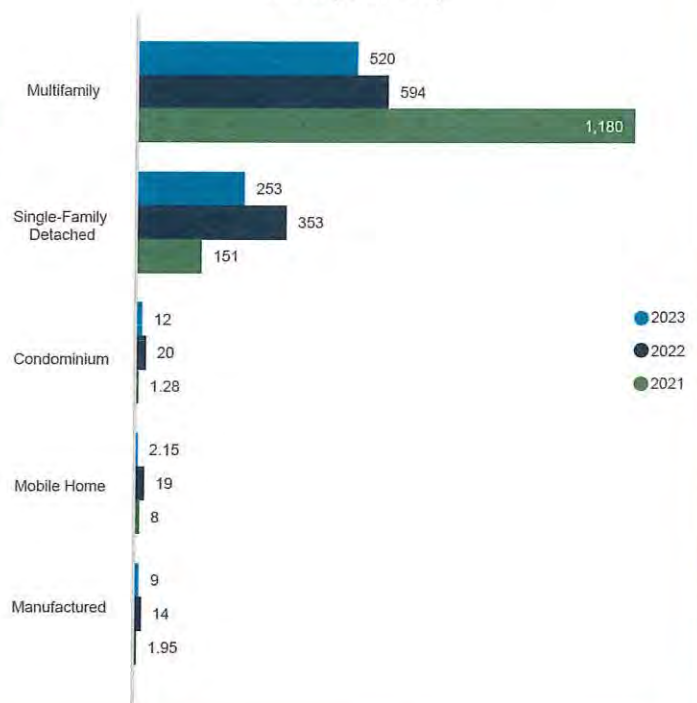
Spent **95%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021      | 2022       | 2023      | Lifetime   |
|--|------|--------|-----------|------------|-----------|------------|
| Total Program Cost (\$)                        |      | 49,722 | 9,094,648 | 12,192,181 | 9,682,714 | 31,019,265 |
| Total Program Participants (#)                 |      | 0      | 3,361     | 3,661      | 3,693     | 10,715     |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 1,341,418 | 999,178    | 796,194   |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 1,073,134 | 799,342    | 636,955   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 200       | 194        | 141       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 160       | 155        | 113       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 295       | 296        | 247       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 236       | 237        | 197       |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 226,299   | 1,658,791  | 3,807,629 | 33,902,234 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 160       | 315        | 428       | 428        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 236       | 473        | 670       | 670        |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2020-00274

## INCOME AND AGE QUALIFYING SOLAR PROGRAM

2021-2023

5,007 kWh/yr Average Net Savings Per Participant

### Eligibility

- Program participants must meet certain income, age, or disability requirements
- Program participants must have participated in a Dominion income and age qualifying program



Enrolled **137** customers, **12%** of planned participation



Achieved net annual energy savings of **685,945 kWh/year**, **17%** of planned energy savings



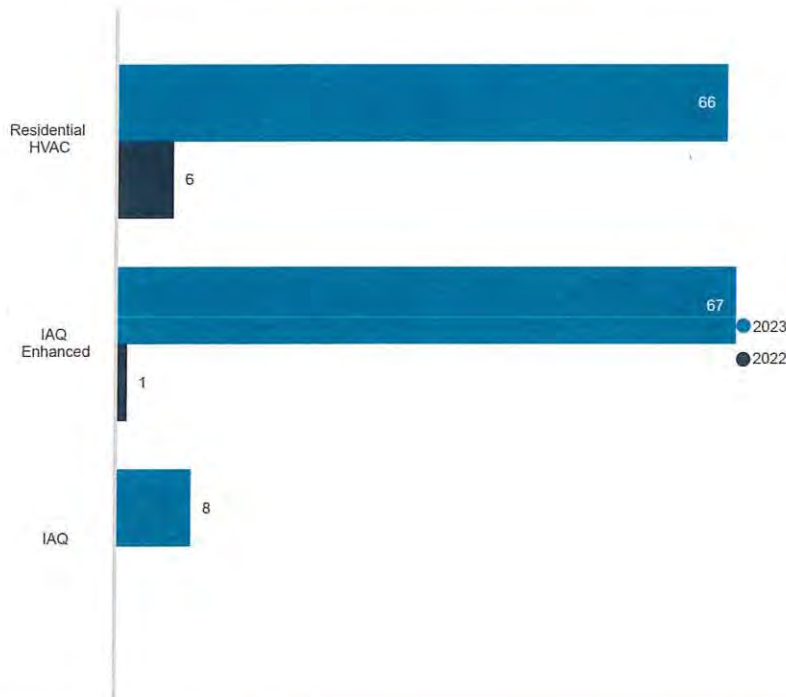
Spent **23%** of planned expenditures

### Measures

- Installation of solar photovoltaic panels mounted on the roof of the residence or on a pole on the customer's property

| Category                                       | 2019 | 2020 | 2021   | 2022    | 2023      | Lifetime   |
|--|------|------|--------|---------|-----------|------------|
| Total Program Cost (\$)                        |      |      | 10,963 | 196,159 | 4,633,026 | 4,840,149  |
| Total Program Participants (#)                 |      |      | 0      | 7       | 130       | 137        |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 34,559  | 822,872   |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 27,647  | 658,298   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 12      | 296       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 10      | 237       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0       | 0         |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0       | 0         |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 1,828   | 315,405   | 17,150,757 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 10      | 247       | 247        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0       | 0         | 0          |

### NUMBER OF PARTICIPANTS BY IAQ PROGRAM





# Virginia

Case #: PUR-2020-00274

## RESIDENTIAL INCOME AND AGE QUALIFYING ENERGY EFFICIENCY

2021-2023

579 kWh/yr Average Net Savings Per Participant

### Eligibility

- Income qualifying customers must have an income ≤ 60% of Virginia median income
- Age qualifying residential customers must be ≥ 60 years of age and have an income ≤ 120% of Virginia median income
- Qualified individuals must live in single-family homes, multifamily homes, or mobile homes



Enrolled **9,933** customers, **51%** of planned participation



Achieved net annual energy savings of **5,749 MWh/year**, **560%** of planned energy savings



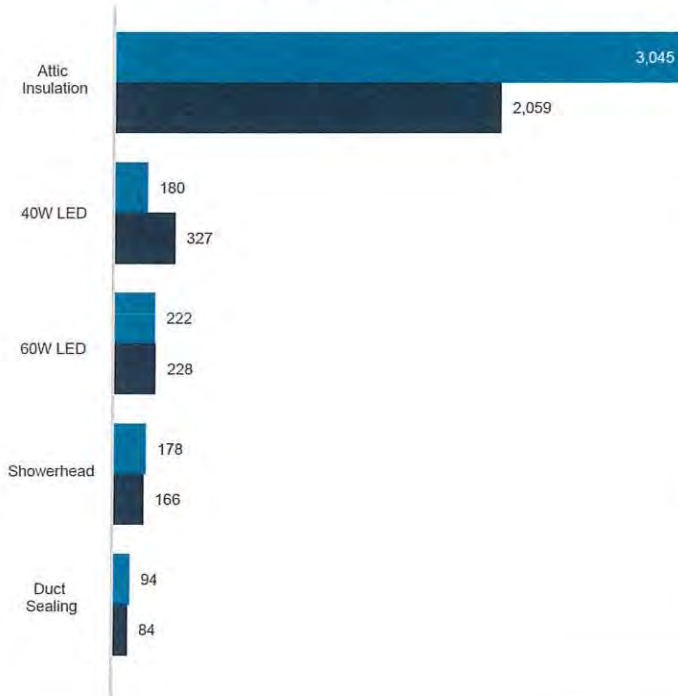
Spent **95%** of planned expenditures

### Measures

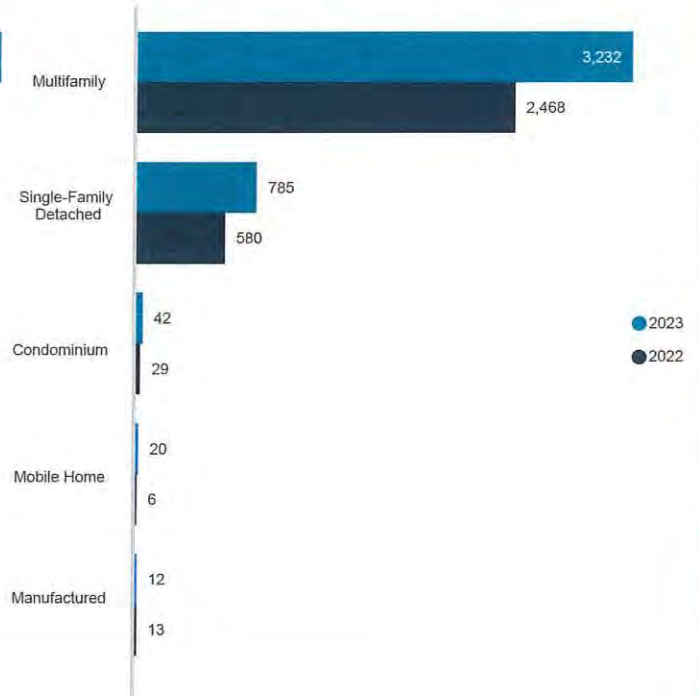
- LED lamps
- Energy-saving showerheads
- Faucet aerators
- Pipe or Water Tank wrap insulation
- Added attic or floor insulation
- Air or Duct sealing
- AC or Heat Pipe Tune-up
- Health and Safety measures

| Category                                       | 2019 | 2020 | 2021   | 2022      | 2023      | Lifetime    |
|--|------|------|--------|-----------|-----------|-------------|
| Total Program Cost (\$)                        |      |      | 15,696 | 5,853,130 | 8,094,395 | 13,963,221  |
| Total Program Participants (#)                 |      |      | 0      | 4,782     | 5,151     | 9,933       |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 3,096,191 | 4,090,052 |             |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 2,476,953 | 3,272,042 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 689       | 1,139     |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 551       | 912       |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 1,714     | 2,258     |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 1,371     | 1,806     |             |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 874,218   | 4,511,223 | 124,071,140 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 551       | 1,463     | 1,463       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 1,371     | 3,177     | 3,177       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, SUB 608

## RESIDENTIAL INCOME AND AGE QUALIFYING ENERGY EFFICIENCY

2022-2023

1,652 kWh/yr Average Net Savings Per Participant

### Eligibility

- Customer must have a total household income of < 200% of federal poverty guidelines, or be receiving assistance payments under the Work First or Supplemental Security Income Programs; or
- Customer is ≥ 60 years with a total household income ≤ 250% of the federal poverty guidelines



Enrolled **40** customers, **3%** of planned participation



Achieved net annual energy savings of **66,079 kWh/year**, **101%** of planned energy savings



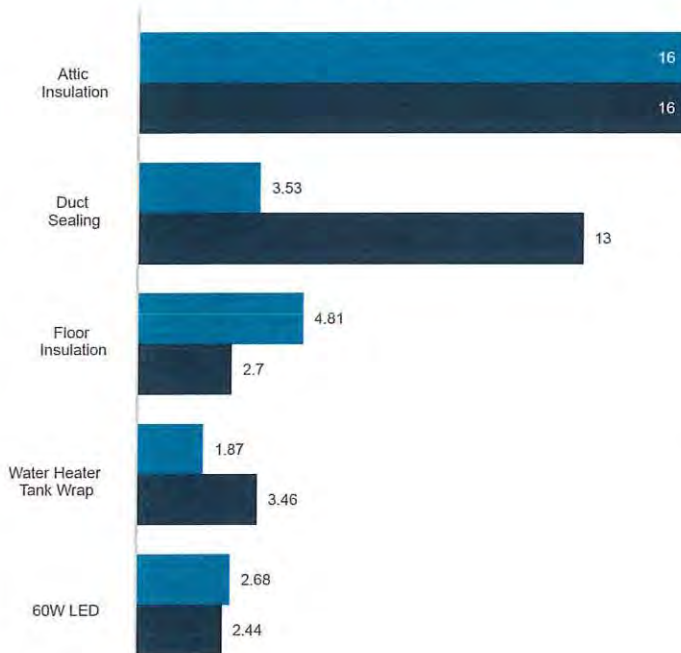
Spent **34%** of planned expenditures

### Measures

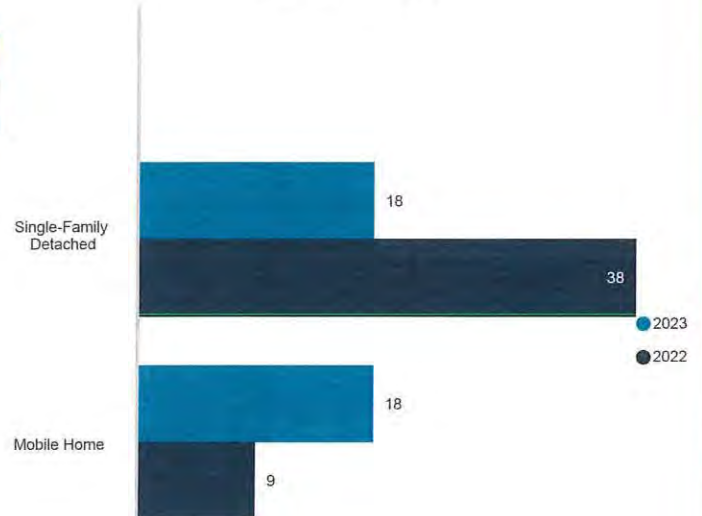
- LED lamps
- Energy-saving showerheads
- Faucet aerators
- Pipe or Water Tank wrap insulation
- Added attic or floor insulation
- Air or Duct sealing
- AC or Heat Pipe Tune-up
- Health and Safety measures

| Category                                       | 2019 | 2020 | 2021 | 2022    | 2023    | Lifetime  |
|--|------|------|------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      |      | 141,404 | 116,007 | 257,411   |
| Total Program Participants (#)                 |      |      |      | 26      | 14      | 40        |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 47,257  | 35,341  |           |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 37,806  | 28,273  |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 16      | 8       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 12      | 6       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 27      | 24      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 21      | 19      |           |
| Total Net Lifetime Savings (kWh)               |      |      |      | 15,764  | 68,848  | 1,289,312 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 12      | 19      | 19        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 21      | 41      | 41        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2021-00247

## RESIDENTIAL INCOME AND AGE QUALIFYING HOME IMPROVEMENT ENHANCED

2022-2023

411 kWh/yr Average Net Savings Per Participant

### Eligibility

- Income qualifying customers must have an income ≤ 60% of Virginia median income, or 80% of the local area median income, whichever is greater
- Age qualifying residential customers must be ≥ 60 years of age and have an income ≤ 120% of Virginia median income
- Qualified individuals must live in single-family homes, multifamily homes, or mobile homes

### Measures

- LED lamps
- ENERGY STAR washers and dryers
- ENERGY STAR dishwashers
- Domestic heat pump water heaters
- Window film
- Window replacements
- Door replacements



Enrolled 4 customers, 1% of planned participation



Achieved net annual energy savings of 1,644 kWh/year, 5% of planned energy savings



Spent 44% of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023    | Lifetime |
|--|------|------|------|-------|---------|----------|
| Total Program Cost (\$)                        |      |      |      | 9,466 | 556,644 | 566,110  |
| Total Program Participants (#)                 |      |      |      | 0     | 4       | 4        |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 1,661   |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 1,644   |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 1       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 1       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 1       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 1       |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 271     | 32,890   |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 1       | 1        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 1       | 1        |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)





**4 ENERGY EFFICIENCY – NON-RESIDENTIAL**

**Table 4-1. Active non-residential energy efficiency programs in 2023**

| DSM Phase | Acronym | Program                              | VA | NC |
|-----------|---------|--------------------------------------|----|----|
| VII       | CHV3    | Heating and Cooling Efficiency       | ✓  | ✓  |
|           | CLT3    | Lighting Systems & Controls          | ✓  | ✓  |
| X         | CLT4    | Lighting Systems & Controls          | ✓  | ✓  |
| VII       | CTSO    | Office                               | ✓  | ✓  |
|           | CTSM    | Manufacturing                        | ✓  | ✓  |
|           | CSW2    | Window Film                          | ✓  | ✓  |
| VIII      | CEEP    | Midstream Energy Efficiency Products | ✓  |    |
|           | CMFP    | Multifamily                          | ✓  |    |
|           | CNCR    | New Construction                     | ✓  | ✓  |
|           | SBI2    | Small Business Improvement Enhanced  | ✓  | ✓  |
| IX        | CAGR    | Agricultural Energy Efficiency       | ✓  |    |
|           | CBAS    | Building Automation System           | ✓  | ✓  |
|           | CBOT    | Building Optimization                | ✓  |    |
|           | CENG    | Engagement                           | ✓  | ✓  |
|           | CNR2    | Prescriptive Enhanced                | ✓  | ✓  |

Figure 4-1 and Figure 4-2 show the cumulative count of non-residential general products and services program participation and gross annualized energy savings in the two states, for the active programs, at the county level, through December 31, 2022. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation in descending order, are Fairfax, Henrico, and Virginia Beach City. In North Carolina, Dare, Currituck, and Halifax counties have the highest participation.

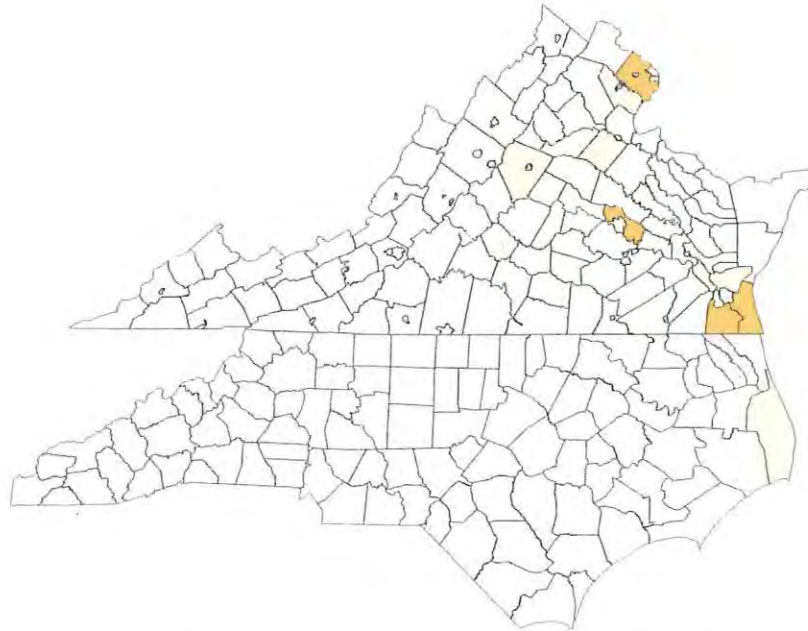
Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Loudoun, and Henrico. In North Carolina, Dare, Halifax, and Martin counties have the most energy savings.



**Figure 4-1. Virginia and North Carolina Non-Residential General Products and Services Program Participation, by County**

**Participants**

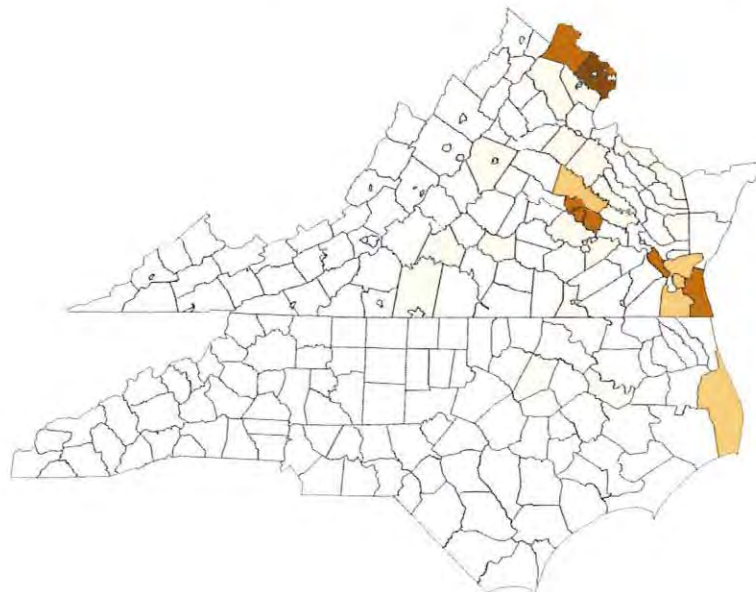
- A. Less than 10
- B. 10 - 100
- C. 100 - 1,000



**Figure 4-2. Virginia and North Carolina Non-Residential General Products and Services Program Gross Annualized Energy Savings, by County**

**Gross Total Electric Impact**

- A. Less than 100 MWh/year
- B. 100 - 500 MWh/year
- C. 500 MWh/year - 1 GWh/year
- D. 1 - 5 GWh/year
- E. More than 5 GWh/year



# Virginia

Case #: PUE-2018-00168

## NON-RESIDENTIAL HEATING AND COOLING EFFICIENCY

2019-2023

136,890 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **151** customers, **5%** of planned participation



Achieved net annual energy savings of **20,670 MWh/year**, **56%** of planned energy savings



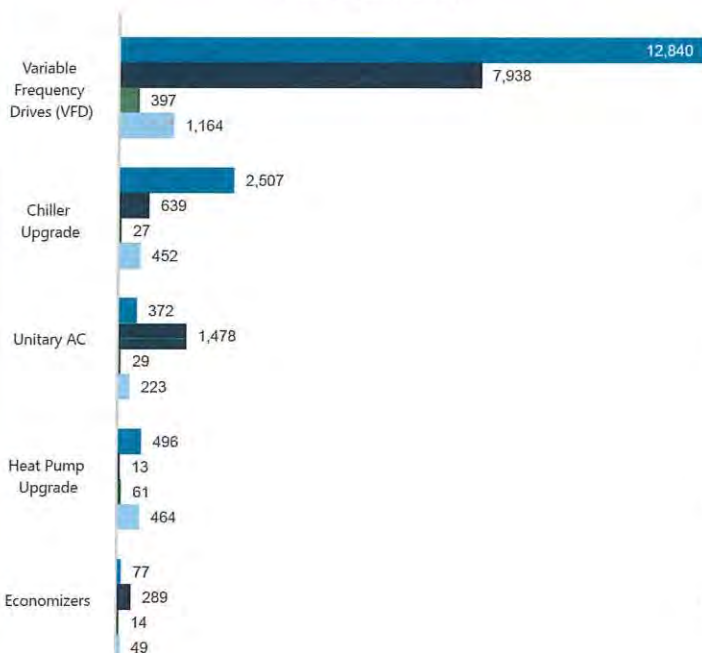
Spent **67%** of planned expenditures

### Measures

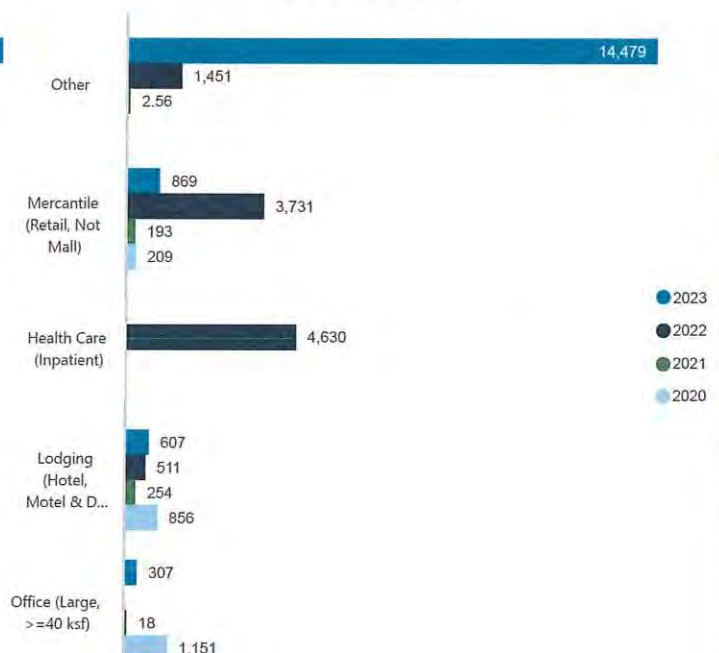
- Unitary and split AC units
- Air-source and ground-source heat pumps
- Packaged terminal AC and heat pumps
- Variable refrigerant flow units
- Water and air-cooled chillers
- Variable frequency drives for HVAC applications
- Economizers

| Category                                       | 2019    | 2020      | 2021      | 2022       | 2023       | Lifetime    |
|--|---------|-----------|-----------|------------|------------|-------------|
| Total Program Cost (\$)                        | 342,194 | 723,971   | 582,157   | 1,173,390  | 2,990,710  | 5,812,422   |
| Total Program Participants (#)                 | 0       | 30        | 44        | 51         | 26         | 151         |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 2,352,639 | 527,840   | 10,356,854 | 16,291,782 |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 1,646,848 | 369,488   | 7,249,798  | 11,404,247 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 408       | 59        | 2,809      | 2,230      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 286       | 41        | 1,966      | 1,561      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0         | 29        | 168        | 21         |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0         | 20        | 118        | 15         |             |
| Total Net Lifetime Savings (kWh)               | 0       | 563,495   | 2,375,478 | 6,264,367  | 20,029,396 | 310,076,943 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 286       | 327       | 2,293      | 3,854      | 3,854       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0         | 20        | 138        | 153        | 153         |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 574

## NON-RESIDENTIAL HEATING AND COOLING EFFICIENCY

2019-2023

49,877 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **2** customers, **1%** of planned participation



Achieved net annual energy savings of **99,753 kWh/year**, **5%** of planned energy savings



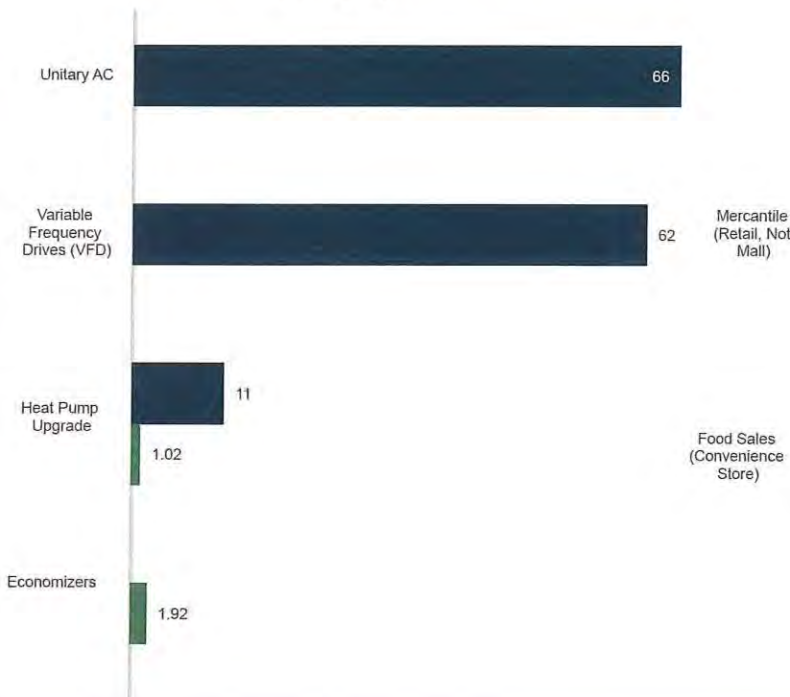
Spent **30%** of planned expenditures

### Measures

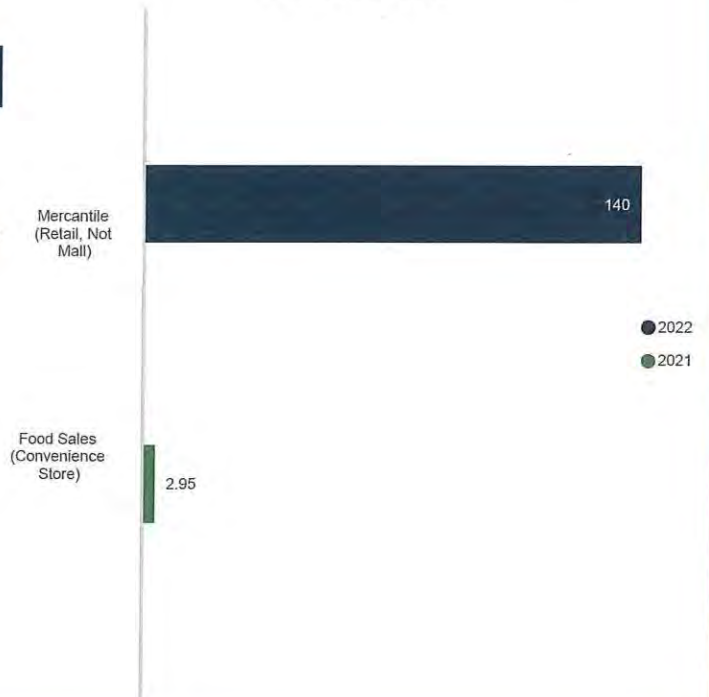
- Unitary and split AC units
- Air-source and ground-source heat pumps
- Packaged terminal AC and heat pumps
- Variable refrigerant flow units
- Water and air-cooled chillers
- Variable frequency drives for HVAC applications
- Economizers

| Category                                       | 2019 | 2020   | 2021   | 2022    | 2023   | Lifetime  |
|--|------|--------|--------|---------|--------|-----------|
| Total Program Cost (\$)                        | 0    | 30,873 | 33,730 | 43,699  | 34,208 | 142,510   |
| Total Program Participants (#)                 | 0    | 0      | 1      | 1       | 0      | 2         |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 2,946  | 139,559 | 0      |           |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 2,062  | 97,691  | 0      |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 1      | 18      | 0      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 12      | 0      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 1      | 0       | 0      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0       | 0      |           |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 813    | 33,876  | 0      | 1,496,351 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 13      | 0      | 13        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0       | 0      | 0         |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# Virginia

Case #: PUE-2018-00168

## NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2019-2023

41,803 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **1,056** customers, **53%** of planned participation



Achieved net annual energy savings of **44,144 MWh/year**, **110%** of planned energy savings



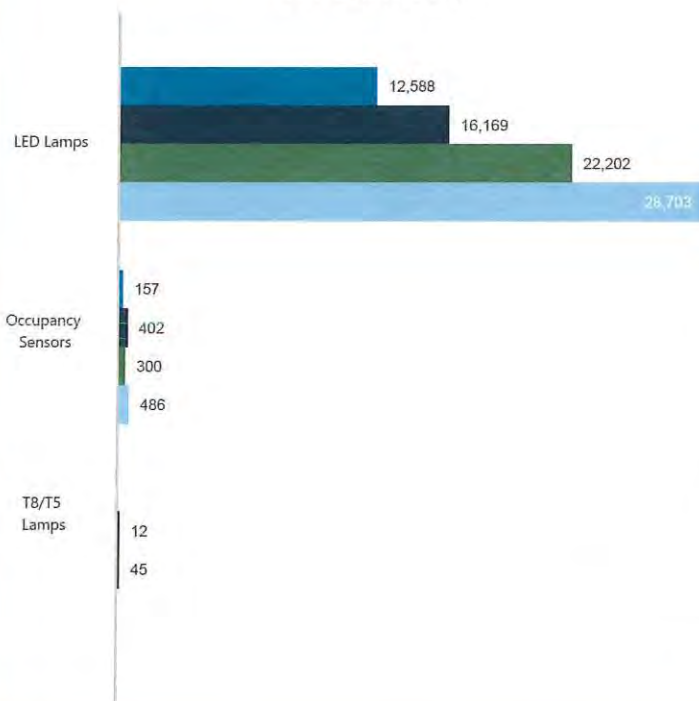
Spent **136%** of planned expenditures

### Measures

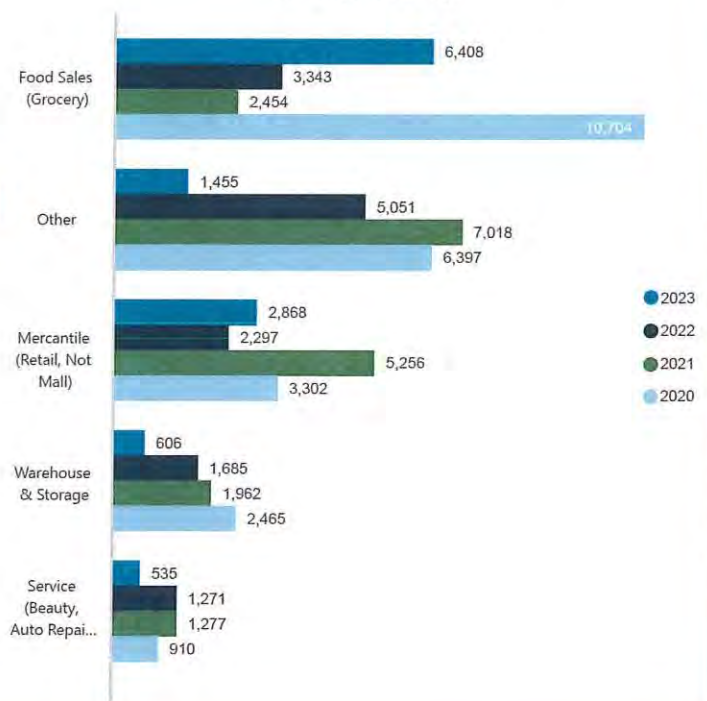
- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- LED lamps
- Occupancy sensors

| Category                                       | 2019    | 2020       | 2021       | 2022       | 2023        | Lifetime    |
|--|---------|------------|------------|------------|-------------|-------------|
| Total Program Cost (\$)                        | 592,373 | 3,989,872  | 3,537,467  | 2,749,190  | 1,413,563   | 12,282,466  |
| Total Program Participants (#)                 | 0       | 406        | 388        | 193        | 69          | 1,056       |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 29,189,250 | 22,546,913 | 16,583,111 | 12,744,620  |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 16,287,601 | 12,581,177 | 9,253,376  | 6,021,833   |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 4,020      | 3,195      | 2,582      | 2,241       |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 1,845      | 1,466      | 1,185      | 1,028       |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0          | 2,488      | 1,773      | 1,276       |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0          | 1,108      | 790        | 569         |             |
| Total Net Lifetime Savings (kWh)               | 0       | 6,689,038  | 29,597,437 | 62,477,470 | 106,338,904 | 449,395,314 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 1,845      | 3,312      | 4,497      | 5,525       | 5,525       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0          | 1,108      | 1,898      | 2,467       | 2,467       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)





# North Carolina

Docket #: E-22, Sub 573

## NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2019-2023

39,899 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor

### Measures

- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- LED lamps
- Occupancy sensors



Enrolled **29** customers, **27%** of planned participation



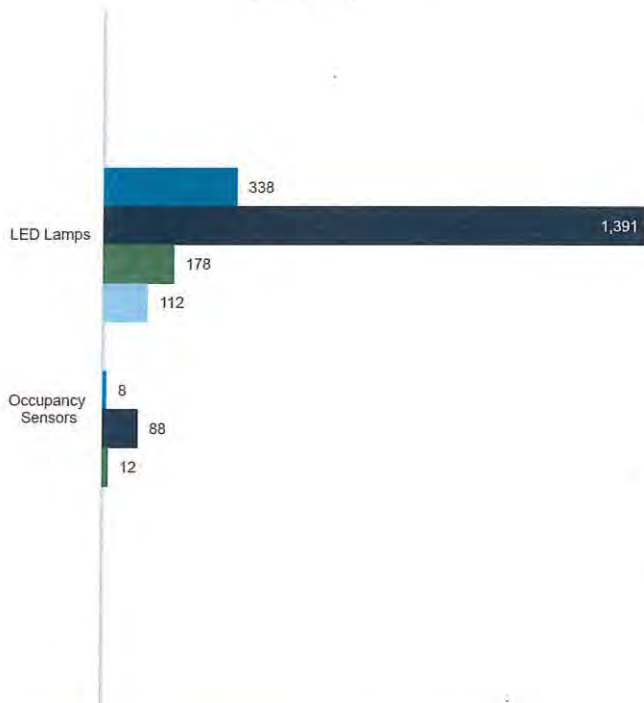
Achieved net annual energy savings of **1,157 MWh/year**, **55%** of planned energy savings



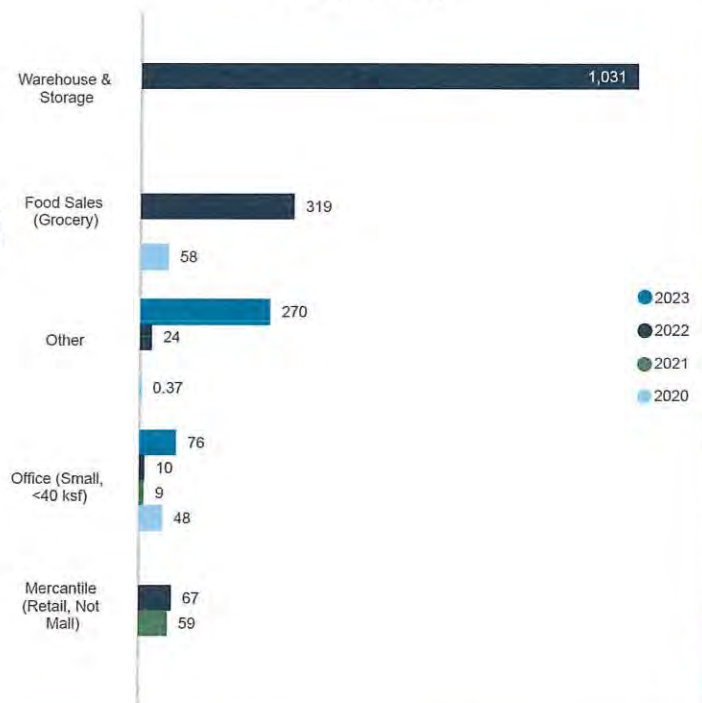
Spent **114%** of planned expenditures

| Category                                       | 2019 | 2020    | 2021    | 2022      | 2023      | Lifetime   |
|--|------|---------|---------|-----------|-----------|------------|
| Total Program Cost (\$)                        | 0    | 160,883 | 92,989  | 209,012   | 66,851    | 529,735    |
| Total Program Participants (#)                 | 0    | 9       | 5       | 12        | 3         | 29         |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 111,813 | 189,982 | 1,478,591 | 346,305   |            |
| Total Net Incremental Savings (kWh/yr)         | 0    | 62,392  | 106,010 | 825,054   | 163,629   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 5       | 41      | 323       | 79        |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 2       | 19      | 148       | 36        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0       | 17      | 108       | 33        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0       | 8       | 48        | 15        |            |
| Total Net Lifetime Savings (kWh)               | 0    | 31,882  | 145,889 | 504,158   | 1,648,950 | 11,767,208 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 2       | 21      | 170       | 206       | 206        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0       | 8       | 56        | 70        | 70         |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2021-00247

## NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2022-2023

72,385 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by participating contractor



Enrolled **259** customers, **28%** of planned participation



Achieved net annual energy savings of **18,748 MWh/year**, **30%** of planned energy savings



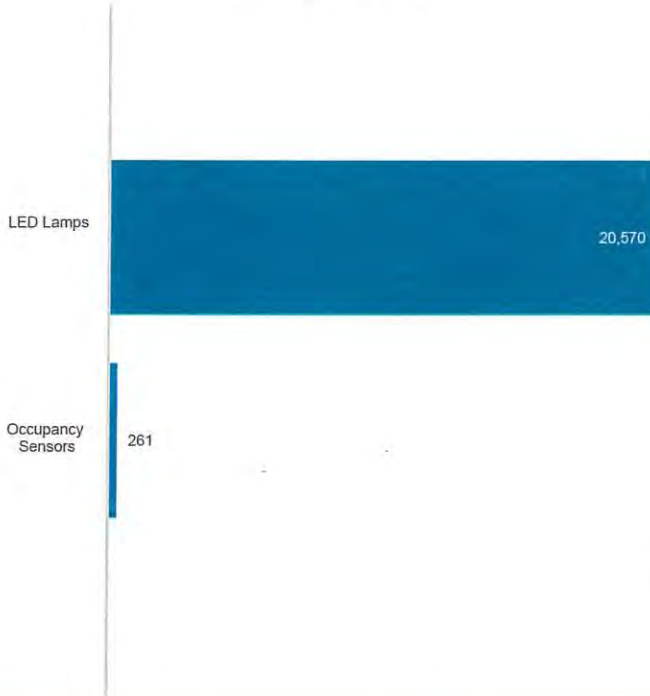
Spent **34%** of planned expenditures

### Measures

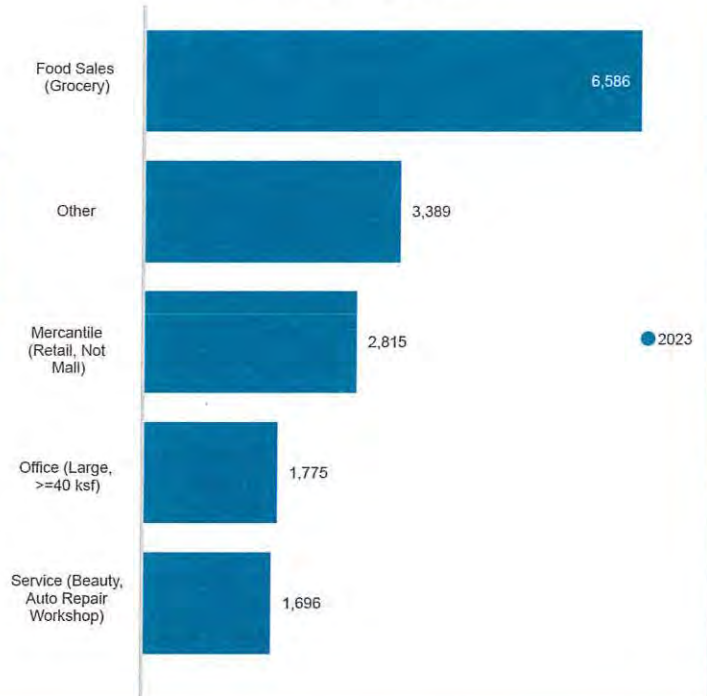
- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- LED lamps
- Occupancy sensors

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023       | Lifetime    |
|--|------|------|------|-------|------------|-------------|
| Total Program Cost (\$)                        |      |      |      | 3,222 | 3,313,015  | 3,316,237   |
| Total Program Participants (#)                 |      |      |      | 0     | 259        | 259         |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 20,830,777 |             |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 18,747,700 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 3,478      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 3,130      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 2,153      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 1,938      |             |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 3,874,759  | 190,655,650 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 3,130      | 3,130       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 1,938      | 1,938       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 666

## NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2022-2023

116,646 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by participating contractor



Enrolled **5** customers, **9%** of planned participation



Achieved net annual energy savings of **583,232 kWh/year**, **15%** of planned energy savings



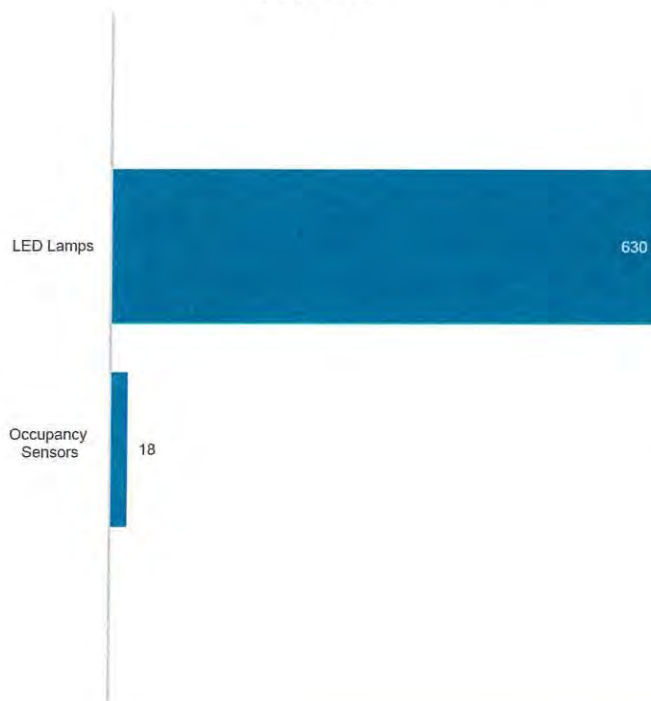
Spent **29%** of planned expenditures

### Measures

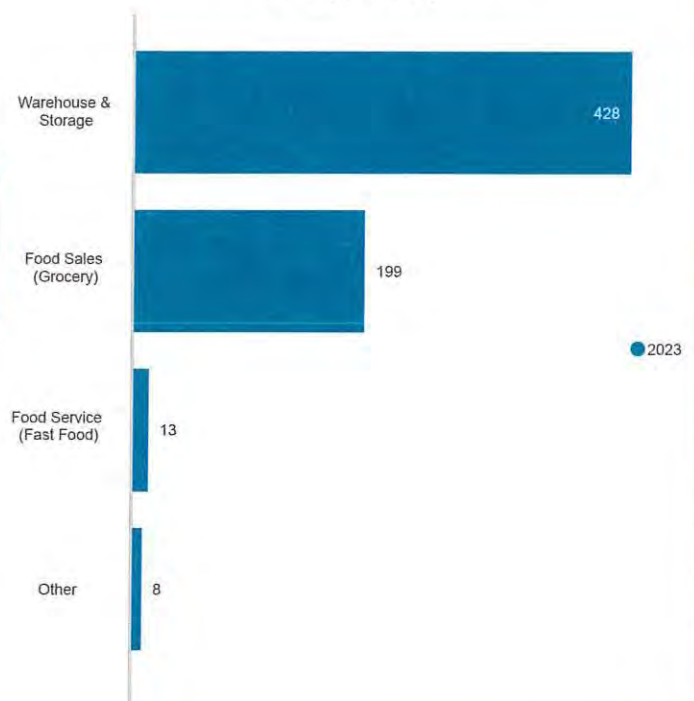
- T8 lamps with electronic ballast
- High-performance T8 lamps
- T5 lamps with electronic ballast
- LED lamps
- Occupancy sensors

| Category                                       | 2019 | 2020 | 2021 | 2022 | 2023    | Lifetime  |
|--|------|------|------|------|---------|-----------|
| Total Program Cost (\$)                        |      |      |      | 0    | 115,660 | 115,660   |
| Total Program Participants (#)                 |      |      |      | 0    | 5       | 5         |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0    | 648,036 |           |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0    | 583,232 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0    | 123     |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0    | 111     |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0    | 59      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0    | 53      |           |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0    | 100,758 | 5,930,613 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0    | 111     | 111       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0    | 53      | 53        |

TOTAL SAVING BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# Virginia

Case #: PUE-2018-00168

## NON-RESIDENTIAL OFFICE

2019-2023

68,084 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **167** customers, **47%** of planned participation



Achieved net annual energy savings of **11,370 MWh/year**, **54%** of planned energy savings



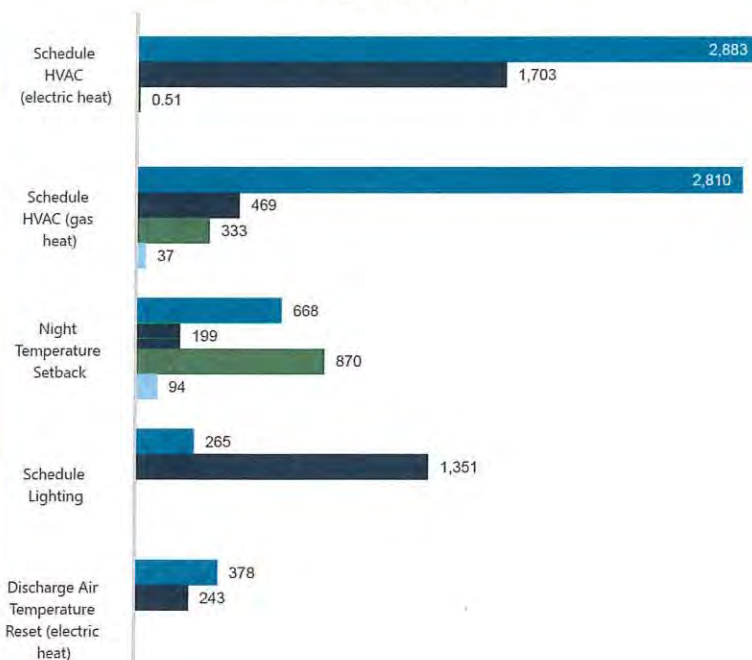
Spent **59%** of planned expenditures

### Measures

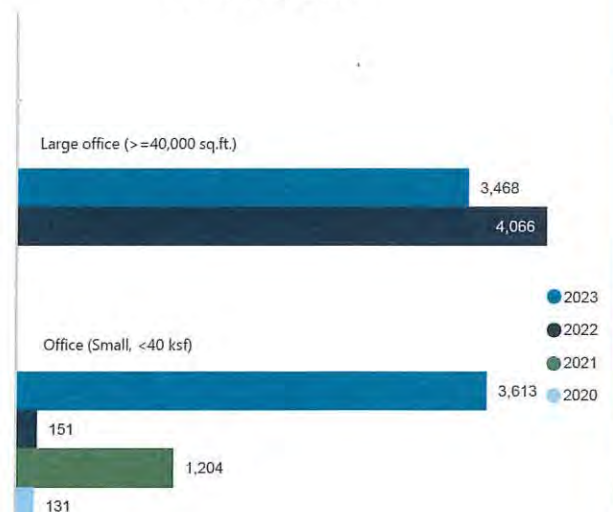
- Temperature setback
- Static pressure reset
- Reduce lighting schedule
- VAV minimum flow reduction
- HVAC unit scheduling
- Dual enthalpy economizer
- Condensing water temp reset
- Discharge air temp reset

| Category                                       | 2019    | 2020    | 2021      | 2022      | 2023       | Lifetime   |
|--|---------|---------|-----------|-----------|------------|------------|
| Total Program Cost (\$)                        | 405,507 | 408,837 | 804,161   | 477,980   | 1,137,077  | 3,233,563  |
| Total Program Participants (#)                 | 0       | 6       | 59        | 16        | 86         | 167        |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 131,417 | 1,203,577 | 4,217,101 | 7,081,212  |            |
| Total Net Incremental Savings (kWh/yr)         | 0       | 118,275 | 1,083,219 | 3,795,391 | 6,373,091  |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 0       | 0         | 69        | 19         |            |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 0       | 0         | 62        | 18         |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0       | 0         | 41        | 14         |            |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0       | 0         | 37        | 13         |            |
| Total Net Lifetime Savings (kWh)               | 0       | 7,343   | 1,088,685 | 2,745,849 | 10,570,872 | 79,610,786 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 0       | 0         | 62        | 79         | 79         |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0       | 0         | 37        | 50         | 50         |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 572

## NON-RESIDENTIAL OFFICE

2019-2023

28,172 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **3** customers, **15%** of planned participation



Achieved net annual energy savings of **84,516 kWh/year**, **7%** of planned energy savings



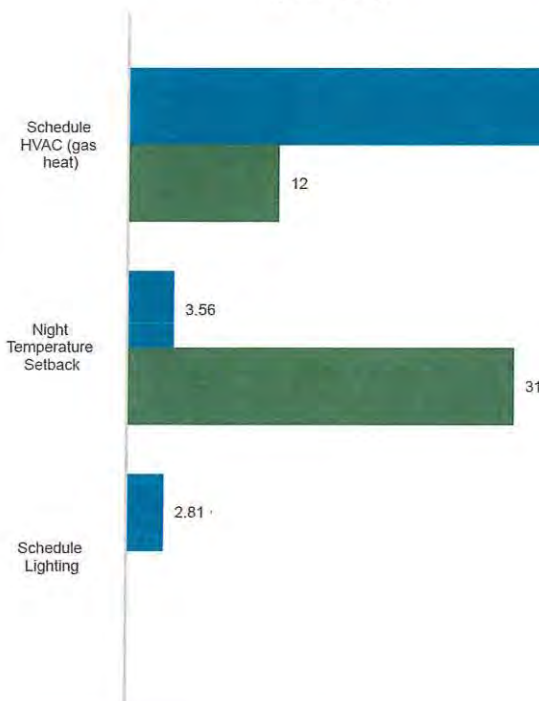
Spent **37%** of planned expenditures

### Measures

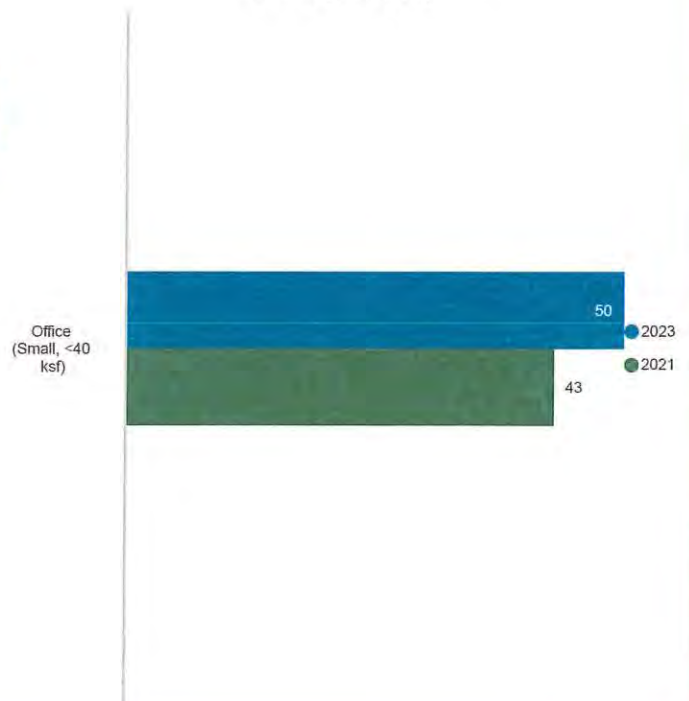
- Temperature setback
- Static pressure reset
- Reduce lighting schedule
- VAV minimum flow reduction
- HVAC unit scheduling
- Dual enthalpy economizer
- Condensing water temp reset
- Discharge air temp reset

| Category                                       | 2019 | 2020   | 2021   | 2022   | 2023    | Lifetime |
|--|------|--------|--------|--------|---------|----------|
| Total Program Cost (\$)                        | 0    | 21,142 | 38,028 | 18,553 | 30,001  | 107,724  |
| Total Program Participants (#)                 | 0    | 0      | 2      | 0      | 1       | 3        |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 43,444 | 0      | 50,462  |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 39,100 | 0      | 45,416  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 0       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 0       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0       |          |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 20,905 | 0      | 103,886 | 591,587  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 0      | 0       | 0        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 0       | 0        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# NON-RESIDENTIAL SMALL MANUFACTURING

2019-2023

184,227 kWh/yr Average Net Savings Per Participant

## Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **62** customers, **21%** of planned participation



Achieved net annual energy savings of **11,422 MWh/year**, **84%** of planned energy savings



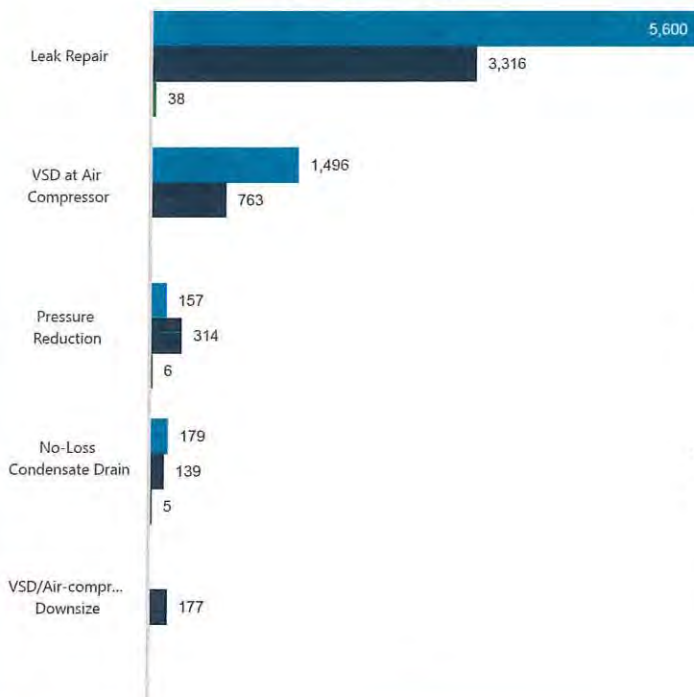
Spent **49%** of planned expenditures

## Measures

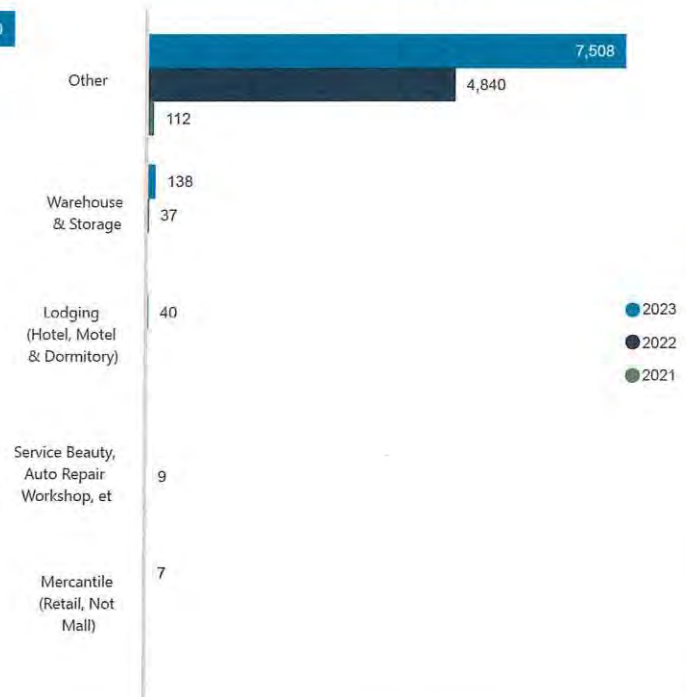
- Facility assessment
- Compressed air leak repair
- No loss condensate drains
- Efficient VSD compressors
- Cycling refrigerant dryers

| Category                                       | 2019    | 2020    | 2021    | 2022      | 2023      | Lifetime    |
|--|---------|---------|---------|-----------|-----------|-------------|
| Total Program Cost (\$)                        | 367,297 | 331,721 | 280,616 | 695,693   | 1,168,250 | 2,843,577   |
| Total Program Participants (#)                 | 0       | 0       | 1       | 19        | 42        | 62          |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 0       | 112,237 | 4,886,095 | 7,692,863 |             |
| Total Net Incremental Savings (kWh/yr)         | 0       | 0       | 101,013 | 4,397,486 | 6,923,577 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 0       | 23      | 582       | 928       |             |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 0       | 21      | 524       | 835       |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0       | 23      | 582       | 928       |             |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0       | 21      | 524       | 835       |             |
| Total Net Lifetime Savings (kWh)               | 0       | 0       | 24,707  | 1,256,488 | 9,400,486 | 140,899,270 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 0       | 21      | 545       | 1,380     | 1,380       |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0       | 21      | 545       | 1,380     | 1,380       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 571

## NON-RESIDENTIAL SMALL MANUFACTURING

2019-2023

94,487 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor

### Measures

- Facility assessment
- Compressed air leak repair
- No loss condensate drains
- Efficient VSD compressors
- Cycling refrigerant dryers



Enrolled 4 customers, 25% of planned participation



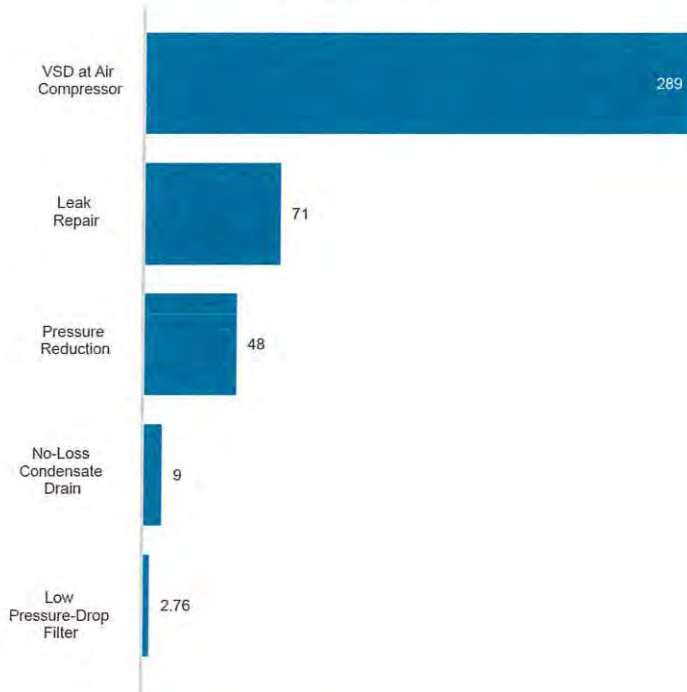
Achieved net annual energy savings of 377,948 kWh/year, 52% of planned energy savings



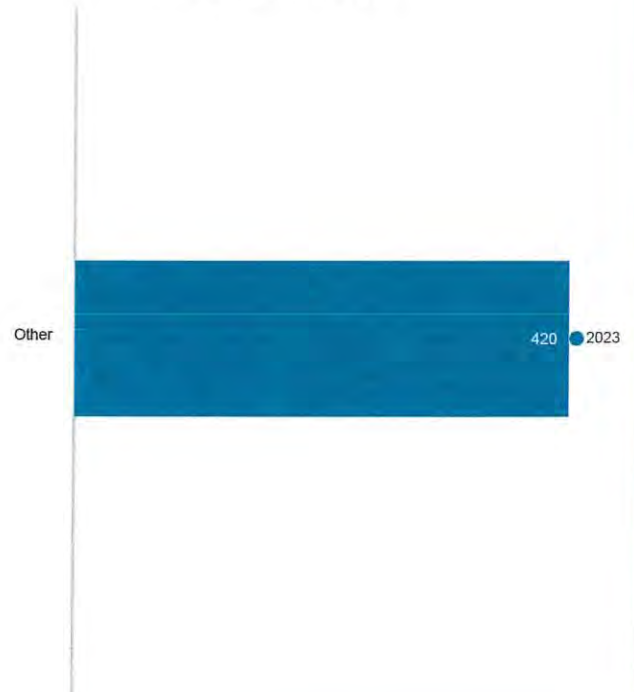
Spent 41% of planned expenditures

| Category                                       | 2019 | 2020   | 2021   | 2022   | 2023    | Lifetime  |
|--|------|--------|--------|--------|---------|-----------|
| Total Program Cost (\$)                        | 0    | 18,987 | 17,245 | 16,181 | 76,431  | 128,844   |
| Total Program Participants (#)                 | 0    | 0      | 0      | 0      | 4       | 4         |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 0      | 0      | 0      | 419,942 |           |
| Total Net Incremental Savings (kWh/yr)         | 0    | 0      | 0      | 0      | 377,948 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 46      |           |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 42      |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 46      |           |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 42      |           |
| Total Net Lifetime Savings (kWh)               | 0    | 0      | 0      | 0      | 258,767 | 4,663,542 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 0      | 0      | 0      | 42      | 42        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 42      | 42        |

TOTAL SAVING BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# Virginia

Case #: PUE-2018-00168

## NON-RESIDENTIAL WINDOW FILM

2019-2023

5,430 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor



Enrolled **86** customers, **0.02%** of planned participation



Achieved net annual energy savings of **466,946 kWh/year**, **6%** of planned energy savings



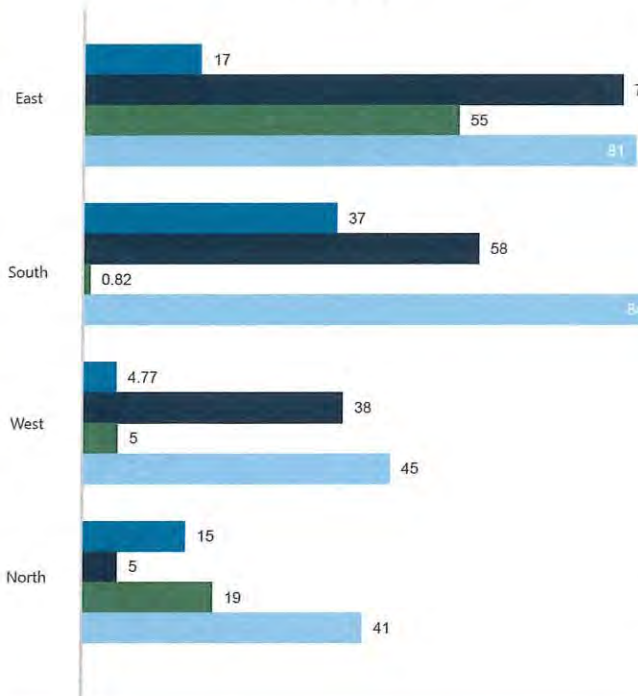
Spent **68%** of planned expenditures

### Measures

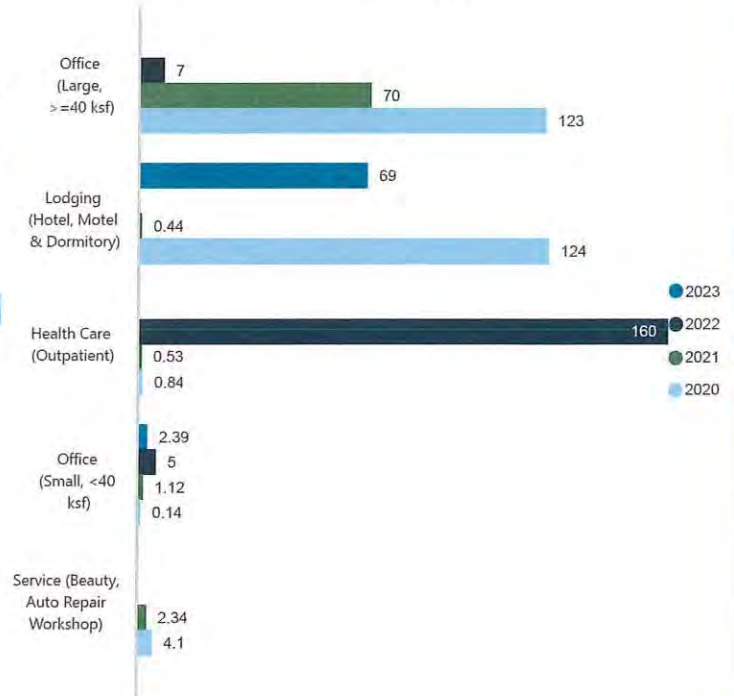
- Solar reduction window film

| Category                                       | 2019    | 2020    | 2021    | 2022    | 2023      | Lifetime  |
|--|---------|---------|---------|---------|-----------|-----------|
| Total Program Cost (\$)                        | 192,146 | 356,882 | 325,497 | 273,733 | 254,640   | 1,402,899 |
| Total Program Participants (#)                 | 0       | 22      | 19      | 28      | 17        | 86        |
| Total Gross Incremental Savings (kWh/yr)       | 0       | 250,377 | 79,659  | 180,296 | 73,351    |           |
| Total Net Incremental Savings (kWh/yr)         | 0       | 200,302 | 63,727  | 144,237 | 58,681    |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0       | 78      | 0       | 0       | 0         |           |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0       | 62      | 0       | 0       | 0         |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0       | 0       | 0       | 0       | 0         |           |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0       | 0       | 0       | 0       | 0         |           |
| Total Net Lifetime Savings (kWh)               | 0       | 117,854 | 370,378 | 650,428 | 1,099,141 | 4,670,466 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0       | 62      | 62      | 62      | 62        | 62        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0       | 0       | 0       | 0       | 0         | 0         |

TOTAL SAVINGS BY ORIENTATION (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)





# North Carolina

Docket #: E-22, Sub 570

## NON-RESIDENTIAL WINDOW FILM

2019-2023

6,974 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures
- Work must be completed by a participating contractor

### Measures

- Solar reduction window film



Enrolled **2** customers, **0.01%** of planned participation



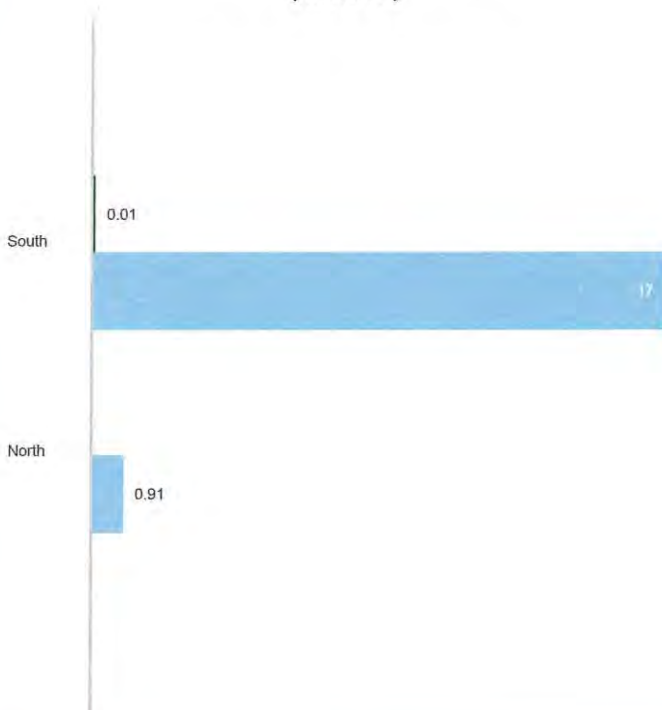
Achieved net annual energy savings of **13,948 kWh/year**, **3%** of planned energy savings



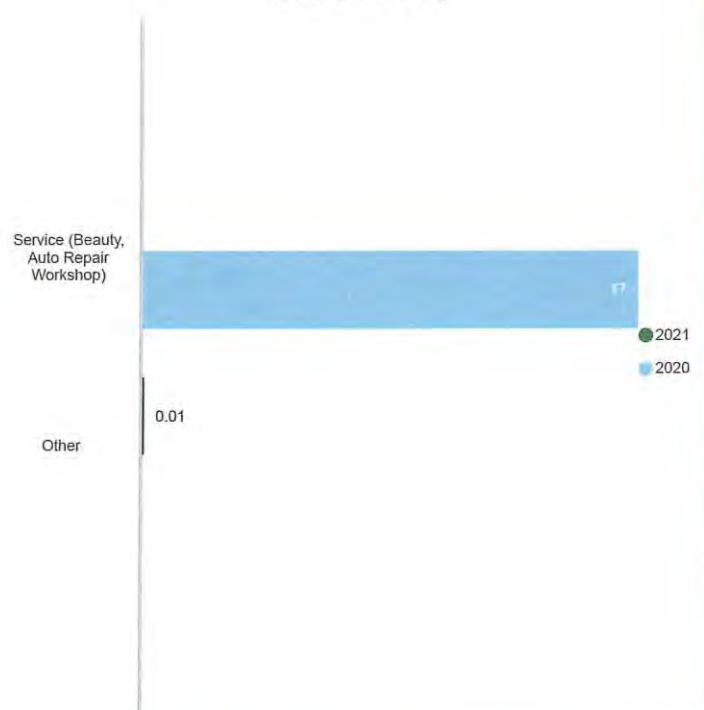
Spent **60%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021   | 2022   | 2023   | Lifetime |
|--|------|--------|--------|--------|--------|----------|
| Total Program Cost (\$)                        | 0    | 18,804 | 19,546 | 13,856 | 14,219 | 66,426   |
| Total Program Participants (#)                 | 0    | 1      | 1      | 0      | 0      | 2        |
| Total Gross Incremental Savings (kWh/yr)       | 0    | 17,430 | 6      | 0      | 0      |          |
| Total Net Incremental Savings (kWh/yr)         | 0    | 13,944 | 5      | 0      | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   | 0    | 5      | 0      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     | 0    | 4      | 0      | 0      | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   | 0    | 0      | 0      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     | 0    | 0      | 0      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               | 0    | 4,849  | 18,794 | 0      | 0      | 139,528  |
| Peak Net Lifetime Summer Demand Reduction (kW) | 0    | 4      | 4      | 0      | 0      | 4        |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0    | 0      | 0      | 0      | 0      | 0        |

**TOTAL SAVINGS BY ORIENTATION**  
(MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)



# Virginia

Case #: PUE-2018-00168

## NON-RESIDENTIAL MIDSTREAM ENERGY EFFICIENCY PRODUCTS

2020-2023

17,336 kWh/yr Average Net Savings Per Participant

### Eligibility

- Distributor or retailer operating in Virginia
- Distributor or retailer is required to discount the rebate-eligible equipment sold to the purchaser at the time-of-sale and must provide point-of-sale monthly data for all transactions of eligible energy efficiency equipment



Rebated **203** work orders that contained discounted energy efficiency measures, **23%** of planned participation

### Measures

- Electric Fryers
- Hot Food Holding Cabinets
- Griddles
- Convection and Combination Ovens
- Steam Cookers, Freezers, Refrigerators
- Packaged Terminal Air and Unitary Air Conditioners
- Unitary and Mini Split Heat Pumps
- Air Cooled and Water Cooled Chillers



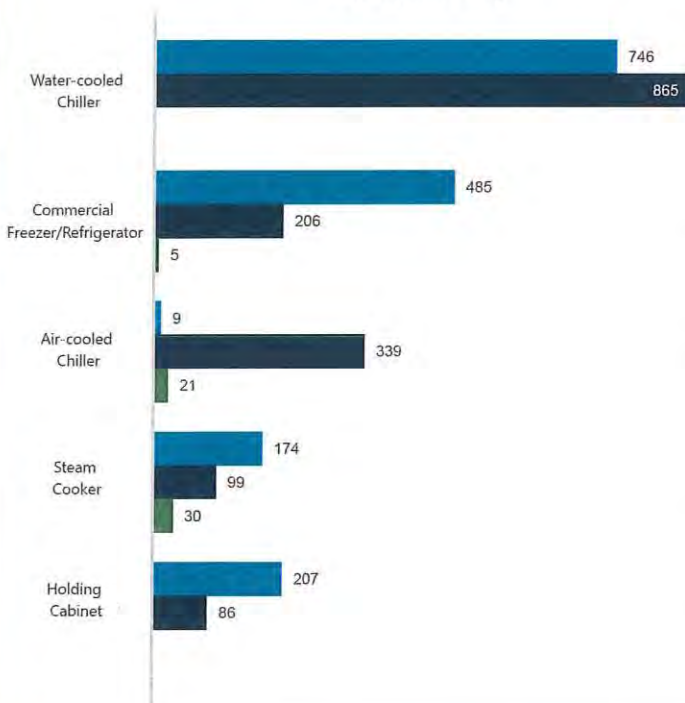
Achieved net annual energy savings of **3,519 MWh/year**, **31%** of planned energy savings



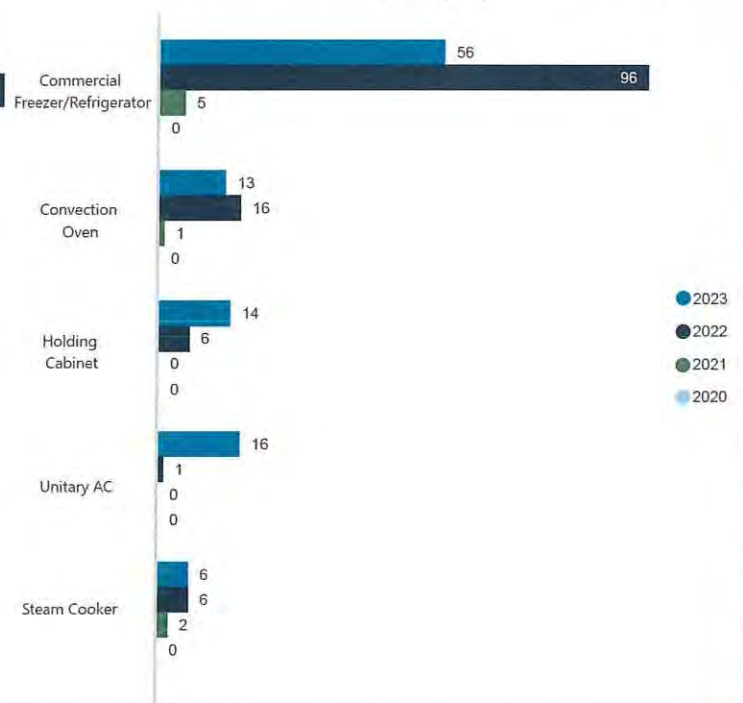
Spent **37%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022      | 2023      | Lifetime   |
|--|------|--------|---------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      | 46,145 | 488,674 | 845,079   | 717,250   | 2,097,148  |
| Total Program Participants (#)                 |      | 0      | 7       | 113       | 83        | 203        |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 65,116  | 1,624,787 | 2,220,361 |            |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 58,605  | 1,462,308 | 1,998,325 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 81      | 1,957     | 621       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 73      | 1,762     | 559       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 11      | 74        | 303       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 10      | 67        | 273       |            |
| Total Net Lifetime Savings (kWh)               |      | 0      | 5,901   | 393,482   | 3,073,418 | 63,211,180 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 73      | 1,835     | 2,394     | 2,394      |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 10      | 77        | 350       | 350        |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL PARTICIPANTS BY MEASURE TYPE  
TOP 5 (YR)



# Virginia

Case #: PUR-2019-00201

## NON-RESIDENTIAL MULTIFAMILY

2020-2023

9,988 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



Enrolled **34** customers, **1%** of planned participation



Achieved net annual energy savings of **339,606 kWh/year**, **4%** of planned energy savings



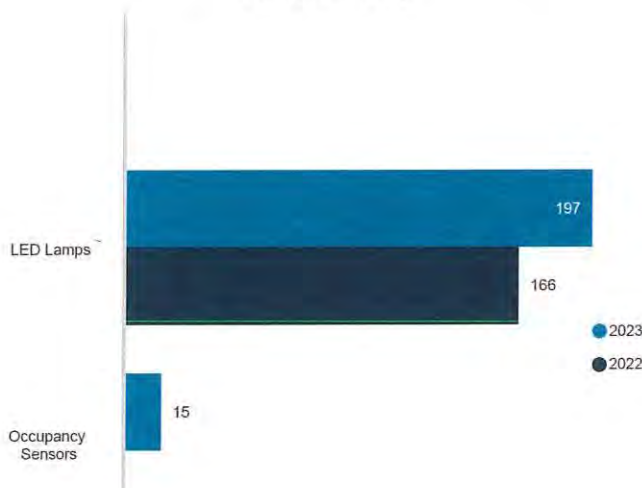
Spent **51%** of planned expenditures

### Measures

- On-site energy assessment of common areas
- Pipe insulation
- LED lamps
- Tune-up of heat pump system and/or central AC
- Installation of smart thermostats
- Air sealing, duct sealing, attic insulation
- Installation of ENERGY STAR® washers and dryers

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023    | Lifetime  |
|--|------|--------|---------|---------|---------|-----------|
| Total Program Cost (\$)                        |      | 28,431 | 201,595 | 173,987 | 310,611 | 714,624   |
| Total Program Participants (#)                 |      | 0      | 0       | 5       | 29      | 34        |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 0       | 165,606 | 211,734 |           |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 0       | 149,045 | 190,561 |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 18      | 4       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 16      | 4       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 18      | 7       |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 16      | 6       |           |
| Total Net Lifetime Savings (kWh)               |      | 0      | 0       | 5,648   | 205,726 | 2,909,204 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 16      | 20      | 20        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 16      | 23      | 23        |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2019-00201

## NON-RESIDENTIAL NEW CONSTRUCTION

2020-2023

3,234,344 kWh/yr Average Net Savings Per Participant

### Eligibility

- Non-residential customers for new construction or extensive renovation projects
- Non-residential customers except those who are exempt by statute, special contract, or opt out



The program participants engage during the design phase of the project. The long lead-time required to design and construct buildings may be one contributing factor to the lack of participation through 2022. Projects are expected to be completed in early 2023.

### Measures

- High performance interior lighting designs
- LED exterior lighting
- Efficient chillers and air-source heat pumps
- Chiller controls
- Efficient HVAC system controls
- Demand controlled ventilation
- Plug load management systems



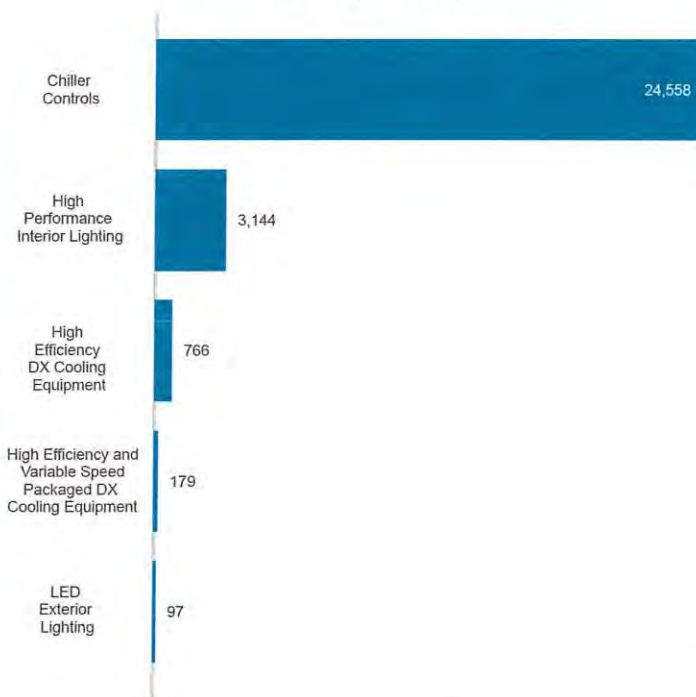
Achieved net annual energy savings of **25,875 MWh/year, 331%** of planned energy savings



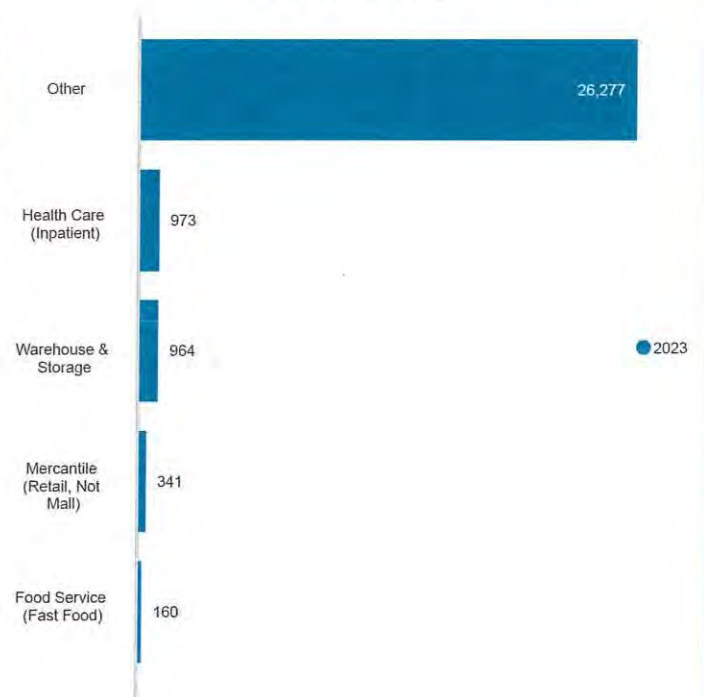
Spent **65%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021    | 2022    | 2023       | Lifetime    |
|--|------|--------|---------|---------|------------|-------------|
| Total Program Cost (\$)                        |      | 27,624 | 603,899 | 477,704 | 2,241,471  | 3,350,697   |
| Total Program Participants (#)                 |      | 0      | 0       | 0       | 8          | 8           |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 0       | 0       | 28,749,726 |             |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 0       | 0       | 25,874,754 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 0       | 0       | 3,216      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 0       | 0       | 2,895      |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 0       | 0       | 3,611      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 0       | 0       | 3,250      |             |
| Total Net Lifetime Savings (kWh)               |      | 0      | 0       | 0       | 9,989,031  | 388,225,899 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 0       | 0       | 2,895      | 2,895       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 0       | 0       | 3,250      | 3,250       |

**TOTAL SAVING BY MEASURE TYPE**  
TOP 5 (MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 591

## NON-RESIDENTIAL NEW CONSTRUCTION

2020-2023

39,446 kWh/yr Average Net Savings Per Participant

### Eligibility

- Non-residential customers for new construction or extensive renovation projects
- Non-residential customers except those who are exempt by statute, special contract, or opt out



The program participants engage during the design phase of the project. The long lead-time required to design and construct buildings may be one contributing factor to the lack of participation through 2022. Projects are expected to be completed in early 2023.

### Measures

- High performance interior lighting designs
- LED exterior lighting
- Efficient chillers and air-source heat pumps
- Chiller controls
- Efficient HVAC system controls
- Demand controlled ventilation
- Plug load management systems



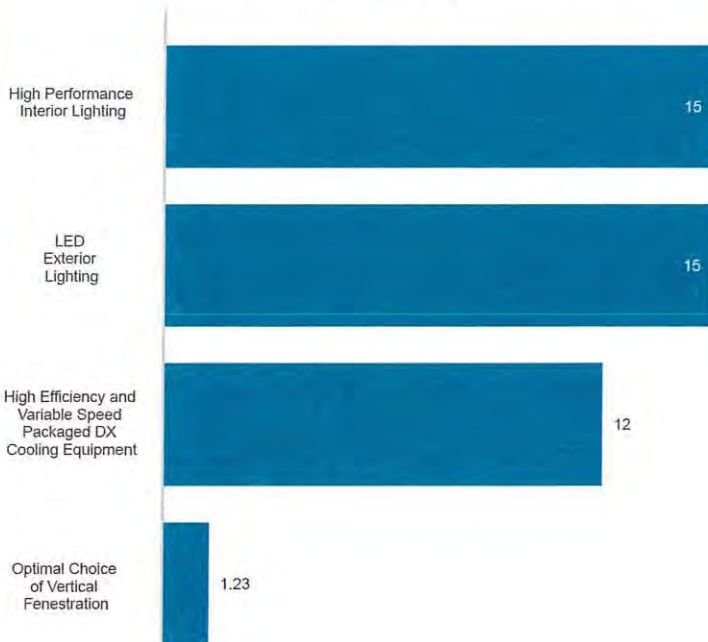
Achieved net annual energy savings of **39,446 kWh/year, 8%** of planned energy savings



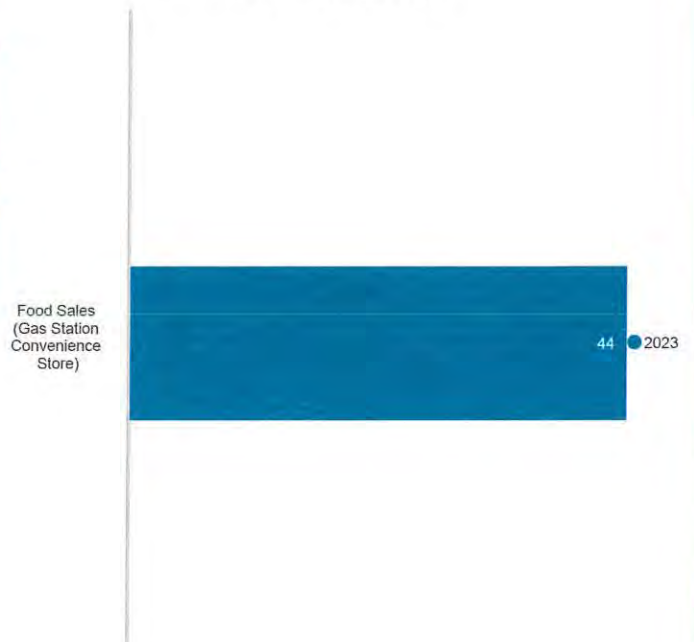
Spent **34%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022   | 2023   | Lifetime |
|--|------|------|--------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      | 27,089 | 30,963 | 51,331 | 109,383  |
| Total Program Participants (#)                 |      |      | 0      | 0      | 1      | 1        |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 0      | 43,829 |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 0      | 39,446 |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 0      | 8      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 0      | 7      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0      | 7      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0      | 6      |          |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 0      | 11,993 | 602,851  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 0      | 7      | 7        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0      | 6      | 6        |

**TOTAL SAVING BY MEASURE TYPE**  
TOP 5 (MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2019-00201

## NON-RESIDENTIAL SMALL BUSINESS IMPROVEMENT ENHANCED

2020-2023

5,747 kWh/yr Average Net Savings Per Participant

### Eligibility

- Non-residential customers with privately-owned businesses in five or fewer locations
- Customer's monthly demand has not exceeded 100 kilowatts more than three times in the past 12 months
- Customer must be responsible for the electric bill and must be the owner of the facility or able to secure permission to complete measures

### Measures

- Energy efficient lighting solutions
- Unitary/split AC & HP upgrade
- Dual Enthalpy air-side economizer
- Programmable thermostat
- Duct testing and sealing
- Unitary/split AC & HP tune-up
- Refrigerant charge correction
- Compressed air leak repair



Enrolled **1,845** customers, **97%** of planned participation



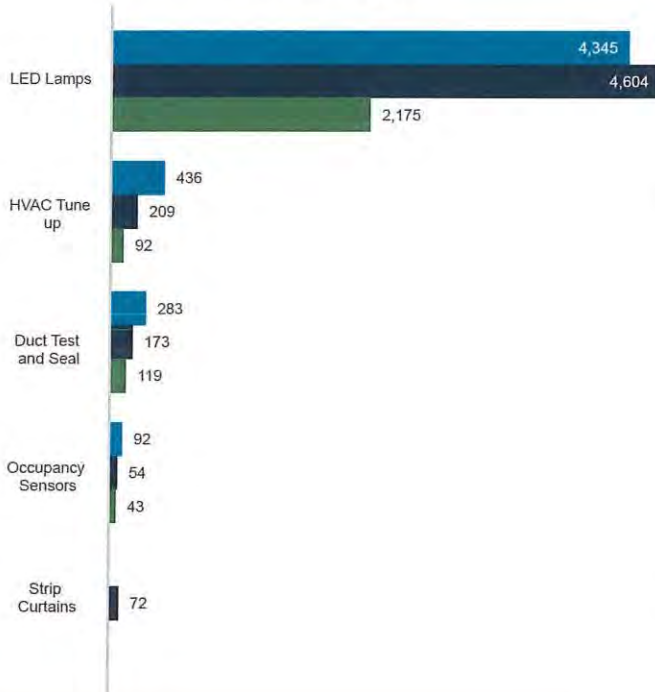
Achieved net annual energy savings of **10,604 MWh/year**, **38%** of planned energy savings



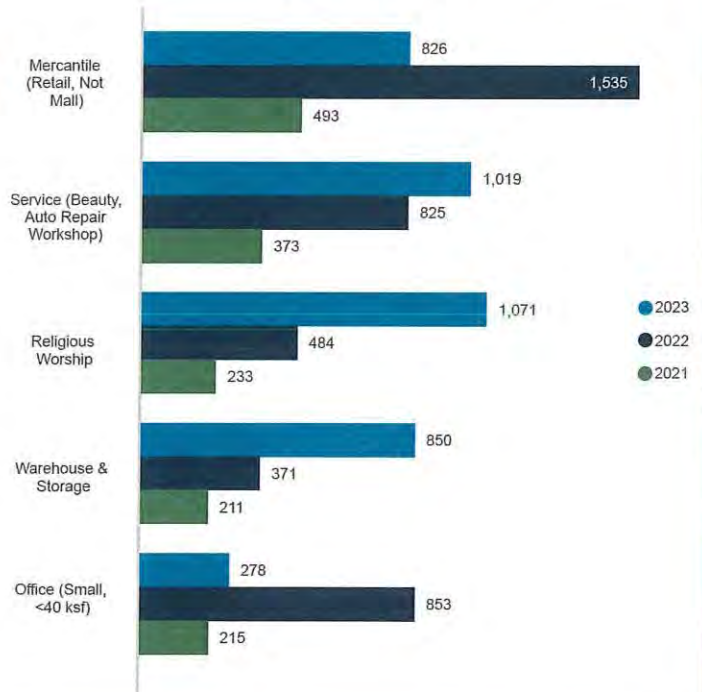
Spent **99%** of planned expenditures

| Category                                       | 2019 | 2020   | 2021      | 2022      | 2023       | Lifetime    |
|--|------|--------|-----------|-----------|------------|-------------|
| Total Program Cost (\$)                        |      | 56,290 | 2,443,713 | 3,445,530 | 4,901,879  | 10,847,412  |
| Total Program Participants (#)                 |      | 0      | 307       | 591       | 947        | 1,845       |
| Total Gross Incremental Savings (kWh/yr)       |      | 0      | 2,429,201 | 5,119,684 | 5,161,646  |             |
| Total Net Incremental Savings (kWh/yr)         |      | 0      | 2,131,262 | 4,490,565 | 3,981,709  |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      | 0      | 449       | 1,077     | 1,198      |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      | 0      | 354       | 833       | 956        |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      | 0      | 328       | 630       | 551        |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      | 0      | 253       | 478       | 422        |             |
| Total Net Lifetime Savings (kWh)               |      | 0      | 685,329   | 5,373,000 | 13,932,432 | 108,041,135 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      | 0      | 354       | 1,188     | 2,143      | 2,143       |
| Peak Net Lifetime Winter Demand Reduction (kW) |      | 0      | 253       | 731       | 1,153      | 1,153       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 596

## NON-RESIDENTIAL SMALL BUSINESS IMPROVEMENT ENHANCED

2020-2023

24,830 kWh/yr Average Net Savings Per Participant

### Eligibility

- Non-residential customers with privately-owned businesses in five or fewer locations
- Customer's monthly demand has not exceeded 100 kilowatts more than three times in the past 12 months
- Customer must be responsible for the electric bill and must be the owner of the facility or able to secure permission to complete measures

### Measures

- Energy efficient lighting solutions
- Unitary/split AC & HP upgrade
- Dual Enthalpy air-side economizer
- Programmable thermostat
- Duct testing and sealing
- Unitary/split AC & HP tune-up
- Refrigerant charge correction
- Compressed air leak repair



Enrolled **63** customers, **51%** of planned participation



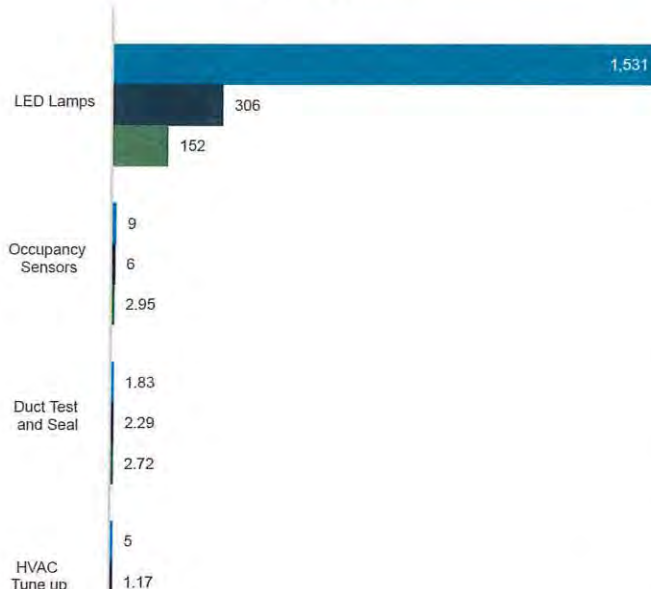
Achieved net annual energy savings of **1,564 MWh/year**, **88%** of planned energy savings



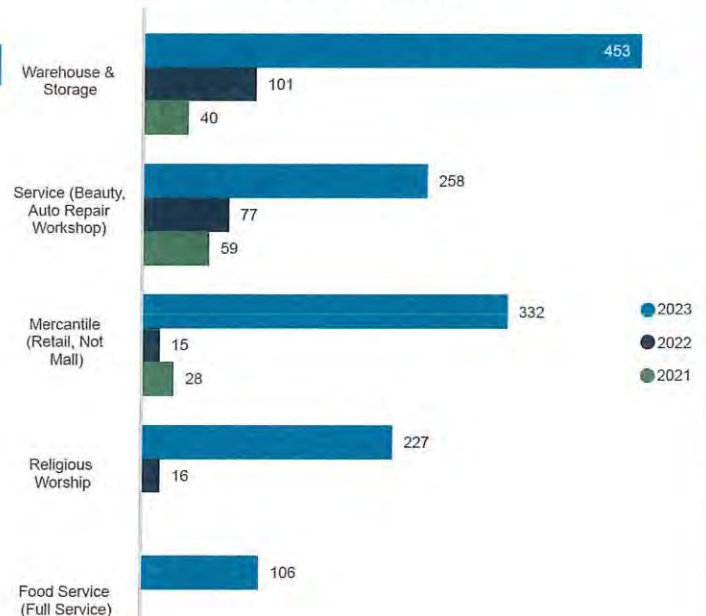
Spent **90%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021    | 2022    | 2023      | Lifetime   |
|--|------|------|---------|---------|-----------|------------|
| Total Program Cost (\$)                        |      |      | 82,440  | 145,320 | 385,554   | 613,314    |
| Total Program Participants (#)                 |      |      | 8       | 8       | 47        | 63         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 157,603 | 315,960 | 1,547,651 |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 137,636 | 275,832 | 1,150,834 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 30      | 67      | 224       |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 22      | 49      | 161       |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 16      | 28      | 171       |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 11      | 20      | 123       |            |
| Total Net Lifetime Savings (kWh)               |      |      | 33,222  | 322,333 | 1,227,397 | 15,922,148 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 22      | 71      | 232       | 232        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 11      | 32      | 155       | 155        |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)



# Virginia

Case #: PUR-2020-00274

## NON-RESIDENTIAL AGRICULTURAL ENERGY EFFICIENCY

2021-2023

519,961 kWh/yr Average Net Savings Per Participant

### Eligibility

- Agricultural facilities on a non-residential or residential rate
- Must be the owner of the facility or reasonably able to secure permission to complete measures

### Measures

- High volume low speed fans
- Automatic milker take off
- Poultry house fan VFD
- Circulation / ventilation fans
- Dust collection system fan VFD
- Low pressure irrigation and irrigation pump VFD
- Grain storage aeration fan controls
- Greenhouse ventilation fan VFD
- Greenhouse LED lighting
- Poultry LED
- Tobacco curing fan VFD



Enrolled 11 customers, 4% of planned participation



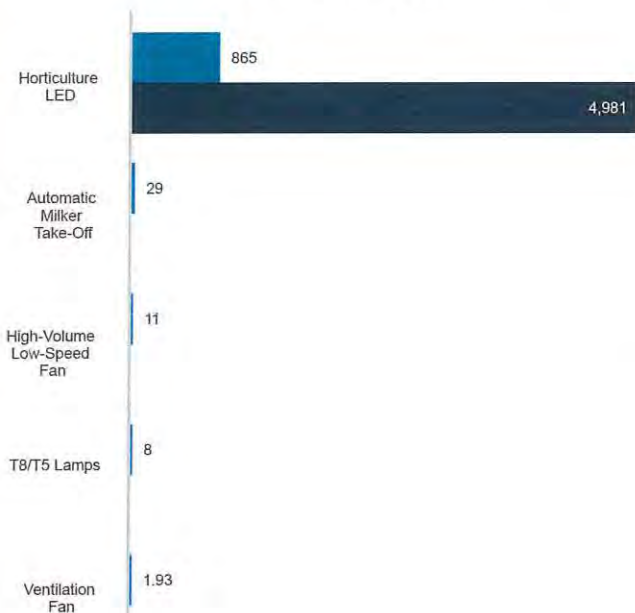
Achieved net annual energy savings of **5,720 MWh/year, 153%** of planned energy savings



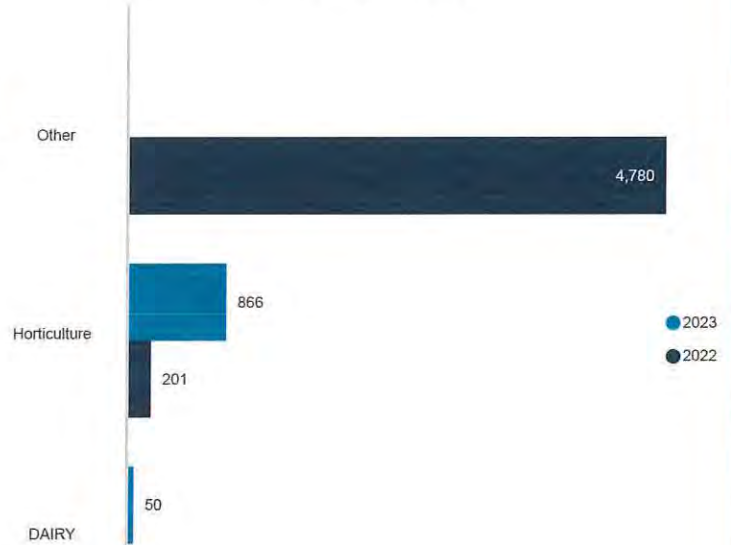
Spent **78%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022      | 2023      | Lifetime   |
|--|------|------|--------|-----------|-----------|------------|
| Total Program Cost (\$)                        |      |      | 20,770 | 471,081   | 885,158   | 1,377,009  |
| Total Program Participants (#)                 |      |      | 0      | 3         | 8         | 11         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 4,980,594 | 915,873   |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 4,831,176 | 888,397   |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 793       | 57        |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 770       | 55        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 0         | 10        |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 0         | 10        |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 487,960   | 5,602,959 | 63,048,276 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 770       | 825       | 825        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 0         | 10        | 10         |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



**TOTAL SAVINGS BY BUILDING TYPE**  
TOP 5 (MWH/YR)





# Virginia

Case #: PUR-2020-00274

## NON-RESIDENTIAL BUILDING AUTOMATION

2021-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Rebated DDC controls system must be new and installed in an existing building
- Both electric and gas heated sites are eligible
- Eligible sites must be a minimum of 50,000 square feet
- An assessment must be submitted in the design phase

### Measures

- Efficient building automation system programming and HVAC equipment controls



The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.



Achieved net annual energy savings of **0 kWh/year, 0%** of planned energy savings



Spent **43%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021  | 2022    | 2023    | Lifetime |
|--|------|------|-------|---------|---------|----------|
| Total Program Cost (\$)                        |      |      | 6,714 | 425,457 | 359,739 | 791,910  |
| Total Program Participants (#)                 |      |      | 0     | 0       | 0       |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 0       | 0       |          |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 0       | 0       |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 0       | 0       |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 0       | 0       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 0       | 0       |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 0       | 0       |          |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 0       | 0       |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 0       | 0       |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 0       | 0       |          |

# North Carolina

Docket #: E-22, Sub 614

## NON-RESIDENTIAL BUILDING AUTOMATION

2022-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Rebated DDC controls system must be new and installed in an existing building
- Both electric and gas heated sites are eligible
- Eligible sites must be a minimum of 50,000 square feet
- An assessment must be submitted in the design phase

### Measures

- Efficient building automation system programming and HVAC equipment controls



The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.



Achieved net annual energy savings of **0 kWh/year, 0%** of planned energy savings



Spent **41%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023   | Lifetime |
|--|------|------|------|-------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 9,301 | 22,806 | 32,107   |
| Total Program Participants (#)                 |      |      |      | 0     | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 0      |          |

# Virginia

Case #: PUR-2020-00274

## NON-RESIDENTIAL BUILDING OPTIMIZATION

2021-2023

313,140 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



Enrolled **45** customers, **80%** of planned participation

### Measures

- Schedule lighting
- Schedule HVAC
- Temperature setback
- Temperature setup
- Discharge air temp reset
- Static pressure reset
- Dual enthalpy economizer
- Condensing water temp reset
- Variable air volume box minimum
- Coil cleaning
- Pump pressure reduction
- Scheduling non-HVAC equipment
- Custom retro-commissioning measure
- Outdoor air reduction
- Chilled water reset



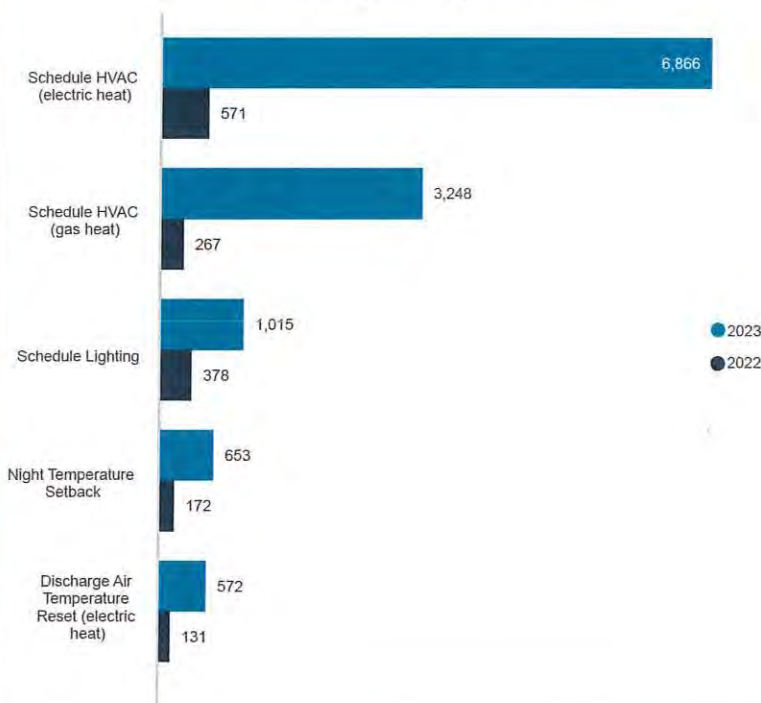
Achieved net annual energy savings of **14,091 MWh/year**, **153%** of planned energy savings



Spent **83%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021  | 2022      | 2023       | Lifetime   |
|--|------|------|-------|-----------|------------|------------|
| Total Program Cost (\$)                        |      |      | 6,996 | 503,402   | 1,252,932  | 1,763,329  |
| Total Program Participants (#)                 |      |      | 0     | 2         | 43         | 45         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 1,797,882 | 13,859,112 |            |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 1,618,094 | 12,473,201 |            |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 47        | 316        |            |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 42        | 284        |            |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 12        | 23         |            |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 11        | 20         |            |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 116,478   | 7,740,162  | 71,068,675 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 42        | 327        | 327        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 11        | 31         | 31         |

**TOTAL SAVINGS BY MEASURE TYPE**  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 615

## NON-RESIDENTIAL BUILDING OPTIMIZATION

2022-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



Enrolled **0** customers, **0%** of planned participation

### Measures

- Schedule lighting
- Schedule HVAC
- Temperature setback
- Temperature setup
- Discharge air temp reset
- Static pressure reset
- Dual enthalpy economizer
- Condensing water temp reset
- Variable air volume box minimum
- Coil cleaning
- Pump pressure reduction
- Scheduling non-HVAC equipment
- Custom retro-commissioning measure
- Outdoor air reduction
- Chilled water reset



Achieved net annual energy savings of **0 kWh/year**, **0%** of planned energy savings



Spent **43%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022  | 2023   | Lifetime |
|--|------|------|------|-------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 9,639 | 29,044 | 38,684   |
| Total Program Participants (#)                 |      |      |      | 0     | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0     | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0     | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0     | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0     | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0     | 0      |          |

# Virginia

Case #: PUR-2020-00274

## NON-RESIDENTIAL ENGAGEMENT

2021-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.

### Measures

- Building operator training



Achieved net annual energy savings of **0 kWh/year, 0%** of planned energy savings



Spent **39%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021  | 2022    | 2023    | Lifetime  |
|--|------|------|-------|---------|---------|-----------|
| Total Program Cost (\$)                        |      |      | 8,109 | 599,509 | 547,994 | 1,155,612 |
| Total Program Participants (#)                 |      |      | 0     | 0       | 0       |           |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0     | 0       | 0       |           |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0     | 0       | 0       |           |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0     | 0       | 0       |           |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0     | 0       | 0       |           |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0     | 0       | 0       |           |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0     | 0       | 0       |           |
| Total Net Lifetime Savings (kWh)               |      |      | 0     | 0       | 0       |           |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0     | 0       | 0       |           |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0     | 0       | 0       |           |

# North Carolina

Docket #: E-22, Sub 616

## NON-RESIDENTIAL ENGAGEMENT

2022-2023

0 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



The nature of the type of measures offered in this program requires long project lead-time, which may be one contributing factor to the lack of completed projects in 2023.

### Measures

- Building operator training



Achieved net annual energy savings of **0 kWh/year, 0%** of planned energy savings



Spent **34%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022   | 2023   | Lifetime |
|--|------|------|------|--------|--------|----------|
| Total Program Cost (\$)                        |      |      |      | 15,022 | 34,327 | 49,349   |
| Total Program Participants (#)                 |      |      |      | 0      | 0      |          |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0      | 0      |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0      | 0      |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0      | 0      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0      | 0      |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0      | 0      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0      | 0      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0      | 0      |          |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0      | 0      |          |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0      | 0      |          |

# Virginia

Case #: PUR-2020-00274

## NON-RESIDENTIAL PRESCRIPTIVE ENHANCED

2021-2023

21,726 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



Enrolled **961** customers, **85%** of planned participation

### Measures

- Cooking Appliances
- Domestic Heat Pump Water Heater
- Pre-Rinse Sprayer
- Commercial Laundry Appliances
- Commercial Kitchen Appliances
- Electronically Commutated Motor
- VSD on Kitchen Exhaust Fan
- Refrigeration Appliances and Optimizations
- Parking Deck Ventilation
- Duct Test and Seal
- Air Conditioning Tune-up
- Heat Pump Pool Heater
- Pool Spa Cover
- Variable Speed Pool Pump
- Guest Room Occupancy



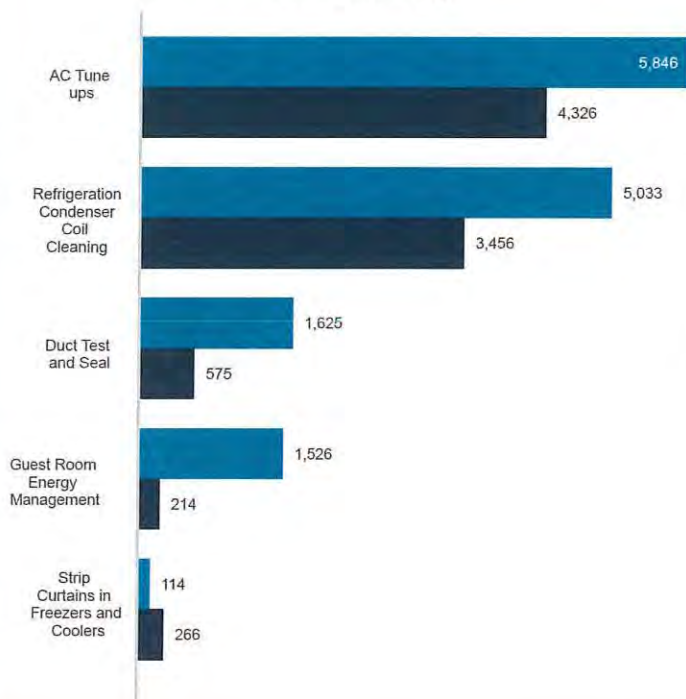
Achieved net annual energy savings of **20,879 MWh/year**, **69%** of planned energy savings



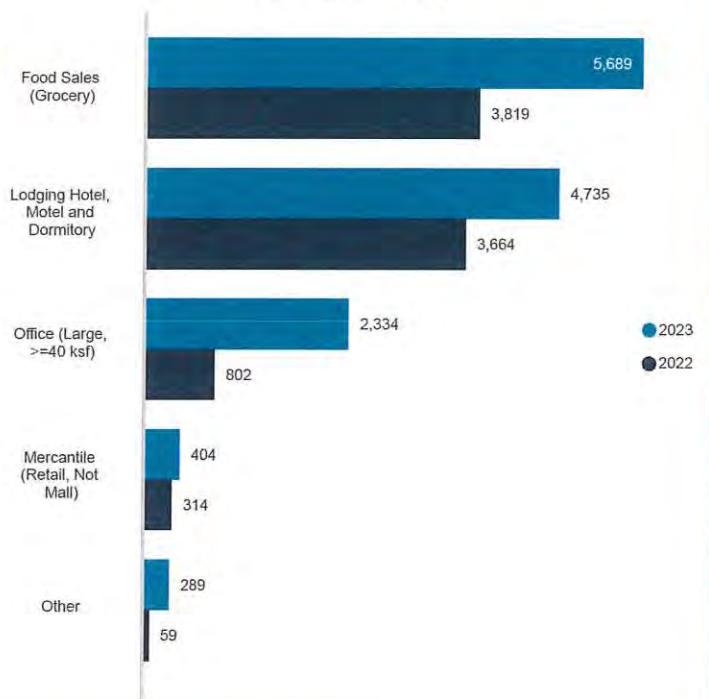
Spent **192%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021   | 2022      | 2023       | Lifetime    |
|--|------|------|--------|-----------|------------|-------------|
| Total Program Cost (\$)                        |      |      | 33,042 | 5,652,798 | 10,122,762 | 15,808,601  |
| Total Program Participants (#)                 |      |      | 0      | 366       | 595        | 961         |
| Total Gross Incremental Savings (kWh/yr)       |      |      | 0      | 8,848,159 | 14,350,446 |             |
| Total Net Incremental Savings (kWh/yr)         |      |      | 0      | 7,963,344 | 12,915,402 |             |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      | 0      | 5,598     | 14,721     |             |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      | 0      | 5,038     | 13,249     |             |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      | 0      | 854       | 3,846      |             |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      | 0      | 768       | 3,461      |             |
| Total Net Lifetime Savings (kWh)               |      |      | 0      | 839,297   | 18,675,513 | 135,822,201 |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      | 0      | 5,038     | 18,287     | 18,287      |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      | 0      | 768       | 4,230      | 4,230       |

TOTAL SAVINGS BY MEASURE TYPE  
TOP 5 (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE  
TOP 5 (MWH/YR)



# North Carolina

Docket #: E-22, Sub 617

## NON-RESIDENTIAL PRESCRIPTIVE ENHANCED

2022-2023

1,539 kWh/yr Average Net Savings Per Participant

### Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or opt out
- Must be the owner of the facility or reasonably able to secure permission to complete measures



Enrolled **13** customers, **18%** of planned participation

### Measures

- Cooking Appliances
- Domestic Heat Pump Water Heater
- Pre-Rinse Sprayer
- Commercial Laundry Appliances
- Commercial Kitchen Appliances
- Electronically Commutated Motor
- VSD on Kitchen Exhaust Fan
- Refrigeration Appliances and Optimizations
- Parking Deck Ventilation
- Duct Test and Seal
- Air Conditioning Tune-up
- Heat Pump Pool Heater
- Pool Spa Cover
- Variable Speed Pool Pump
- Guest Room Occupancy



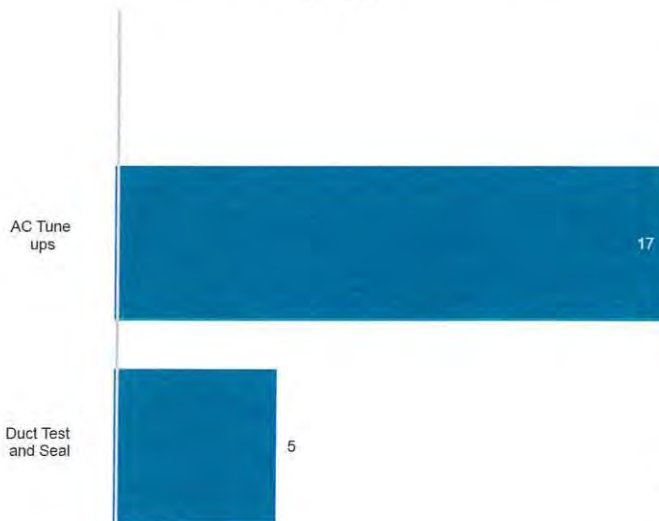
Achieved net annual energy savings of **20,003 kWh/year**, **1%** of planned energy savings



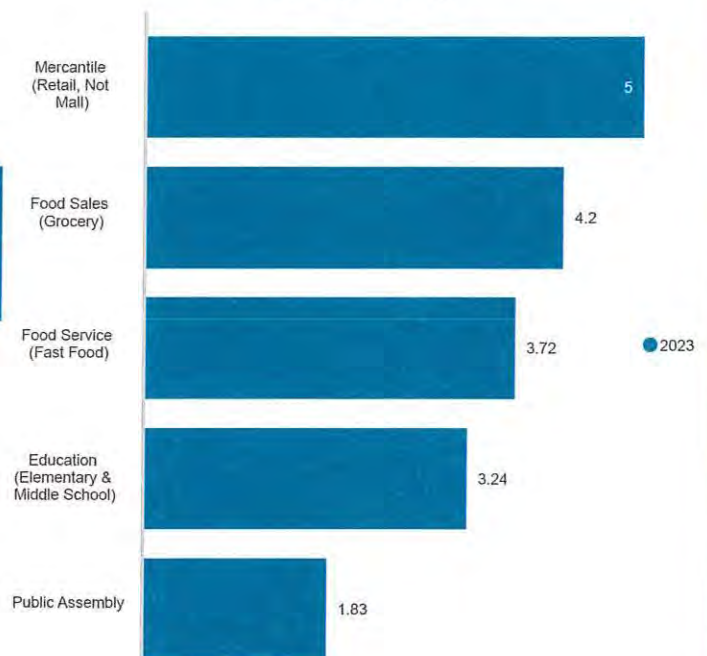
Spent **35%** of planned expenditures

| Category                                       | 2019 | 2020 | 2021 | 2022   | 2023    | Lifetime |
|--|------|------|------|--------|---------|----------|
| Total Program Cost (\$)                        |      |      |      | 21,735 | 102,393 | 124,127  |
| Total Program Participants (#)                 |      |      |      | 0      | 13      | 13       |
| Total Gross Incremental Savings (kWh/yr)       |      |      |      | 0      | 22,226  |          |
| Total Net Incremental Savings (kWh/yr)         |      |      |      | 0      | 20,003  |          |
| Peak Gross Inc. Summer Demand Reduction (kW)   |      |      |      | 0      | 10      |          |
| Peak Net Inc. Summer Demand Reduction (kW)     |      |      |      | 0      | 9       |          |
| Peak Gross Inc. Winter Demand Reduction (kW)   |      |      |      | 0      | 15      |          |
| Peak Net Inc. Winter Demand Reduction (kW)     |      |      |      | 0      | 14      |          |
| Total Net Lifetime Savings (kWh)               |      |      |      | 0      | 948     | 163,324  |
| Peak Net Lifetime Summer Demand Reduction (kW) |      |      |      | 0      | 9       | 9        |
| Peak Net Lifetime Winter Demand Reduction (kW) |      |      |      | 0      | 14      | 14       |

TOTAL SAVING BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE TOP 5 (MWH/YR)







**5 PEAK SHAVING**

**Table 5-1. Active peak shaving programs in 2023**

| DSM Phase              | Acronym | Program                       | VA | NC |
|------------------------|---------|-------------------------------|----|----|
| <b>Residential</b>     |         |                               |    |    |
| VIII                   | RTDR    | Smart Thermostat Rewards      | ✓  | ✓  |
|                        | REVDR   | EV Rewards                    | ✓  |    |
| IX                     | RWDR    | Water Savings Demand Response | ✓  | ✓  |
| <b>Non-Residential</b> |         |                               |    |    |
| II                     | DG      | Distributed Generation        | ✓  |    |

Figure 5-1 and Figure 5-2 show the cumulative count of peak shaving program participation in the two states, for the active programs, at the county level, through December 31, 2023. The deeper the color, the greater the participation and gross annualized energy savings.

In Virginia, the three jurisdictions with the highest participation in descending order, are Fairfax, Virginia Beach City and Chesterfield. In North Carolina, Dare, Halifax, and Currituck counties have the highest participation.

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Virginia Beach City, and Loudoun. In North Carolina, Dare, Currituck, and Halifax counties have the most energy savings.



Figure 5-1. Virginia and North Carolina Peak Shaving Program Participation, by County

Participants

- A. Less than 10
- B. 10 - 100
- C. 100 - 1,000
- D. 1,000 - 3,000
- E. More than 3,000

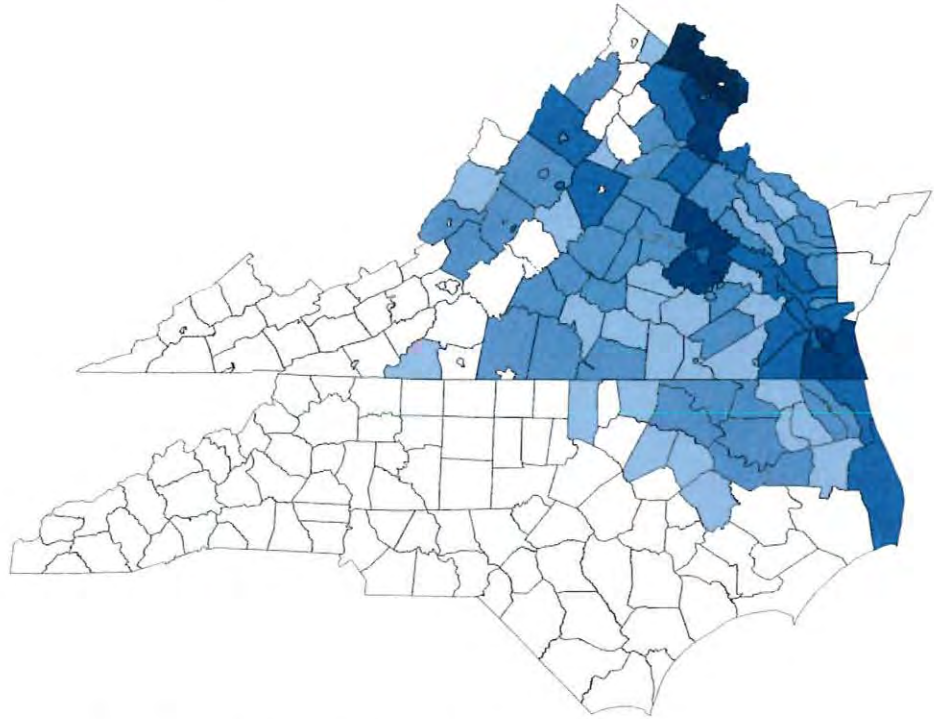
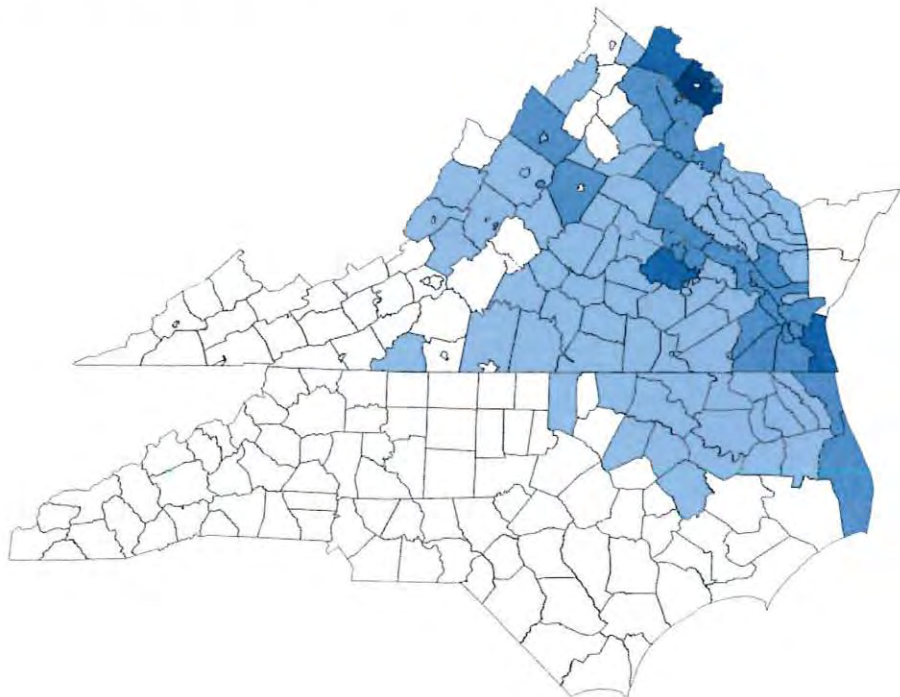


Figure 5-2. Virginia and North Carolina Peak Shaving Net Load Reduction, by County

Net Load Reduction

- A. Less than 100 kW
- B. 100 kW - 2,000 kW
- C. 2,000 kW - 5,000 kW
- D. 5,000 kW - 10,000 kW



## NON-RESIDENTIAL DISTRIBUTED GENERATION

2012-2023  
5.75 MW Average Net Savings Per Participant

### Eligibility

- Large non-residential customers with at least 200 kW of dispatchable generation
- One participant is defined as 1 megawatt (MW) of enrolled capacity
- A participating site may be counted as a fraction of a participant depending on enrolled generation



21 sites enrolled 5.75 MW



Achieved overall annual realization rate of 116%



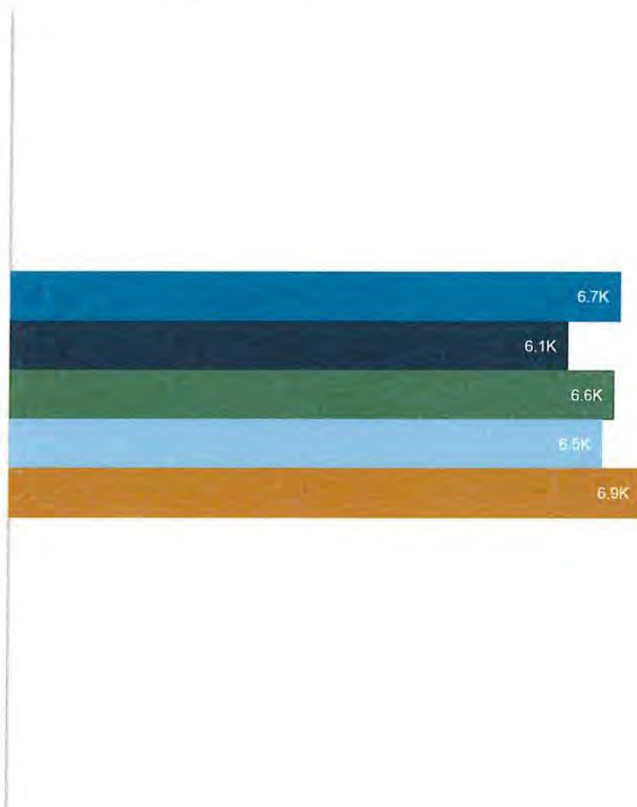
Spent 41% of planned expenditures

### Events

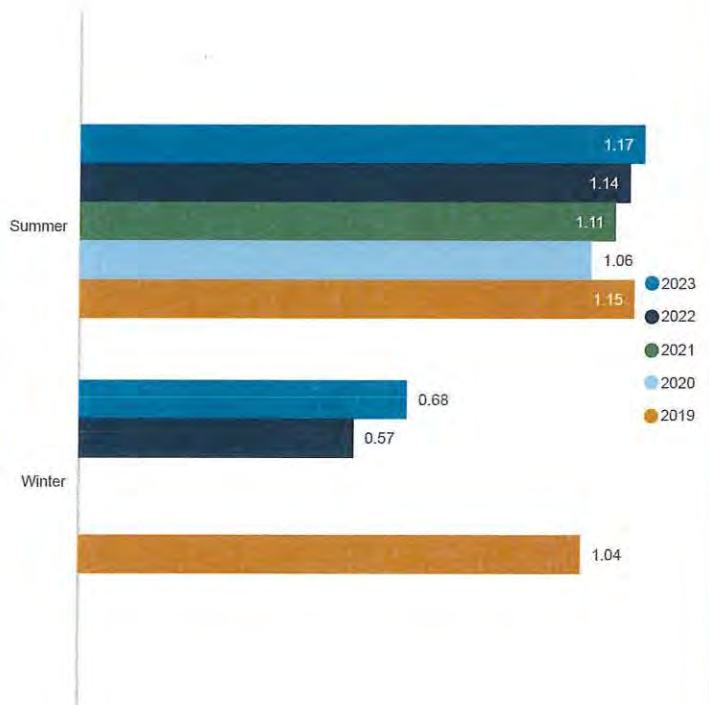
- When electric demand is high, DG sites operate backup generators to reduce load on the system
- 34 events were called in 2023

| Category                                 | 2019    | 2020    | 2021    | 2022    | 2023    |
|--|---------|---------|---------|---------|---------|
| Total Program Cost (\$)                  | 589,631 | 570,747 | 608,132 | 620,104 | 475,594 |
| Total Program Participants (adjusted)    | 6.1     | 6.1     | 6.0     | 5.9     | 5.8     |
| Dispatchable Peak Shaving Potential (kW) | 6,927   | 6,498   | 6,627   | 6,115   | 6,688   |
| Realization Rate                         | 113%    | 106%    | 111%    | 104%    | 116%    |

TOTAL DEMAND SAVINGS  
BY YEAR



REALIZATION RATE BY YEAR/SEASON  
MEASURED GENERATION / DISPATCHED GENERATION



# RESIDENTIAL SMART THERMOSTAT REWARDS

2020-2023  
1.16 kW/participant demand reduction potential

## Eligibility

- Single-family detached, attached, and manufactured homes with a heat pump or a central air conditioning system
- Residential customers who have a qualifying smart thermostat



Enrolled **33,314** customers, **119%** of planned participation



Achieved **38,494 kW** of dispatchable peak shaving potential, **86%** of planned potential



Spent **98%** of planned expenditures

## Measures

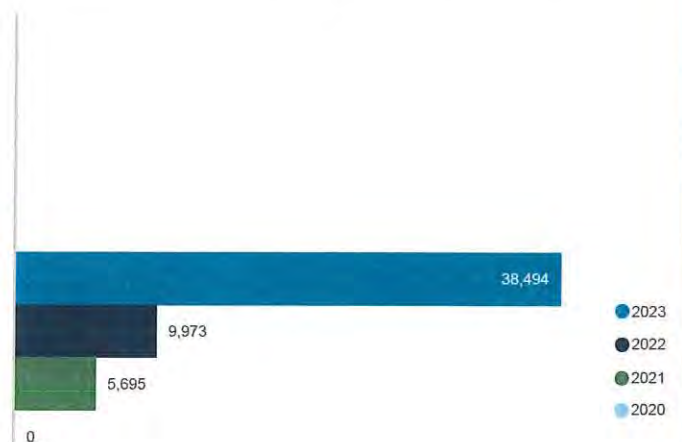
- Peak demand response program for central air conditioners and heat pumps

| Category   | 2019 | 2020   | 2021    | 2022      | 2023      |
|--|------|--------|---------|-----------|-----------|
| Total Program Cost (\$)                            |      | 96,743 | 724,644 | 1,143,292 | 2,160,129 |
| Total Program Participants (adjusted)              |      | 0      | 5,347   | 10,610    | 33,314    |
| Demand Reduction at Peak Planning (kW/participant) |      | 0.00   | 1.07    | 0.94      | 1.16      |
| Dispatchable Peak Shaving Potential (kW)           |      | 0      | 5,695   | 9,973     | 38,494    |

ESTIMATED PEAK SAVINGS POTENTIAL  
(KW PER PARTICIPANT)



DISPATCHABLE PEAK SHAVING POTENTIAL  
(KW)



• The SCC approved the Smart Thermostat Rewards Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

# North Carolina

Docket #: E-22, Sub 594

## RESIDENTIAL SMART THERMOSTAT REWARDS

2020-2023  
1.16 kW/participant demand reduction potential

### Eligibility

- Single-family detached, attached, and manufactured homes with a heat pump or a central air conditioning system
- Residential customers who have a qualifying smart thermostat



Enrolled **530** customers, **30%** of planned participation



Achieved **658 kW** of dispatchable peak shaving potential, **30%** of planned potential



Spent **52%** of planned expenditures

### Measures

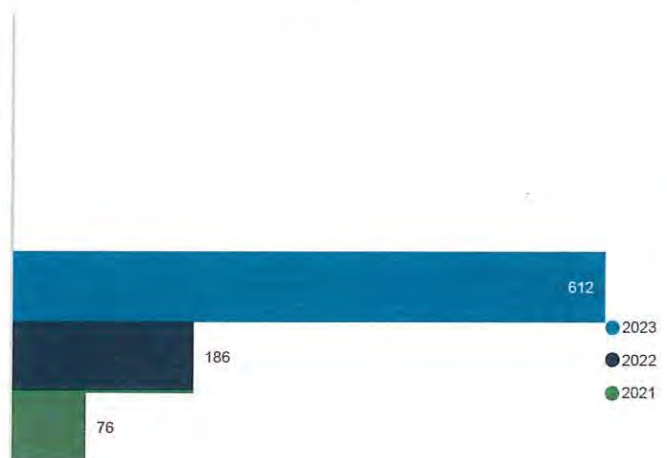
- Peak demand response program for central air conditioners and heat pumps

| Category   | 2019 | 2020 | 2021   | 2022   | 2023   |
|--|------|------|--------|--------|--------|
| Total Program Cost (\$)                            |      |      | 18,350 | 44,643 | 56,984 |
| Total Program Participants (adjusted)              |      |      | 71     | 198    | 530    |
| Demand Reduction at Peak Planning (kW/participant) |      |      | 1.07   | 0.94   | 1.16   |
| Dispatchable Peak Shaving Potential (kW)           |      |      | 76     | 186    | 612    |

**ESTIMATED PEAK SAVINGS POTENTIAL**  
(KW PER PARTICIPANT)



**DISPATCHABLE PEAK SHAVING POTENTIAL**  
(KW)



• The SCC approved the Smart Thermostat Rewards Program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the implementation schedule was delayed a year.

Case #: PUR-2019-00201

## RESIDENTIAL ELECTRIC VEHICLE REWARDS

2020-2023

0.20 kW/participant demand reduction potential

### Eligibility

- Customer must own an eligible Level 2 EV charger



Enrolled **1,491** customers, **117%** of planned participation

### Measures

- Reduced electric vehicle charging loads during periods of peak grid electricity demand



Achieved **606 kW** of demand reduction, **48%** of planned potential



Spent **20%** of planned expenditures

| Category   | 2019 | 2020   | 2021    | 2022    | 2023   |
|--|------|--------|---------|---------|--------|
| Total Program Cost (\$)                            |      | 14,034 | 182,492 | 178,959 | 70,466 |
| Total Program Participants (adjusted)              |      | 0      | 0       | 685     | 1,491  |
| Demand Reduction at Peak Planning (kW/participant) |      | 0.00   | 0.00    | 0.00    | 0.20   |
| Dispatchable Peak Shaving Potential (kW)           |      | 0      | 0       | 0       | 300    |

Virginia

Case #: PUR-2020-00274

## RESIDENTIAL WATER SAVINGS DEMAND RESPONSE

2021-2023  
0 kW/participant demand reduction potential

### Eligibility

- Customer must be responsible for the electric bill, own the residence or secure permission to perform the recommended improvements



Enrolled **8** customers, **0.43%** of planned participation



Achieved **0 kW** of demand reduction, **0%** of planned potential



Spent **29%** of planned expenditures

### Measures

- Domestic Heat Pump Water Heater
- Variable Speed Pool Pumps

| Category   | 2019 | 2020 | 2021  | 2022    | 2023   |
|--|------|------|-------|---------|--------|
| Total Program Cost (\$)                            |      |      | 9,167 | 149,786 | 93,391 |
| Total Program Participants (adjusted)              |      |      | 0     | 0       | 8      |
| Demand Reduction at Peak Planning (kW/participant) |      |      | 0.00  | 0.00    | 0.00   |
| Dispatchable Peak Shaving Potential (kW)           |      |      | 0     | 0       | 0      |

# North Carolina

Docket #: E-22, Sub 620

## RESIDENTIAL WATER SAVINGS DEMAND RESPONSE

2020-2023  
0 kW/participant demand reduction potential

### Eligibility

- Customer must be responsible for the electric bill, own the residence or secure permission to perform the recommended improvements



Enrolled 0 customers, 0% of planned participation



Achieved 0 kW of demand reduction, 0% of planned potential



Spent 34% of planned expenditures

### Measures

- Domestic Heat Pump Water Heater
- Variable Speed Pool Pumps

| Category   | 2019 | 2020 | 2021 | 2022  | 2023  |
|--|------|------|------|-------|-------|
| Total Program Cost (\$)                            |      |      |      | 2,910 | 5,572 |
| Total Program Participants (adjusted)              |      |      |      | 0     | 0     |
| Demand Reduction at Peak Planning (kW/participant) |      |      |      | 0.00  | 0.00  |
| Dispatchable Peak Shaving Potential (kW)           |      |      |      | 0     | 0     |





## ABOUT DNV

DNV is an independent assurance and risk management provider operating in more than 100 countries. Through its broad experience and deep expertise, DNV advances safety and sustainable performance, sets industry standards, and inspires and invents solutions.

We provide assurance to the entire energy value chain through our advisory, monitoring, verification, and certification services. As the world's leading resource of independent energy experts and technical advisors, we help industries and governments navigate the many complex, interrelated transitions taking place globally and regionally in the energy industry. We are committed to realizing the goals of the Paris Agreement and helping our customers transition faster to a deeply decarbonized energy system.

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**Appendix A. Compliance Matrix**

| Item No. | Reporting Items  | Required In  | Required in EMV Summary? | Level  | Location in EM&V Report   |
|----------|--|--|--------------------------|--|---|
| 1        | DE Dashboard   | SCC EM&V Order* p.19   | No                       | Portfolio  | Executive Summary   |
| 2        | Progress towards GISA proposed spending targets  | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 3        | Projections towards GISA proposed spending targets   | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 4        | Actual spending on a portfolio level   | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 5        | The share of total spending on DSM Programs designed to benefit low income, elderly, or disabled individuals, or veterans  | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 6        | Progress towards VCEA energy savings targets   | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 7        | Projections towards VCEA energy savings targets  | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 8        | Actual energy savings on a portfolio level (net and gross)   | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 9        | Energy savings from all programs as a share of total sales   | SCC EM&V Order p.19  | No                       | Portfolio  | Executive Summary   |
| 10       | Demand savings on a portfolio level (net and gross)  | SCC EM&V Order p.19  | Yes                      | Portfolio  | Executive Summary   |
| 11       | Actual spending on a program level   | SCC EM&V Order p.19, VCEA-   | Yes                      | Program  | Executive Summary   |
| 12       | Actual energy savings on a program level (net and gross)   | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 13       | Lifetime energy savings on a program level (net and gross)   | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 14       | Demand savings on a program level (net and gross)  | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 15       | Program operation years  | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 16       | Program budgets  | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 17       | Program spending as a percentage of budget   | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 18       | Program participation  | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 19       | Program cost per customer  | SCC EM&V Order p.19  | Yes                      | Program  | Executive Summary   |
| 20       | DSM-related emissions reductions   | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 21       | *other quantifiable benefits of each program*  | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 22       | Total customer bill savings  | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 23       | Administrative costs by program  | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 24       | Avoided costs  | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 25       | Program cost-effectiveness results   | SCC EM&V Order p.19, VCEA  | Yes                      | Program  | Executive Summary   |
| 26       | Number of Measures   | SCC EM&V Order p.17  | No                       | Program  | Executive Summary   |
| 27       | EM&V Plans   | SCC EM&V Rule# 5-318-30  | No                       | Program  | Appendix E. Evaluation, Measurement and Verification Plans  |
| 28       | Comparison to originally approved estimated savings for the measures or programs that were approved by the Commission  | SCC EM&V Rule 5-318-50 F   | No                       | Program  | Appendix J. Program Performance Indicator Tables for Virginia 2010-2023<br>Appendix K. Program Performance Indicator Tables for North Carolina 2010-2023  |
| 29       | Actual cost incurred by utility and each EM&V contractor for development of most recent EM&V plan and administration of EM&V activities for reporting period   | SCC EM&V Rule 5-318-50 H   | Yes                      | Program  | Appendices J and K  |
| 30       | Annual (net and gross) energy savings  | VCEA   | Program                  | Appendices J and K   |   |
| 31       | Capacity savings (net and gross)   | VCEA   | Program                  | Appendices J and K   |   |
| 32       | Lifecycle capacity savings (net and gross)   | VCEA   | Program                  | Appendix L. Incremental and Cumulative Participation, Gross, and Net Energy Savings, and Non-coincident Gross Peak Demand Reductions |   |
| 33       | The above metrics aggregated for residential programs  | SCC EM&V Order p.19  | Yes                      | Sector   | Executive Summary   |
| 34       | The above metrics aggregated for non-residential programs  | SCC EM&V Order p.19  | Yes                      | Sector   | Executive Summary   |
| 35       | Relevant workpapers, support documents, assumptions, and equations used to develop M&V methods of measures or programs   | SCC EM&V Rule 5-318-40 B   | No                       | Measure  | Appendix F. Dominion Energy Technical Reference Manual version 2023   |
| 36       | Measure-level estimates of kWh, kW (net, gross)  | SCC EM&V Rule 5-318-40 C   | No                       | Measure  | Appendices J and K  |
| 37       | Changes to or variances from originally approved measure-level inputs and assumptions estimates for DSM program or measure shall be quantified   | SCC EM&V Rule 5-318-50 C   | No                       | Measure  | N/A for Phase I - IX programs. Appendix F. for Phase X<br>Appendix D. Methodologies<br>Appendix E. Evaluation, Measurement, and Verification Plans<br>Appendix F. Dominion Energy Technical Reference Manual 2023<br>Appendix G. Non-Residential Distributed Generation Impact Evaluation<br>Appendix H. Residential Thermostat Reward Impact Evaluation<br>Appendix I. Residential Electric Vehicle Reward Impact Evaluation |
| 38       | Describe method by which measured data was collected to include at minimum:<br>Sampling plan<br>Statistical calculation upon which reported data is based when applicable<br>Explain eligibility requirements for each rate schedule to which measure or programs are offered  | SCC EM&V Rule 5-318-50 D   | No                       | Program / Measure  | Appendices J and K  |
| 39       | Comparison of measured annual measure or program savings estimates to annual usage of average rate schedule usage in each rate schedule  | SCC EM&V Rule 5-318-50 F   | No                       | Rate schedule  | Appendices J and K  |
| 40       | Comparison of measured annual measure or program savings estimates to annual usage of and eligible customer in each rate schedule  | SCC EM&V Rule 5-318-50 F   | No                       | Rate schedule  | Appendices J and K  |
| 41       | Description of the controls undertaken by the utility to verify proper installation of measures or programs, as appropriate  | SCC EM&V Rule 5-318-50 G   | No                       | Program / Measure  | Available upon request  |
| 42       | Utilities shall require contractors and subcontractors will be implementing measures or programs, if applicable and practicable, to record details of serviced or replaced equipment, to include at minimum:<br>1. Nameplate efficiency rating;<br>2. Serial numbers;<br>3. Model numbers<br>This information will be made available to Staff upon request | SCC EM&V Rule 5-318-50 G   | No                       | N/A - Program  | Available upon request  |
| 43       | Make report easily and publicly accessible online  | VCEA   | No                       | Measure, Program, Portfolio  | N/A   |
| 44       | If applicable, implement changes and/or corrections to vintage savings recommended by the Public Staff and accepted by the NCUC in the previous DSMEE cost recovery case   | See e.g. Public Staff testimony in NCUC Docket No. E-22, Sub 604 (Oct. 26, 2021)                       | No                       | Measure, Program, Portfolio  | N/A   |
| 45       | Demonstrate results achieved by DSMEE measure/programs   | NCUC Rule R8-68(3)(iv)   | No                       | Measure, Program, Portfolio  | This instant report   |
| 46       | Evaluate, measure, verify, and validate energy and peak demand savings estimated in program application  | NCUC Rule R8-68(3)(v)<br>See NCUC Rule R8-69(f)(1)(i)-(ii)   | No                       | Program, Portfolio   | This instant report   |
| 47       | Track cost savings to support annual cost recovery cases   | NCUC Rule R8-69(f)(1)(i)-(ii)  | No                       | Program, Portfolio   | N/A   |
| 48       | Verify kWh sales reductions and kW savings to support recoverable net lost revenues  | NC DSMEE Cost Recovery Mechanism, Item No. 59 (NCUC Docket No. E-22, Sub 464, May 2017) (NC Mechanism) | No                       | Program  | Appendices F, J, K, and L   |
| 49       | Verify net dollar savings to support any portfolio performance incentive ("PPI") for each vintage year   | NC Mechanism, Item No. 48  | No                       | Program, Portfolio   | This instant report, and general EM&V activities<br>Appendix D. Methodologies<br>Appendix E. Evaluation, Measurement, and Verification Plans<br>Appendix F. Dominion Energy Technical Reference Manual 2023<br>Appendix G. Non-Residential Distributed Generation Impact Evaluation<br>Appendix H. Residential Thermostat Reward Impact Evaluation<br>Appendix I. Residential Electric Vehicle Reward Impact Evaluation       |
| 50       | Be based on industry-accepted protocols for the particular program or measure  | NC Mechanism, Item No. 45  | No                       | Measure, Program, Portfolio  | Appendices J and K  |
| 51       | Include the updated cost/benefit analysis of the DSM programs, along with a comparison of the updated cost/benefit analysis to the original cost/benefit analysis as well as all other cost/benefit analyses from prior EM&V Reports.  | SCC 2021 DSM Final Order p. 10-11 <sup>a</sup>   | No                       | Program  | Appendices J and K  |

\* SCC EM&V Order, Final Order to SCC Case No. PUR-2020-00156, October 27, 2021. <https://scc.virginia.gov/DocketSearch/caseDocs/141015>  
 ~ VCEA Code of Virginia, Title 58, Public Service Companies, Chapter 23, Virginia Electric Utility Regulation Act, April 11, 2020. <https://lis.virginia.gov/cgi-bin/legp604.exe?201+sum+HB1526>  
 # EM&V Rule 5-318-50G, January 2018. <https://law.lis.virginia.gov/admincode/title20/agency5/chapter318/section50/>  
 ^ SCC 2021 DSM Final Order to SCC Case No. PUR-2021-00247, August 10, 2022. <https://www.scc.virginia.gov/docketsearch/caseDocs/142611>





EM&V REPORT  
**Appendix B**

Dominion Energy  
Public Version

June 12, 2024  
Prepared by DNV Energy Insights USA (DNV)





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**1 INTRODUCTION**

This supplement to the evaluation, measurement, and verification report contains detailed information about each active program offered to Dominion Energy customers in program year 2023.

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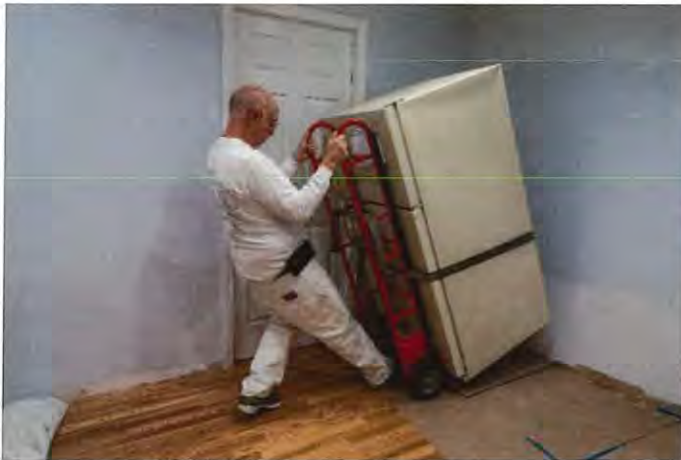


## 2 ENERGY EFFICIENCY-RESIDENTIAL ENERGY SERVICES

### 2.1 Residential Appliance Recycling – Virginia and North Carolina

#### 2.1.1 Program description

The Residential Appliance Recycling Program provides incentives to residential customers for recycling old, inefficient refrigerators and freezers. A multimedia campaign (printed materials, digital ads) creates program awareness and encourages participation from eligible customers. The program offers an incentive payment of \$20 per eligible appliance



coupled with a convenient and environmentally optimal removal and disposal service. To qualify for the program, Dominion Energy customers must currently receive Electric Supply Service and Electric Delivery Service in accordance with a residential rate schedule, be the party responsible for the electric bill, and be the owner of the refrigerator or freezer. Also, the refrigerator or freezer must be in use, at least ten years old, between 10 and 32 cubic feet, and in working condition to be eligible for the program. Dominion Energy customers can recycle up to two units.

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019 (Case No.

PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on July 1, 2019.<sup>1</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 569).

Participation began in September 2019. In 2021, a new implementation vendor took over the program. The program made a strong recovery in 2022. In 2023 participation tapered off during the latter half of the year.<sup>2</sup> The program was closed at the end of 2023 with SCC approval (August 3, 2023). From 2019 through 2023, the program recycled 6,602 refrigerators or freezers which generated 4,609 gross annual MWh of energy savings.

#### 2.1.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-1 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation.

**Table 2-1. Residential Appliance Recycling Program planning initial assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 60%                   |
| Measure life (years)   | 8                     |
| Gross average annual energy savings (kWh/year) per participant             | 7842                  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.09                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.09                  |

<sup>1</sup> [Virginia Residential Appliance Recycling Program Terms and Conditions](#)

<sup>2</sup> Program operations were subsequently interrupted and ultimately ceased due to vendor issues.



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| Assumption   | Value |
|--|-------|
| Net average annual energy savings per participant (kWh/year)             | 470   |
| Net average summer coincident peak demand reduction (kW) per Participant | 0.05  |
| Net average winter coincident peak demand reduction (kW) per Participant | 0.05  |
| Average rebate per participant (\$US)                                    | \$20  |

### 2.1.3 Assessment of program progress toward plan

The next section describes the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.1.3.1 Key Virginia program data

Table 2-2 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-2. Virginia Residential Appliance Recycling Program performance indicators (2019–2023)<sup>3</sup>**

| Category                             | Item                            | 2021         | 2022         | 2023         | Program total (2019–2023) |
|--------------------------------------|---------------------------------|--------------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |              |              |              |                           |
|                                      | Direct Implementation           |              |              |              |                           |
|                                      | Direct EM&V                     |              |              |              |                           |
|                                      | Indirect Other (Administrative) | \$10,451     | \$29,331     | \$39,546     | \$117,170                 |
| Total Costs (\$)                     | Total <sup>4</sup>              | \$222,880    | \$702,471    | \$585,278    | \$2,368,625               |
|                                      | Planned                         | \$1,784,868  | \$1,808,701  | \$1,802,231  | \$8,319,044               |
|                                      | Variance                        | -\$1,561,988 | -\$1,106,229 | -\$1,216,953 | -\$5,950,379              |
|                                      | Annual % of Planned             | 12%          | 39%          | 32%          | 28%                       |

<sup>3</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>4</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category  | Item                                     | 2021      | 2022      | 2023      | Program total (2019–2023) |
|---|--|-----------|-----------|-----------|---------------------------|
| <b>Participants</b>                                       | Total (Gross)                            | 0         | 2,478     | 1,532     | 6,561                     |
|   | Planned (Gross)                          | 8,930     | 8,930     | 8,930     | 40,945                    |
|   | Variance                                 | -8,930    | -6,452    | -7,398    | -34,384                   |
|   | Annual % of Planned (Gross)              | 0%        | 28%       | 17%       | 16%                       |
| <b>Installed Energy Savings (kWh/year)</b>                | Total Gross Deemed Savings               | 0         | 1,467,578 | 988,970   | 4,580,152                 |
|   | Realization Rate                         | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment              | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Savings                   | 0         | 1,467,578 | 988,970   | 4,580,152                 |
|   | Net-to-Gross Ratio <sup>5</sup>          | 60%       | 60%       | 60%       | 60%                       |
|   | Net-to-Gross Adjustment                  | 0         | -587,031  | -395,588  | -1,832,061                |
|   | Net Adjusted Savings                     | 0         | 880,547   | 593,382   | 2,748,091                 |
|   | Planned Savings (Net)                    | 4,201,800 | 4,201,800 | 4,201,800 | 19,265,700                |
|   | Annual % Toward Planned Savings (Net)    | 0%        | 21%       | 14%       | 14%                       |
|   | Avg. Savings per Participant (Gross)     | N/A       | 592       | 646       | 698                       |
|   | Avg. Savings per Participant (Net)       | N/A       | 355       | 387       | 419                       |
| <b>Installed Summer Demand Reduction (kW)</b>             | Total Gross Deemed Demand                | 0         | 220       | 148       | 686                       |
|   | Realization Rate                         | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment              | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                    | 0         | 220       | 148       | 686                       |
|   | Net-to-Gross Ratio <sup>5</sup>          | 60%       | 60%       | 60%       | 60%                       |
|   | Net-to-Gross Adjustment                  | 0         | -88       | -59       | -274                      |
|   | Net Adjusted Demand                      | 0         | 132       | 89        | 411                       |
|   | Planned Demand (Net)                     | 480       | 480       | 480       | 2,199                     |
|   | Annual % Toward Planned Demand (Net)     | 0%        | 27%       | 19%       | 19%                       |
|   | Avg. Peak Demand per Participant (Gross) | N/A       | 0         | 0         | 0                         |
|   | Avg. Demand per Participant (Net)        | N/A       | 0         | 0         | 0                         |
| <b>Installed Winter Demand Reduction (kW)<sup>6</sup></b> | Total Gross Deemed Demand                | 0         | 70        | 47        | 117                       |
|   | Realization Rate                         | N/A       | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment              | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                    | 0         | 70        | 47        | 117                       |

<sup>5</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 76% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.

<sup>6</sup> The winter demand reduction (kW) values were omitted in the program year 2022 report, though there were specifications to calculate these values for this program in the PY2022 Technical Reference Manual (TRM), listed in APPENDIX F. The winter demand reduction (kW) was reported as 0 kW in 2022. Prior



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| Category                                     | Item                                     | 2021   | 2022   | 2023   | Program total (2019–2023) |
|--|--|--------|--------|--------|---------------------------|
|  | Net-to-Gross Ratio <sup>5</sup>          | 60%    | 60%    | 60%    | 60%                       |
|  | Net-to-Gross Adjustment                  | 0      | -28    | -19    | -47                       |
|  | Net Adjusted Demand                      | 0      | 42     | 28     | 70                        |
|  | Planned Demand (Net)                     | 480    | 480    | 480    | 1,439                     |
|  | Annual % Toward Planned Demand (Net)     | 0%     | 9%     | 6%     | 5%                        |
|  | Avg. Peak Demand per Participant (Gross) | N/A    | 0      | 0      | 0                         |
|  | Avg. Demand per Participant (Net)        | N/A    | 0      | 0      | 0                         |
| <b>Cumulative Annual Program Performance</b> | \$Admin. per Participant (Gross)         | \$19   | \$15   | \$18   | \$18                      |
|  | \$Admin. per kWh/year (Gross)            | \$0.02 | \$0.02 | \$0.03 | \$0.03                    |
|  | \$Admin. per kW (Gross)                  | \$152  | \$144  | \$171  | \$171                     |
|  | \$EM&V per Total Costs (\$)              | 13.9%  | 10.8%  | 11.0%  | 11.0%                     |
|  | \$Rebate per Participant (Gross)         | \$20   | \$20   | \$20   | \$20                      |

**2.1.3.2 Key North Carolina program data**

Table 2-3 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-3. North Carolina Residential Appliance Recycling Program performance indicators (2020–2023).<sup>7</sup>**

| Category                                    | Item                            | 2021      | 2022      | 2023      | Program total (2020–2023) |
|---|---------------------------------|-----------|-----------|-----------|---------------------------|
| <b>Operations and Management Costs (\$)</b> | Direct Rebate                   |           |           |           |                           |
|   | Direct Implementation           |           |           |           |                           |
|   | Direct EM&V                     |           |           |           |                           |
|   | Indirect Other (Administrative) | \$542     | \$1,057   | \$1,668   | \$4,147                   |
| <b>Total Costs (\$)</b>                     | Total <sup>8</sup>              | \$11,552  | \$25,314  | \$24,687  | \$78,823                  |
|   | Planned                         | \$111,062 | \$115,406 | \$110,716 | \$453,315                 |
|   | Variance                        | -\$99,510 | -\$90,092 | -\$86,029 | -\$374,492                |
|   | Annual % of Planned             | 10%       | 22%       | 22%       | 17%                       |

to 2021, winter demand reduction (kW) was not calculated for any programs . These values are displayed as "-" or dashes to indicate they were not a metric being estimated. In 2021, the program paused and had no participation, so winter demand reduction was 0 kW. The 2022 gross winter demand reduction (kW) increased from 0 kW to 70 kW and 2022 net winter demand reduction (kW) increased from 0 to 42 kW after the correction.

<sup>7</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>8</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                                      | Item                                     | 2021    | 2022    | 2023    | Program total (2020–2023) |
|---|--|---------|---------|---------|---------------------------|
| <b>Participants</b>                           | Total (Gross)                            | 0       | 19      | 22      | 41                        |
|   | Planned (Gross)                          | 570     | 570     | 570     | 2,280                     |
|   | Variance                                 | -570    | -551    | -548    | -2,239                    |
|   | Annual % of Planned (Gross)              | 0%      | 3%      | 4%      | 2%                        |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings               | 0       | 14,260  | 15,059  | 29,319                    |
|   | Realization Rate                         | 100%    | 100%    | 100%    | 100%                      |
|   | Realization Rate Adjustment              | 0       | 0       | 0       | 0                         |
|   | Adjusted Gross Savings                   | 0       | 14,260  | 15,059  | 29,319                    |
|   | Net-to-Gross Ratio <sup>5</sup>          | 60%     | 60%     | 60%     | 60%                       |
|   | Net-to-Gross Adjustment                  | 0       | -5,704  | -6,024  | -11,728                   |
|   | Net Adjusted Savings                     | 0       | 8,556   | 9,036   | 17,592                    |
|   | Planned Savings (Net)                    | 268,200 | 268,200 | 268,200 | 1,072,800                 |
|   | Annual % Toward Planned Savings (Net)    | 0%      | 3%      | 3%      | 2%                        |
|   | Avg. Savings per Participant (Gross)     | N/A     | 751     | 685     | 715                       |
|   | Avg. Savings per Participant (Net)       | N/A     | 450     | 411     | 429                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Installed Demand Reduction (kW)          | 0       | 2       | 2       | 4                         |
|   | Realization Rate                         | 100%    | 100%    | 100%    | 100%                      |
|   | Realization Rate Adjustment              | 0       | 0       | 0       | 0                         |
|   | Adjusted Gross Demand                    | 0       | 2       | 2       | 4                         |
|   | Net-to-Gross Ratio <sup>5</sup>          | 60%     | 60%     | 60%     | 60%                       |
|   | Net-to-Gross Adjustment                  | 0       | -1      | -1      | -2                        |
|   | Net Adjusted Demand                      | 0       | 1       | 1       | 3                         |
|   | Planned Demand (Net)                     | 31      | 31      | 31      | 122                       |
|   | Annual % Toward Planned Demand (Net)     | 0%      | 4%      | 4%      | 2%                        |
|   | Avg. Peak Demand per Participant (Gross) | N/A     | 0       | 0       | 0                         |
|   | Avg. Demand per Participant (Net)        | N/A     | 0       | 0       | 0                         |

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| Category                                      | Item                                     | 2021  | 2022    | 2023  | Program total (2020–2023) |
|---|--|-------|---------|-------|---------------------------|
| <b>Installed Winter Demand Reduction (kW)</b> | Installed Demand Reduction (kW)          | 0     | 1       | 1     | 1                         |
|   | Realization Rate                         | 100%  | 100%    | 100%  | 100%                      |
|   | Realization Rate Adjustment              | 0     | 0       | 0     | 0                         |
|   | Adjusted Gross Demand                    | 0     | 1       | 1     | 1                         |
|   | Net-to-Gross Ratio <sup>5</sup>          | 60%   | 60%     | 60%   | 60%                       |
|   | Net-to-Gross Adjustment                  | 0     | -0      | -0    | -1                        |
|   | Net Adjusted Demand                      | 0     | 0       | 0     | 1                         |
|   | Planned Demand (Net)                     | 31    | 31      | 31    | 92                        |
|   | Annual % Toward Planned Demand (Net)     | 0%    | 1%      | 1%    | 1%                        |
|   | Avg. Peak Demand per Participant (Gross) | N/A   | 0       | 0     | 0                         |
|   | Avg. Demand per Participant (Net)        | N/A   | 0       | 0     | 0                         |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)         | N/A   | \$130   | \$101 | \$101                     |
|   | \$Admin. per kWh/year (Gross)            | N/A   | \$0     | \$0   | \$0                       |
|   | \$Admin. per kW (Gross)                  | N/A   | \$1,162 | \$945 | \$945                     |
|   | \$EM&V per Total Costs (\$)              | 24.7% | 18.0%   | 17.4% | 17.4%                     |
|   | \$Rebate per Participant (Gross)         | N/A   | \$20    | \$20  | \$20                      |



**2.1.3.3 Additional Virginia program data**

Figure 2-1 and Figure 2-2 show participation and gross annual energy savings by measure and year, in Virginia. The definition of participants for the Residential Appliance Recycling Program is the count of appliances recycled per unique account number, with a maximum of two appliances per account. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

A total of 6,561 appliances were recycled through the program in Virginia from 2019 to 2023 (Figure 2-1). Approximately 82% of the recycled units were refrigerators and 18% were freezers. From 2019 through 2023, the Residential Appliance Recycling program had 4,580,152 kWh/year in gross annual energy savings in Virginia (Figure 2-2). Of that, 80% of the gross annual savings resulted from refrigerators and 20% from freezers.

**Figure 2-1. Virginia Residential Appliance Recycling Program participation by measure and year<sup>9</sup>**

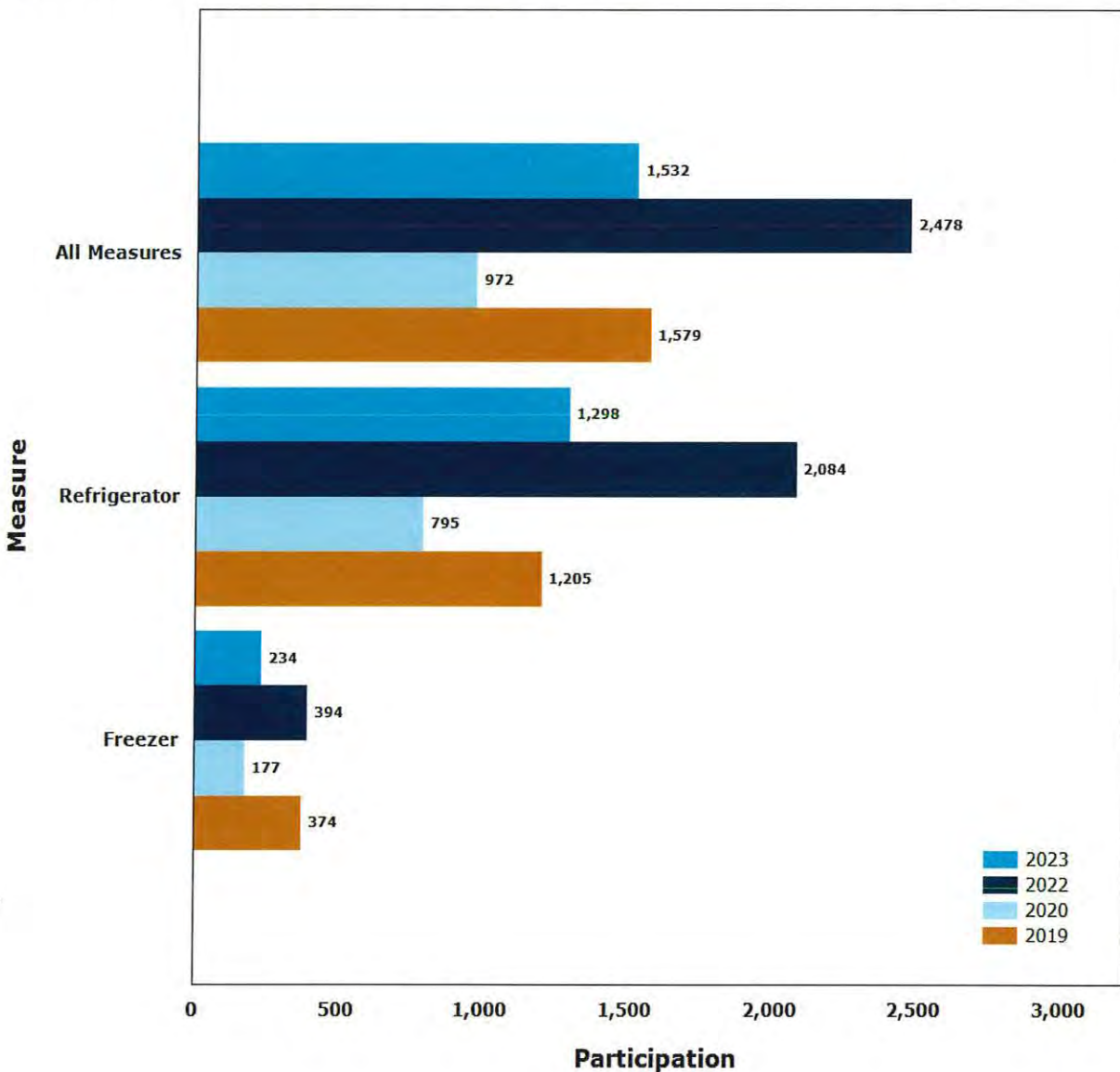
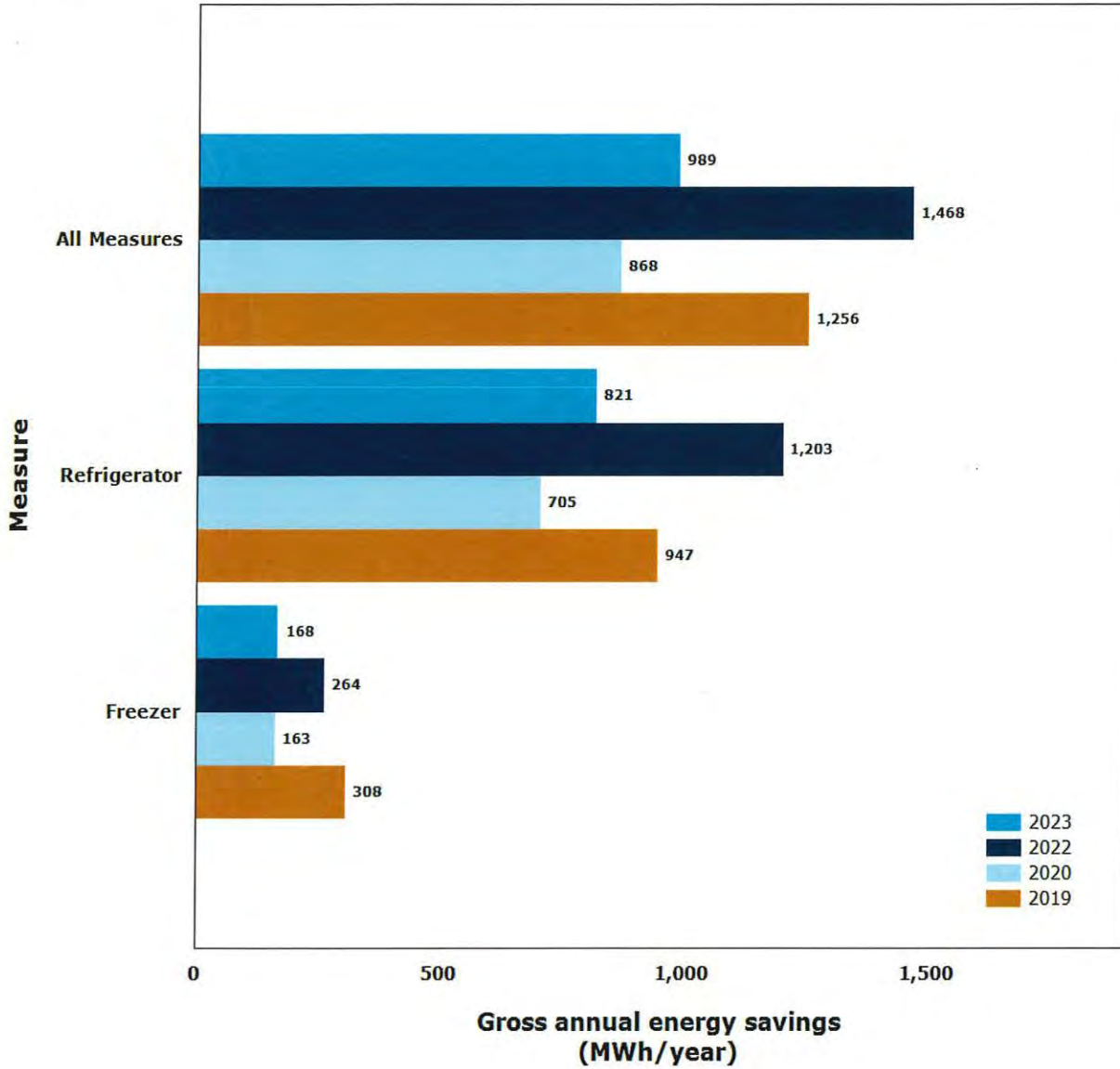




Figure 2-2. Virginia Residential Appliance Recycling Program gross annual energy savings (MWh/year) by measure and year<sup>10</sup>



<sup>9</sup> There was no program activity during 2021.

<sup>10</sup> There was no program activity during 2021.





**2.1.3.4 Additional North Carolina program data**

Figure 2-3 and Figure 2-4 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K

The North Carolina program recycled 41 appliances (Figure 2-3) since the program started in 2022 and generated 29,319 gross annual kWh/year savings (Figure 2-4) Seventy-nine percent of savings resulted from refrigerators and 21% from recycling freezers.

**Figure 2-3. North Carolina Residential Appliance Recycling Program participation by measure and year**

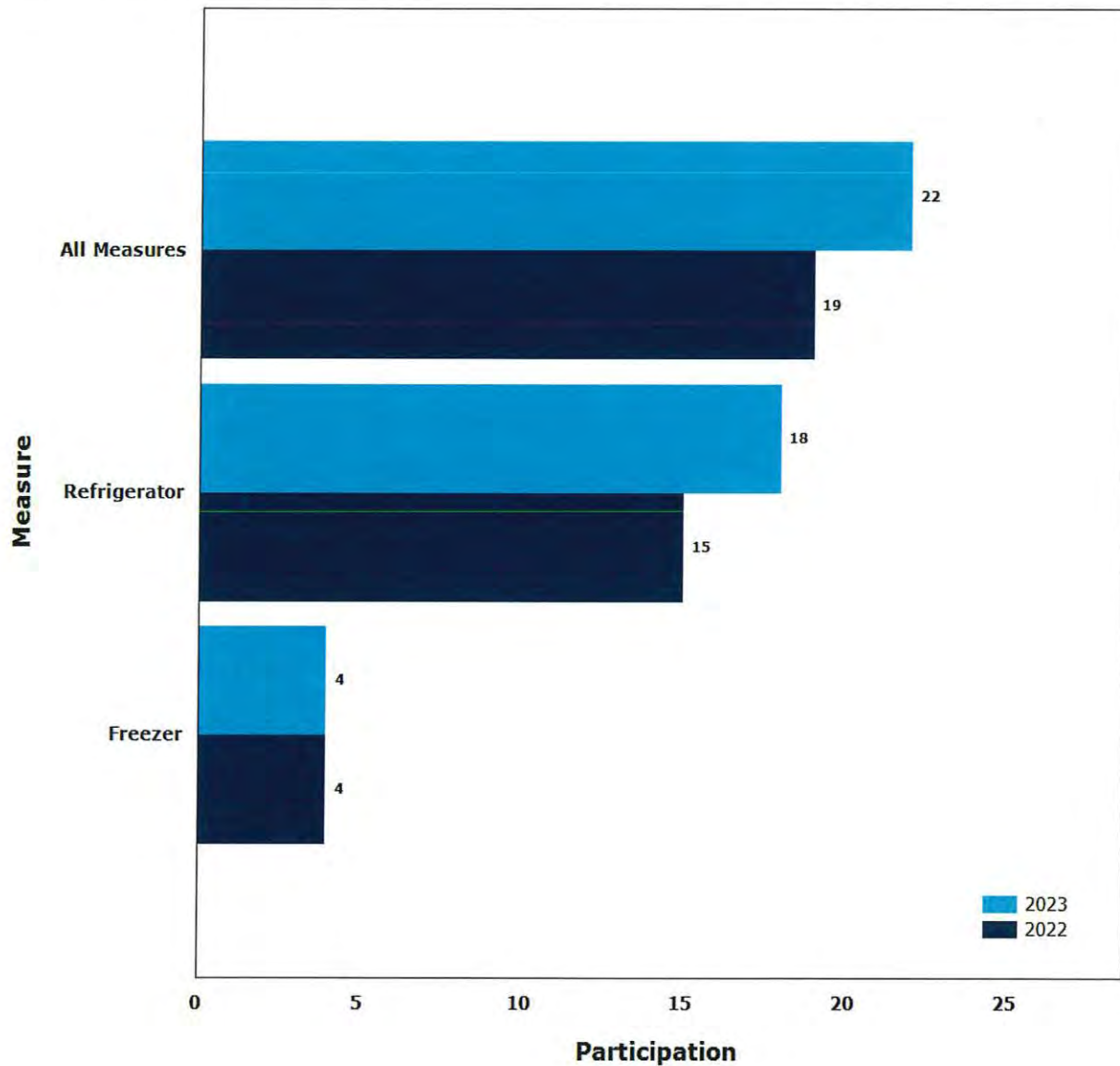
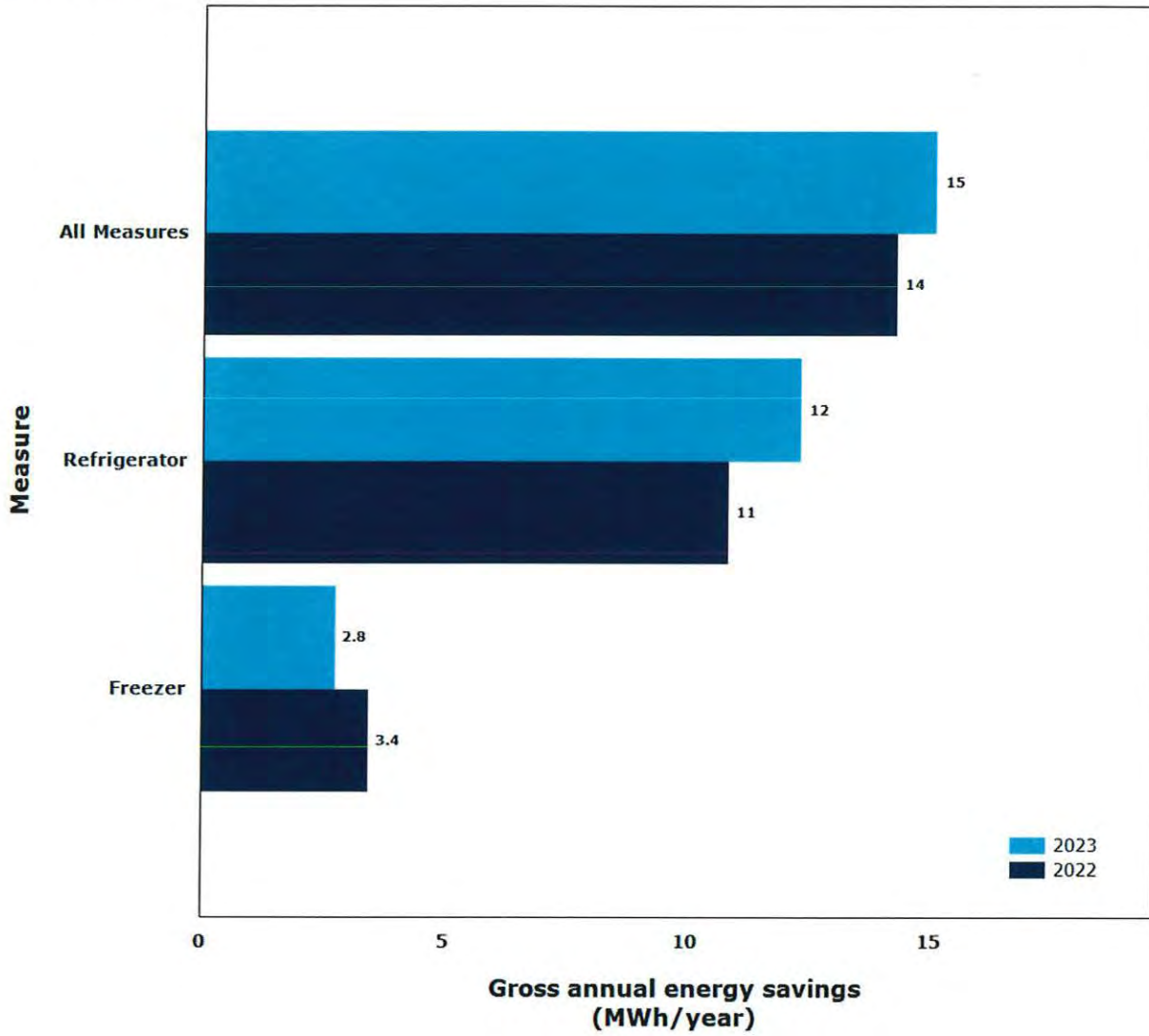




Figure 2-4. North Carolina Residential Appliance Recycling Program gross annual energy savings (MWh/year) by measure and year





## 2.2 Residential Efficient Products Marketplace – Virginia and North Carolina

### 2.2.1 Program description

The Residential Efficient Products Marketplace Program provides rebates for the purchase of ENERGY STAR® qualified appliances. The definition of several of the originally program-eligible LED lamp types was revised under the Energy Independence and Security Act of 2007 (EISA). As a result, in 2023 LED lamps became ineligible for rebates.<sup>11</sup>



To be eligible for the program, a customer must be a Dominion Energy account holder on a residential rate schedule and either own the home or rent the home and have permission from the homeowner to participate. Rebate eligible appliances must be purchased from authorized providers, be ENERGY STAR qualified, and be installed at the service address of the account holder.

The program has three delivery channels: 1) appliance rebates processed through the Dominion Energy rebate

portal, 2) coupons provided through the in-store rebate portal and redeemed at the point of purchase, and 3) discounted appliances sold in the Dominion Energy Marketplace. Customers are required to provide a copy of the sales receipt to obtain rebates through the online portal. Customers are eligible for two rebates each for dishwashers, clothes washers, refrigerators, and freezers, and up to four rebates for dehumidifiers and air purifiers.

The Virginia SCC approved this program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168) for a five-year period from July 1, 2019, through June 30, 2024. The program officially launched in Virginia on July 1, 2019.<sup>12</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 568). The program officially launched in North Carolina on January 1, 2020.<sup>13</sup> This program will close in early 2024. A similar appliance rebate program was approved by the Virginia SCC on August 4, 2023 (Case No. PUR-2022-00210). The revised version of this program began in early 2024.

The current program rebated or discounted over 15 million measures in Virginia and North Carolina from 2019 through 2023. In 2023, the program issued rebates for or discounted 19,660 appliances.

### 2.2.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F.

Table 2-4 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of products sold.

<sup>11</sup> [Energy Independence and Security Act of 2007](#), Title III, Subtitle B, Sec. 321–325 (2007)

<sup>12</sup> [Virginia Residential Efficient Products Marketplace Program Terms and Conditions](#)

<sup>13</sup> [North Carolina Residential Efficient Products Marketplace Program Terms and Conditions](#)



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Table 2-4. Residential Efficient Products Marketplace Program initial planning assumptions

| Assumption   | 2019                  | 2020–2024             |
|--|-----------------------|-----------------------|
| Target market  | Residential customers | Residential customers |
| NTG factor   | 70%                   | 70%                   |
| Measure life (years)   | 17                    | 17                    |
| Gross average annual savings (kWh/year) per participant                    | 33                    | 38                    |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.0002                | 0.0005                |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.0002                | 0.0005                |
| Net average annual energy savings (kWh/year) per participant               | 23                    | 26                    |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.0001                | 0.0004                |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.0001                | 0.0004                |
| Average rebate (\$US) per participant                                      | \$1.56                | \$1.56                |

### 2.2.3 Assessment of program progress toward plan

The next subsections describe the program's progress toward planned participants, energy savings, and demand reduction.

#### 2.2.3.1 Key Virginia program data

Table 2-5 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

In program years 2019 through 2023, 14.8 million measures were either rebated or discounted, which resulted over 446,000 gross annual MWh/year in energy savings. Participation was 188% of the planned value in 2022 but fell to 1% in 2023 because lighting measures were removed from the program, but not from the filed planning values. This resulted in commensurate reduction in program savings achieved in 2023 relative to 2022.

Table 2-5. Virginia Residential Efficient Products Marketplace Program performance indicators (2019–2023)<sup>14</sup>

| Category                             | Item                            | 2021               | 2022               | 2023               | Program total (2019–2023) |
|--------------------------------------|---------------------------------|--------------------|--------------------|--------------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |                    |                    |                    |                           |
|                                      | Direct Implementation           |                    |                    |                    |                           |
|                                      | Direct EM&V                     |                    |                    |                    |                           |
|                                      | Indirect Other (Administrative) | \$396,645          | \$415,532          | \$279,324          | \$1,669,471               |
| <b>Total Costs (\$)</b>              | <b>Total<sup>15</sup></b>       | <b>\$8,459,198</b> | <b>\$9,952,004</b> | <b>\$4,134,018</b> | <b>\$35,244,327</b>       |

<sup>14</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>15</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                                      | Item  | 2021        | 2022        | 2023         | Program total (2019-2023) |
|---|---|-------------|-------------|--------------|---------------------------|
|   | Planned                                     | \$7,086,043 | \$9,928,503 | \$10,387,504 | \$40,957,638              |
|   | Variance                                    | \$1,373,155 | \$23,501    | -\$6,253,486 | -\$5,713,311              |
|   | Annual % of Planned                         | 119%        | 100%        | 40%          | 86%                       |
| <b>Participants</b>                           | Total (Gross)                               | 4,262,855   | 5,163,385   | 19,118       | 14,829,174                |
|   | Planned (Gross)                             | 2,514,548   | 2,744,285   | 2,997,386    | 13,402,098                |
|   | Variance                                    | 1,749,307   | 2,419,100   | -2,978,268   | 1,427,076                 |
|   | Annual % of Planned (Gross)                 | 170%        | 188%        | 1%           | 111%                      |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings                  | 122,317,496 | 150,318,593 | 2,608,640    | 446,246,169               |
|   | Realization Rate                            | 100%        | 100%        | 100%         | 100%                      |
|   | Realization Rate Adjustment                 | 0           | 0           | 0            | 0                         |
|   | Adjusted Gross Savings                      | 122,317,496 | 150,318,593 | 2,608,640    | 446,246,169               |
|   | Net-to-Gross Ratio <sup>16</sup>            | 49%         | 50%         | 38%          | 57%                       |
|   | Net-to-Gross Adjustment                     | -62,039,898 | 74,705,269  | -1,612,152   | -192,502,447              |
|   | Net Adjusted Savings                        | 60,277,598  | 75,613,324  | 996,488      | 253,743,722               |
|   | Planned Savings (Net)                       | 72,753,598  | 79,400,595  | 86,723,585   | 374,827,495               |
|   | Annual Percent Toward Planned Savings (Net) | 83%         | 95%         | 1%           | 68%                       |
|   | Avg. Savings per Participant (Gross)        | 29          | 29          | 136          | 30                        |
|   | Avg. Savings per Participant (Net)          | 14          | 15          | 52           | 17                        |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Demand Reduction                | 11,274      | 13,821      | 305          | 41,116                    |
|   | Realization Rate                            | 100%        | 100%        | 100%         | 100%                      |
|   | Realization Rate Adjustment                 | 0           | 0           | 0            | 0                         |
|   | Adjusted Gross Demand Reduction             | 11,274      | 13,821      | 305          | 41,116                    |
|   | Net-to-Gross Ratio <sup>16</sup>            | 49%         | 50%         | 39%          | 57%                       |
|   | Net-to-Gross Adjustment                     | -5,725      | -6,875      | -186         | -17,776                   |
|   | Net Adjusted Demand Reduction               | 5,549       | 6,946       | 118          | 23,340                    |
|   | Planned Demand (Net)                        | 933         | 1,018       | 1,112        | 4,390                     |
|   | Annual % Toward Planned Demand (Net)        | 595%        | 682%        | 11%          | 532%                      |
|   | Avg. Peak Demand per Participant (Gross)    | 0           | 0           | 0            | 0                         |

<sup>16</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 66% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                      | Item                                     | 2021    | 2022    | 2023   | Program total (2019–2023) |
|---|--|---------|---------|--------|---------------------------|
|   | Avg. Demand per Participant (Net)        | 0       | 0       | 0      | 0                         |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Demand Reduction             | 23,472  | 29,038  | 147    | 52,657                    |
|   | Realization Rate                         | 100%    | 100%    | 100%   | 100%                      |
|   | Realization Rate Adjustment              | 0       | 0       | 0      | 0                         |
|   | Adjusted Gross Demand Reduction          | 23,472  | 29,038  | 147    | 52,657                    |
|   | Net-to-Gross Ratio <sup>16</sup>         | 50%     | 50%     | 40%    | 50%                       |
|   | Net-to-Gross Adjustment                  | -11,851 | -14,385 | -88    | -26,325                   |
|   | Net Adjusted Demand Reduction            | 11,620  | 14,653  | 59     | 26,332                    |
|   | Planned Demand (Net)                     | 933     | 1,018   | 1,112  | 3,063                     |
|   | Annual % Toward Planned Demand (Net)     | 1,246%  | 1,439%  | 5%     | 860%                      |
|   | Avg. Peak Demand per Participant (Gross) | 0       | 0       | 0      | 0                         |
|   | Avg. Demand per Participant (Net)        | 0       | 0       | 0      | 0                         |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)         | \$0.10  | \$0.09  | \$0.11 | \$0.11                    |
|   | \$Admin. per kWh/year (Gross)            | \$0     | \$0     | \$0    | \$0                       |
|   | \$Admin. per kW (Gross)                  | \$36    | \$34    | \$41   | \$41                      |
|   | \$EM&V per Total Costs (%)               | 2.9%    | 2.5%    | 3.0%   | 3.0%                      |
|   | \$Rebate per Participant (Gross)         | \$2     | \$1     | \$2    | \$2                       |

**2.2.3.2 Key North Carolina program data**

Table 2-6 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

In program years 2020 through 2023, 288,004 measures were either rebated or discounted, which resulted in nearly 9,200 gross annual MWh/year in energy savings. Participation was 48% of the planned value in 2022 but fell to zero in 2023 because lighting measures were removed from the program, but not from the filed planning values. This resulted in commensurate reduction in program savings achieved in 2023 relative to 2022.



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Table 2-6. North Carolina Residential Efficient Products Marketplace Program performance indicators (2020–2023)<sup>14</sup>

| Category                               | Item  | 2021       | 2022       | 2023       | Program total (2020–2023) |
|--|---|------------|------------|------------|---------------------------|
| Operations and Management Costs (\$)   | Direct Rebate                               |            |            |            |                           |
|  | Direct Implementation                       |            |            |            |                           |
|  | Direct EM&V                                 |            |            |            |                           |
|  | Indirect Other (Administrative)             | \$18,123   | \$12,878   | \$10,639   | \$53,716                  |
| Total Costs (\$)                       | Total <sup>15</sup>                         | \$386,515  | \$308,435  | \$157,460  | \$1,090,612               |
|  | Planned                                     | \$440,922  | \$633,498  | \$638,131  | \$2,137,736               |
|  | Variance                                    | -\$54,407  | -\$325,063 | -\$480,670 | -\$1,047,124              |
|  | Annual % of Planned                         | 88%        | 49%        | 25%        | 51%                       |
| Participants                           | Total (Gross)                               | 116,668    | 84,301     | 542        | 288,004                   |
|  | Planned (Gross)                             | 160,503    | 175,167    | 191,322    | 665,720                   |
|  | Variance                                    | -43,835    | -90,866    | -190,780   | -377,716                  |
|  | Annual % of Planned (Gross)                 | 73%        | 48%        | 0%         | 43%                       |
| Installed Energy Savings (kWh/year)    | Total Gross Deemed Savings                  | 3,582,113  | 2,828,480  | 65,245     | 9,183,330                 |
|  | Realization Rate                            | 100%       | 100%       | 100%       | 100%                      |
|  | Realization Rate Adjustment                 | 0          | 0          | 0          | 0                         |
|  | Adjusted Gross Savings                      | 3,582,113  | 2,828,480  | 65,245     | 9,183,330                 |
|  | Net-to-Gross Ratio <sup>16</sup>            | 47%        | 47%        | 37%        | 53%                       |
|  | Net-to-Gross Adjustment                     | -1,906,060 | -1,501,251 | -41,162    | -4,359,484                |
|  | Net Adjusted Savings                        | 1,676,053  | 1,327,228  | 24,084     | 4,823,846                 |
|  | Planned Savings (Net)                       | 4,643,845  | 5,068,119  | 5,535,533  | 19,261,325                |
|  | Annual Percent Toward Planned Savings (Net) | 36%        | 26%        | 0%         | 25%                       |
|  | Avg. Savings per Participant (Gross)        | 31         | 34         | 120        | 32                        |
| Avg. Savings per Participant (Net)     | 14  | 16         | 44         | 17         |                           |
| Installed Summer Demand Reduction (kW) | Total Gross Demand Reduction                | 330        | 261        | 8          | 848                       |
|  | Realization Rate                            | 100%       | 100%       | 100%       | 100%                      |
|  | Realization Rate Adjustment                 | 0          | 0          | 0          | 0                         |
|  | Adjusted Gross Demand Reduction             | 330        | 261        | 8          | 848                       |
|  | Net-to-Gross Ratio <sup>16</sup>            | 47%        | 47%        | 37%        | 52%                       |
|  | Net-to-Gross Adjustment                     | -176       | -139       | -5         | -403                      |
|  | Net Adjusted Demand Reduction               | 154        | 122        | 3          | 444                       |
|  | Planned Demand (Net)                        | 60         | 65         | 71         | 247                       |
| Annual % Toward Planned                | 259%  | 188%       | 4%         | 180%       |                           |

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| Category                                      | Item                                     | 2021   | 2022   | 2023   | Program total (2020-2023) |
|---|--|--------|--------|--------|---------------------------|
|   | Demand (Net)                             |        |        |        |                           |
|   | Avg. Peak Demand per Participant (Gross) | 0      | 0      | 0      | 0                         |
|   | Avg. Demand per Participant (Net)        | 0      | 0      | 0      | 0                         |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Demand Reduction             | 686    | 543    | 3      | 1,233                     |
|   | Realization Rate                         | 100%   | 100%   | 100%   | 100%                      |
|   | Realization Rate Adjustment              | 0      | 0      | 0      | 0                         |
|   | Adjusted Gross Demand Reduction          | 686    | 543    | 3      | 1,233                     |
|   | Net-to-Gross Ratio <sup>16</sup>         | 47%    | 47%    | 38%    | 47%                       |
|   | Net-to-Gross Adjustment                  | -364   | -287   | -2     | -653                      |
|   | Net Adjusted Demand Reduction            | 323    | 256    | 1      | 580                       |
|   | Planned Demand (Net)                     | 60     | 65     | 71     | 196                       |
|   | Annual % Toward Planned Demand (Net)     | 542%   | 394%   | 2%     | 297%                      |
|   | Avg. Peak Demand per Participant (Gross) | 0      | 0      | 0      | 0                         |
|   | Avg. Demand per Participant (Net)        | 0      | 0      | 0      | 0                         |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)         | \$0.15 | \$0.15 | \$0.19 | \$0.19                    |
|   | \$Admin. per kWh/year (Gross)            | \$0    | \$0    | \$0.01 | \$0.01                    |
|   | \$Admin. per kW (Gross)                  | \$52   | \$51   | \$63   | \$63                      |
|   | \$EM&V per Total Costs (%)               | 4.8%   | 4.4%   | 5.4%   | 5.4%                      |
|   | \$Rebate per Participant (Gross)         | \$2    | \$2    | \$2    | \$2                       |

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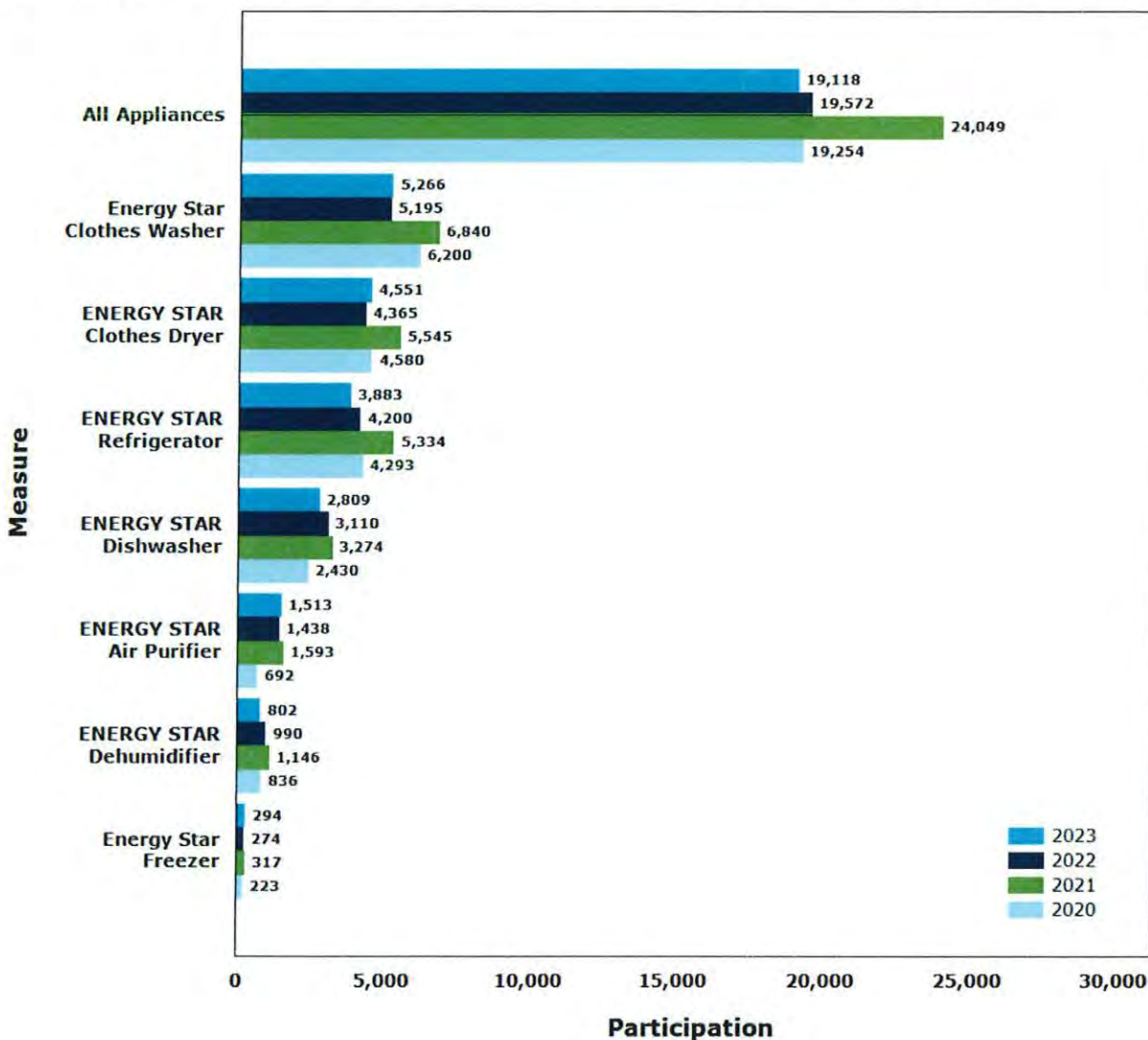


**2.2.3.3 Additional Virginia program data**

Figure 2-5 and Figure 2-6 show participation and gross annual energy savings by appliance type and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Since January 2020, the program has discounted or rebated 81,993 appliances in Virginia. During 2023, more than 19,000 appliances were rebated or discounted in Virginia. Clothes washers were the most frequently rebated or discounted appliance (5,266) and followed closely by clothes dryers (4,551), refrigerators (3,883), and dishwashers (2,809). The program generated 2,609 MWh/year of gross annual energy savings in 2023. Clothes washers generated the highest savings trailed by clothes dryers, air purifiers, and refrigerators.

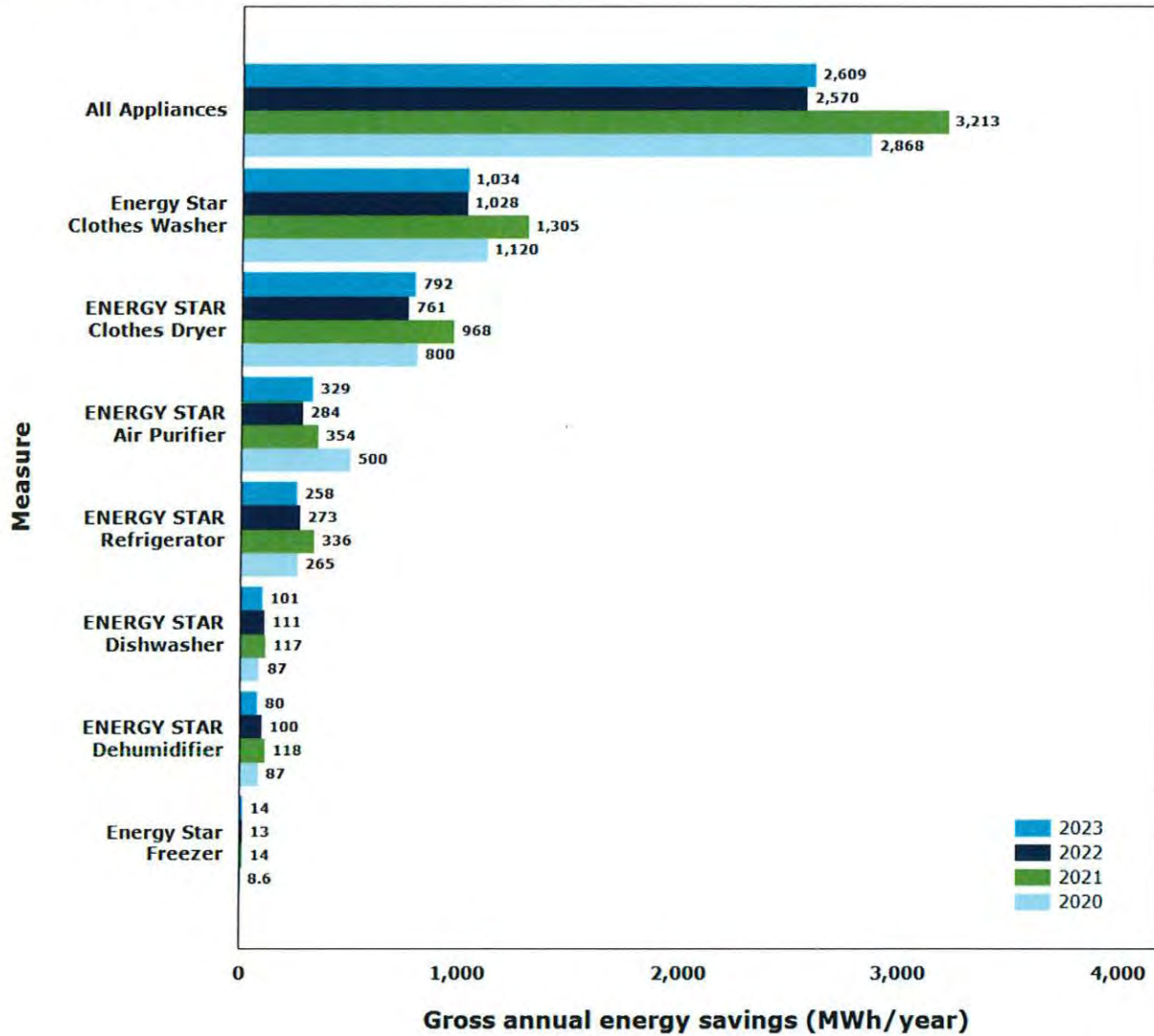
**Figure 2-5. Virginia Residential Efficient Products Marketplace Program participation by appliance type and year**



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Figure 2-6. Virginia Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by appliance type and year





Historical lighting performance indicators through program year 2022 are provided for reference in Figure 2-7 and Figure 2-8.

Figure 2-7. Virginia Residential Efficient Products Marketplace Program participation by lighting measure and year

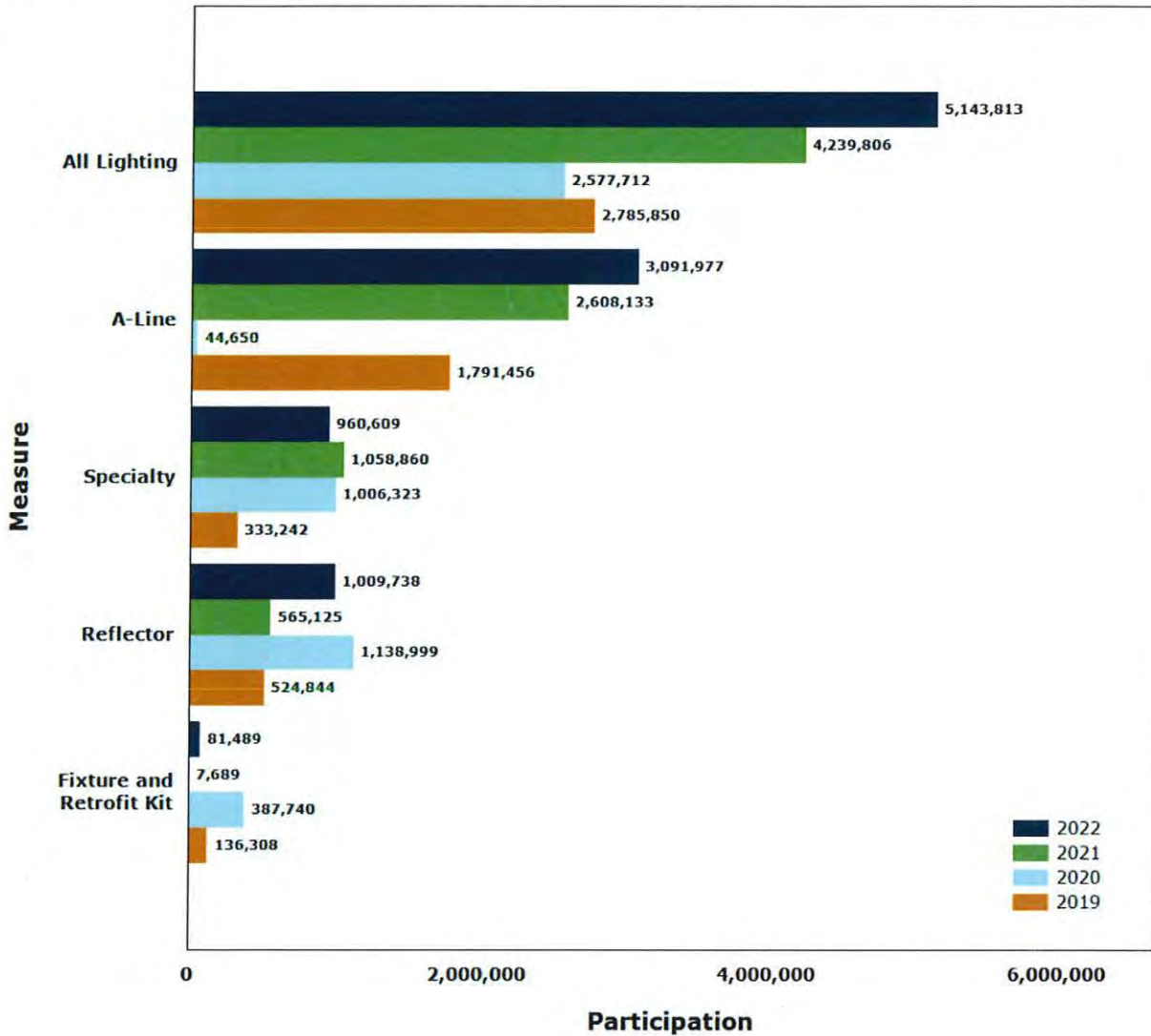
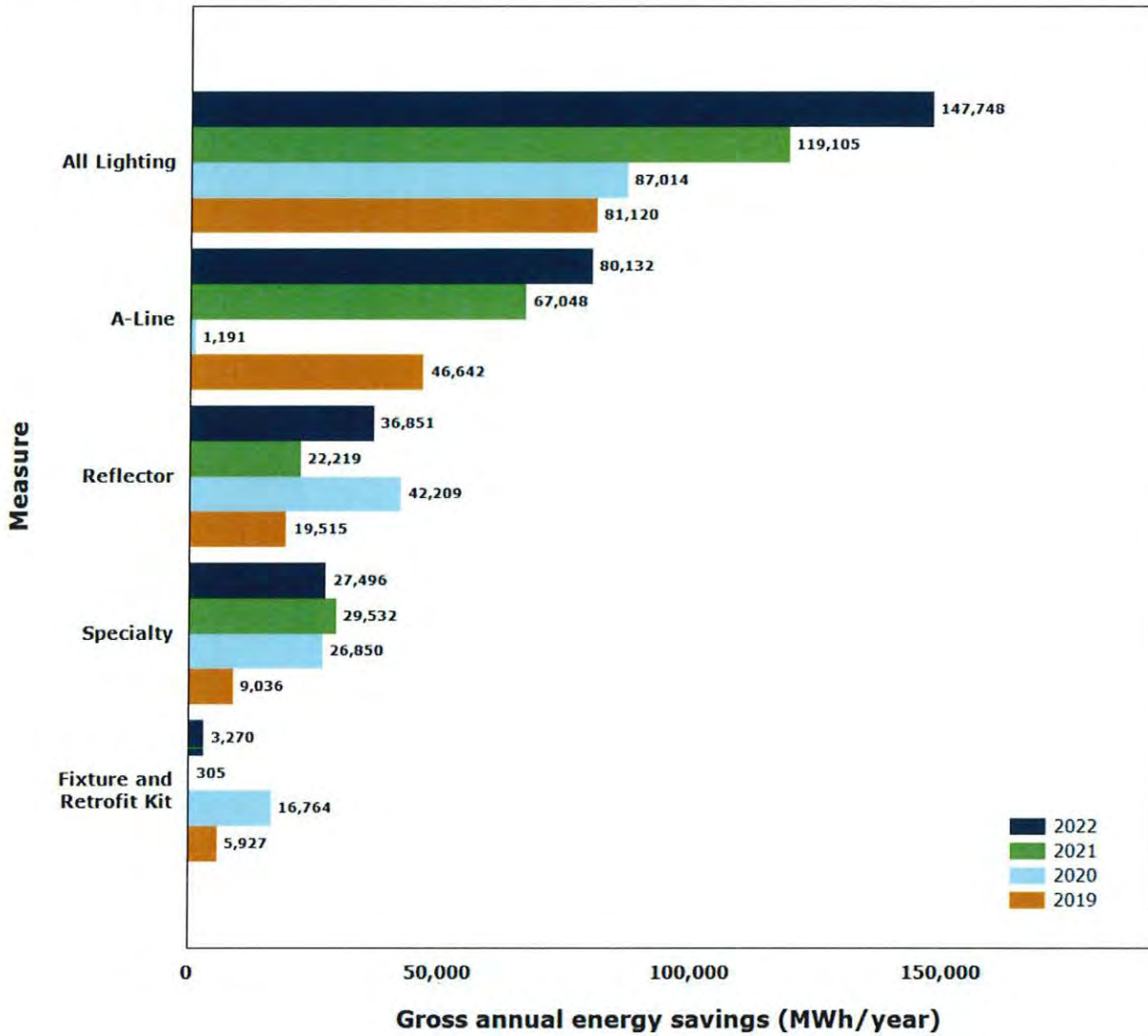




Figure 2-8. Virginia Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by lighting measure and year





**2.2.3.4 Additional North Carolina program data**

Figure 2-9 and Figure 2-10 show participation and gross annual energy savings by appliance type and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

The program rebated 542 appliances during 2023. The most frequently rebated measures were clothes washers (148), followed by refrigerators (126), dishwashers (114), and clothes dryers (110). The program realized 65 MWh/year of gross annual energy savings in 2023. Clothes washers (28 MWh/year), clothes dryers (19 MWh/year), refrigerators (8.4 MWh/year), and dishwashers (4.1 MWh/year) yielded the highest savings.

**Figure 2-9. North Carolina Residential Efficient Products Marketplace Program participation by appliance type and year**

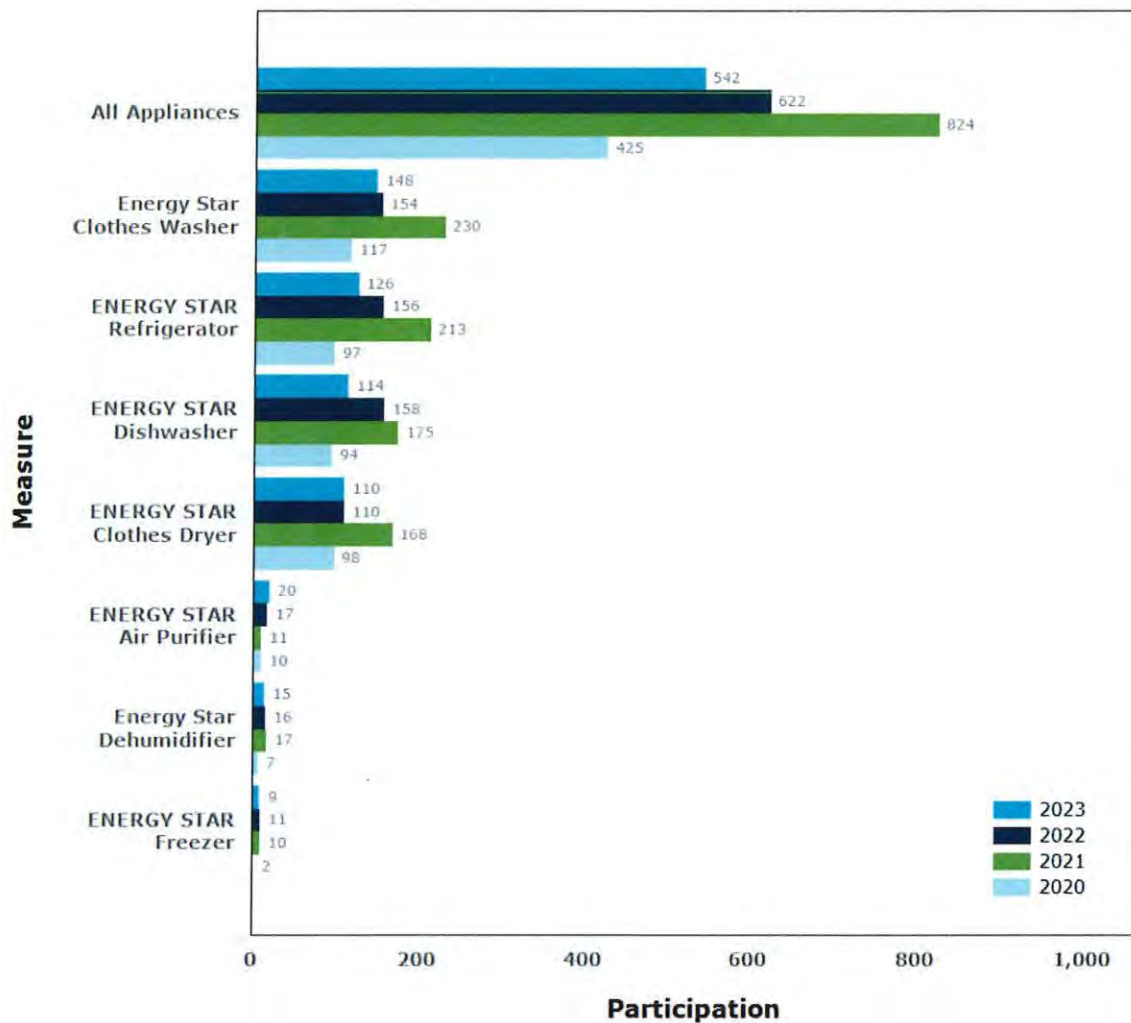
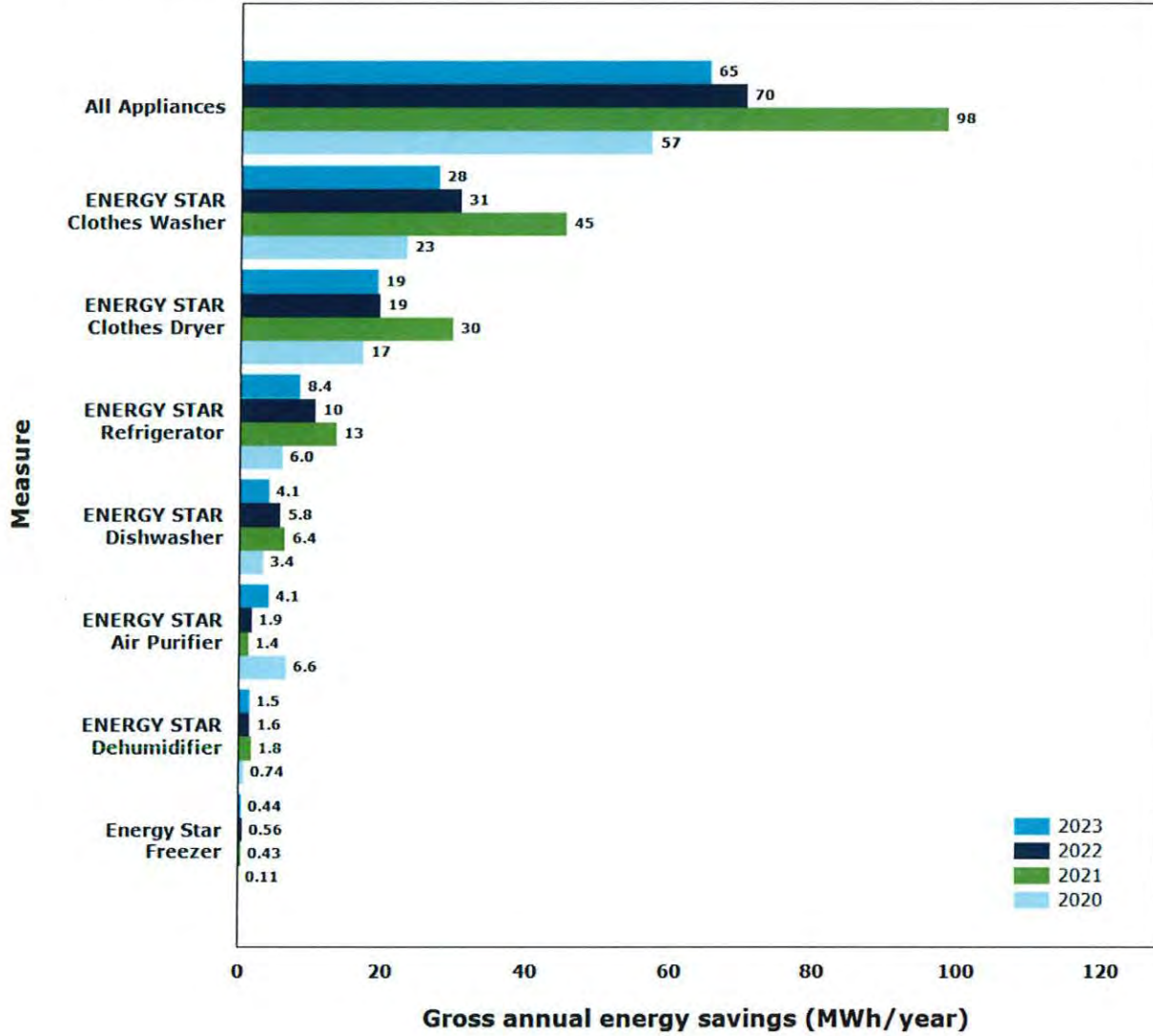




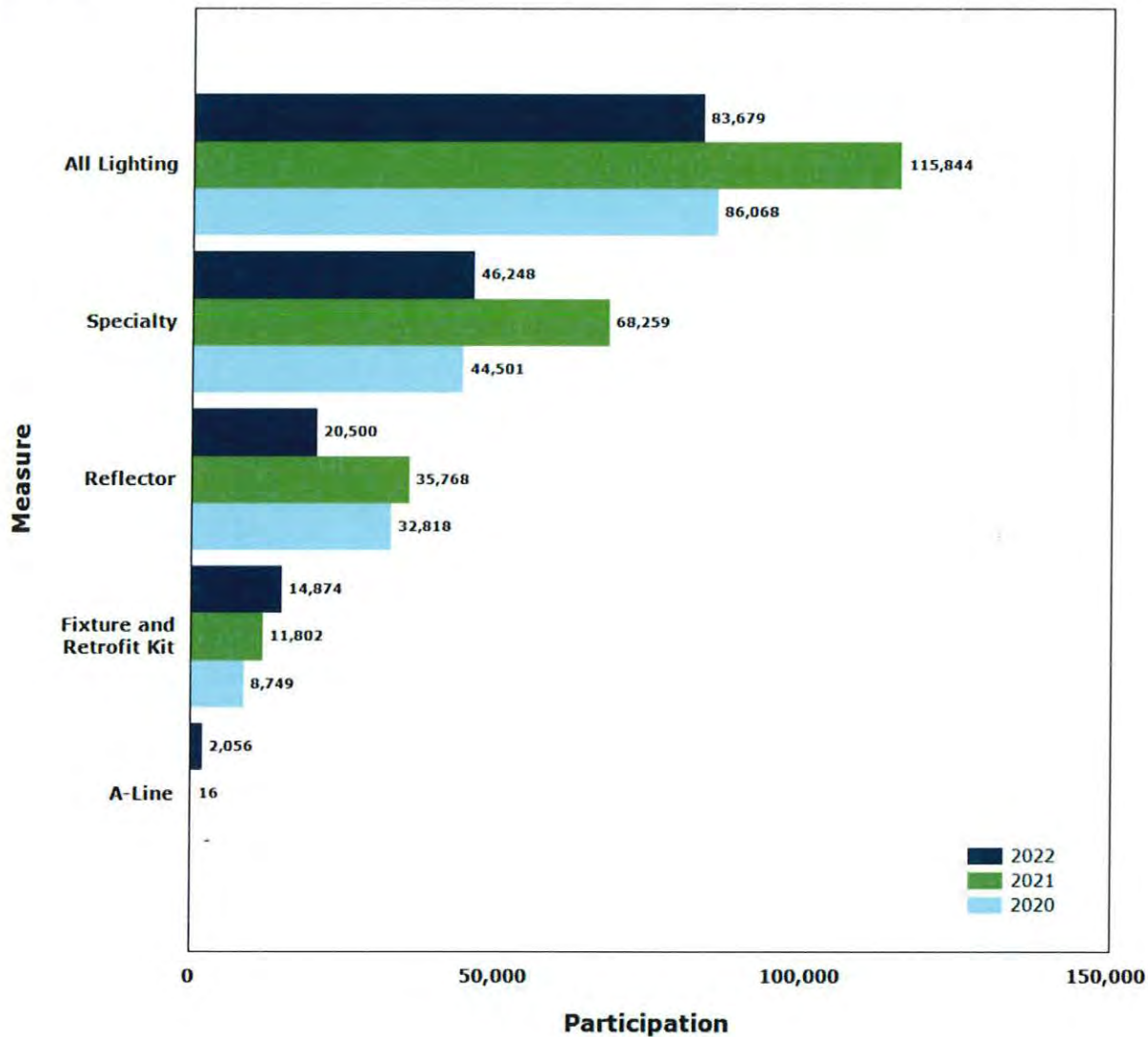
Figure 2-10. North Carolina Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by measure and year





Although beginning in 2023, lighting measures were ineligible for rebates, historical lighting performance indicators through program year 2022 are provided for reference in Figure 2-11 and Figure 2-12.

Figure 2-11 North Carolina Residential Efficient Products Marketplace Program participation by lighting measure and year

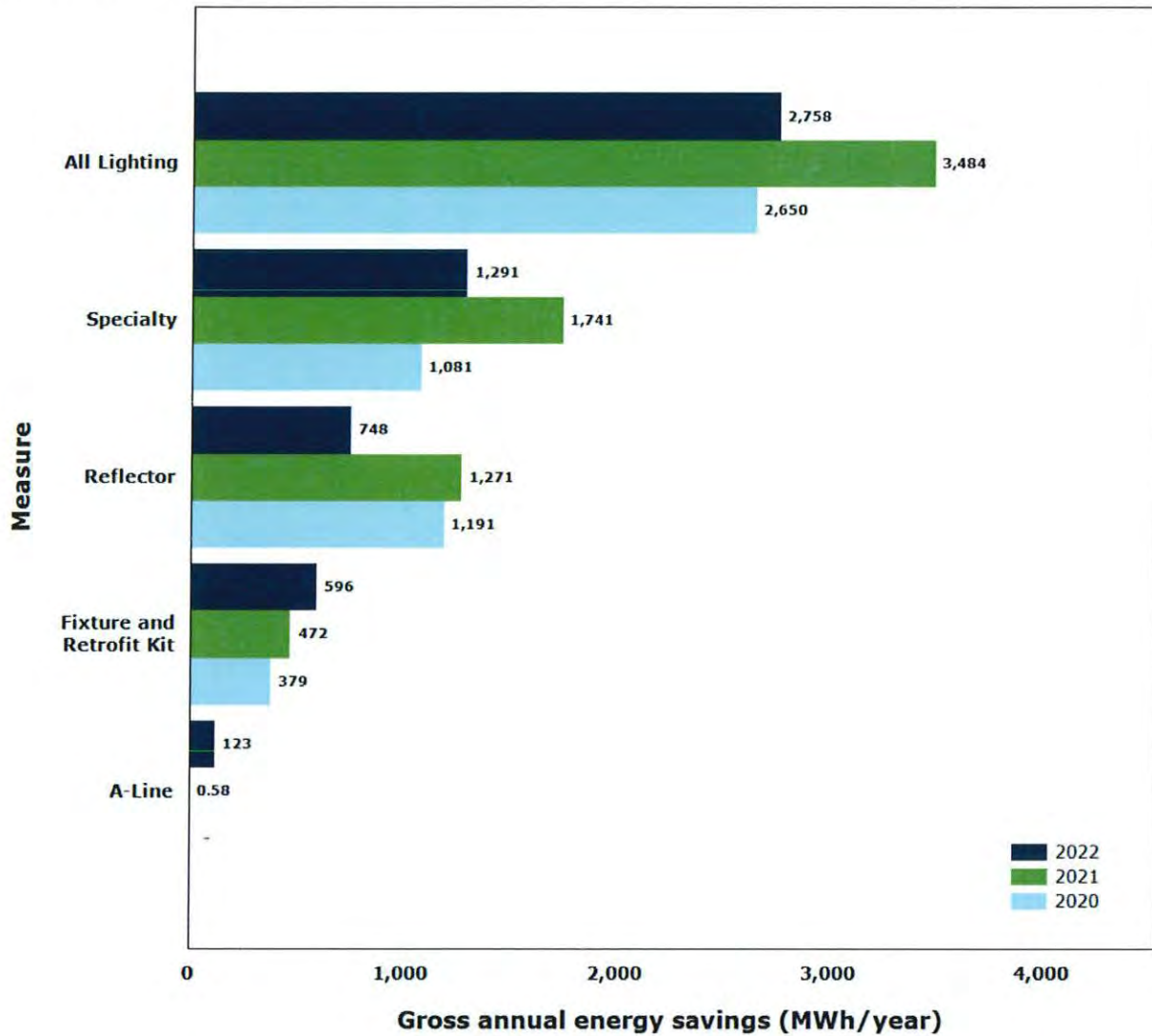


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Figure 2-12. North Carolina Residential Efficient Products Marketplace Program gross annual energy savings (MWh/year) by lighting measure and year







## 2.3 Residential Home Energy Assessment Program – Virginia and North Carolina

### 2.3.1 Program description

The Residential Home Energy Assessment Program, marketed as the Quick Energy Check-Up, provides owners and occupants of single-family homes and townhomes with a home energy assessment. This includes a walk-through assessment of customer homes, the installation of energy saving measures, and recommendations for additional home energy improvements. Customers receive the recommendations in a personalized report showing the projected energy and cost savings from implementing the options identified during the check-up.

Residential customers living in single-family residences or townhomes with Dominion Energy electric service are eligible for this program. Customers must contact a participating contractor to receive the home energy assessment. Customers are not considered to have fully participated in the program until a completed application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application, and Dominion processes it within 90 days, typically sooner. Table 2-7 details the energy efficient measures that are offered in the program.



**Table 2-7. Measures offered through the Residential Home Energy Assessment Program**

| End use                   | Measure                           |
|---------------------------|-----------------------------------|
| <b>Domestic Hot Water</b> | Water heater pipe insulation      |
|                           | Water heater temperature turndown |
|                           | Fixed and handheld showerhead     |
|                           | Kitchen and bathroom aerator      |
|                           | Domestic heat pump water heater   |
| <b>Lighting</b>           | A-line LED lamps                  |
|                           | Decorative LED lamps              |
|                           | LED downlights                    |
| <b>HVAC</b>               | Heat pump tune-up                 |
|                           | Heat pump upgrade                 |
|                           | Mini split heat pump upgrade      |
|                           | Duct sealing                      |
|                           | Duct insulation                   |
| <b>Building Envelope</b>  | ECM fan motor                     |
|                           | Cool roof                         |

The Virginia SCC approved this program, as part of the DSM Phase VII programs, on May 2, 2019, (Case No. PUR-2018-00168) for a five-year period of July 1, 2019, through June 30, 2024. The program officially launched on October 1, 2019.<sup>17</sup> The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 567). The

<sup>17</sup> [Virginia Residential Home Energy Assessment Program Terms and Conditions](#)



program officially launched on January 1, 2020.<sup>18</sup> Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

On August 3, 2023, the SCC approved the Company's request (Case No. PUR-2022-00210) to close this program to be consistent with the recommendations in the Company's Long-Term Plan to streamline the DSM Portfolio (approved by the SCC in Case No. PUR-2021-00247). Eligible Customers now participate through the Phase XI Home Energy Evaluation Program. The Home Energy Evaluation offers two distinct pathways for customers to select from based on their homes needs and the customers interest level. They can either choose between an introductory energy check-up or a comprehensive home energy audit. A customer can also have an introductory energy check-up performed and decide to then go on to have a comprehensive home energy audit conducted as a logical next step in their energy efficiency journey later on for even more measures.

The program was evaluated in early 2023 for program years 2020–2022. The evaluation calculated net energy savings using a billing analysis approach that compared pre-installation weather normalized annual consumption (NAC) to post-installation NAC and adjusted the difference using a well-matched comparison group. The evaluation yielded realization rates, by year, and were applied to the savings from 2020 through 2023. The average three-year savings was 562 kWh/year per-participant.<sup>19</sup>

### 2.3.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-8 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-8. Residential Home Energy Assessment Program planning assumptions**

| Assumption   | 2019                  | 2020 | 2021 | 2022 | 2023 |
|--|-----------------------|------|------|------|------|
| Target market  | Residential customers |      |      |      |      |
| NTG factor   | 80%                   |      |      |      |      |
| Measure life (years)   | 12.4                  |      |      |      |      |
| Gross average annual energy savings (kWh/year) per participant             | 587                   | 409  | 426  | 452  | 453  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.24                  | 0.19 | 0.19 | 0.18 | 0.18 |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.77                  | 0.56 | 0.55 | 0.47 | 0.45 |
| Net average annual energy savings (kWh/year) per participant               | 470                   | 327  | 341  | 362  | 362  |

<sup>18</sup> [North Carolina Residential Home Energy Assessment Program Terms and Conditions](#)

<sup>19</sup> The Company's implementation vendor provided the following input: "The Company's implementation vendor identified concerns with DNV's modeled evaluation approach for the Home Energy Assessment (HEA) program. DNV's average modeled savings for the evaluation of approximately 3% fall within DNV's definition of "small (less than 5%) influences", to which it is difficult to model savings due to the natural variation of residential consumption. DNV did not support their findings with modeled program evaluation examples of comparable circumstances and outcomes (realization rate of 27% across all years). Due to these concerns and the TRM-established, prescriptive nature of the HEA program's measures, the implementation vendor proposed using an adjusted TRM-based evaluation referencing DNV's observations in APPENDIX H. "Uncertainty in DE TRM Estimates" section of the program year 2022 EM&V report filed in SCC Case No. PUR-2021-00247. These included a reduction to the wattage baseline to include CFLs (using data from DE's Residential Home Energy Use Survey (2019–2020)) and a reduction to the blended hours of use (HOU) assumptions by averaging published TRM HOU estimates from across the country. This yielded an approximately 60% realization rate from the tracked savings across all years."



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| Assumption   | 2019 | 2020  | 2021 | 2022 | 2023 |
|--|------|-------|------|------|------|
| Net average summer coincident peak demand reduction (kW) per participant | 0.19 | 0.15  | 0.16 | 0.14 | 0.14 |
| Net average winter coincident peak demand reduction (kW) per participant | 0.62 | 0.445 | 0.44 | 0.38 | 0.36 |
| Average rebate (US\$) per participant                                    | \$82 |       |      |      |      |

### 2.3.3 Assessment of program progress toward plan

The next subsections describe the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.3.3.1 Key Virginia program data

Table 2-9 provides performance indicator data from 2019 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-9. Virginia Residential Home Energy Assessment Program performance indicators (2019–2023)<sup>20</sup>

| Category                             | Item                            | 2021        | 2022        | 2023         | Program total (2019–2023) |
|--------------------------------------|---------------------------------|-------------|-------------|--------------|---------------------------|
| Operations and Management Costs (\$) | Direct rebate                   |             |             |              |                           |
|                                      | Direct implementation           |             |             |              |                           |
|                                      | Direct EM&V                     |             |             |              |                           |
|                                      | Indirect other (administrative) | \$358,842   | \$194,634   | \$241,998    | \$972,775                 |
| Total Costs (\$)                     | Total <sup>21</sup>             | \$7,652,974 | \$4,661,476 | \$3,581,578  | \$19,592,223              |
|                                      | Planned                         | \$4,755,154 | \$4,925,188 | \$5,002,110  | \$21,266,300              |
|                                      | Variance                        | \$2,897,820 | -\$263,712  | -\$1,420,532 | -\$1,674,077              |
|                                      | Annual % of planned             | 161%        | 95%         | 72%          | 92%                       |
| Participants                         | Total (gross)                   | 9,917       | 6,509       | 4,101        | 23,265                    |
|                                      | Planned (gross)                 | 32,919      | 32,005      | 32,344       | 136,834                   |
|                                      | Variance                        | -23,002     | -25,496     | -28,243      | -113,569                  |
|                                      | Annual % of planned (gross)     | 30%         | 20%         | 13%          | 17%                       |
| Installed Energy Savings (kWh/year)  | Total gross deemed savings      | 22,601,069  | 12,667,811  | 5,081,335    | 45,310,882                |
|                                      | Realization rate                | 23%         | 40%         | 40%          | 30%                       |

<sup>20</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>21</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending. The expenditures reported in this document do not include the Company’s margins.



| Category                                      | Item                                     | 2021       | 2022       | 2023       | Program total (2019–2023) |
|---|--|------------|------------|------------|---------------------------|
|   | Realization rate adjustment              | 17,402,823 | -7,600,687 | -3,048,801 | -31,921,631               |
|   | Adjusted gross savings                   | 5,198,246  | 5,067,125  | 2,032,534  | 13,389,251                |
|   | Net-to-gross ratio <sup>22</sup>         | 100%       | 100%       | 100%       | 100%                      |
|   | Net-to-gross adjustment                  | 0          | 0          | 0          | 0                         |
|   | Net adjusted savings                     | 5,198,246  | 5,067,125  | 2,032,534  | 13,389,251                |
|   | Planned savings (net)                    | 11,219,605 | 11,583,221 | 11,727,738 | 49,036,006                |
|   | Annual % toward planned savings (net)    | 46.3%      | 43.7%      | 17.3%      | 27.3%                     |
|   | Avg. savings per participant (gross)     | 2,279      | 1,946      | 1,239      | 1,948                     |
|   | Avg. savings per participant (net)       | 524        | 778        | 496        | 576                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total gross deemed demand                | 1,414.5    | 1,024.9    | 563.3      | 3,413.8                   |
|   | Realization rate                         | 23%        | 40%        | 40%        | 31%                       |
|   | Realization rate adjustment              | -1,089.1   | -615.0     | -338.0     | -2,362.8                  |
|   | Adjusted gross demand                    | 325.3      | 410.0      | 225.3      | 1,051.1                   |
|   | Net-to-gross ratio <sup>22</sup>         | 100%       | 100%       | 100%       | 100%                      |
|   | Net-to-gross adjustment                  | 0          | 0          | 0          | 0                         |
|   | Net adjusted demand                      | 325.3      | 410.0      | 225.3      | 1,051.1                   |
|   | Planned demand (net)                     | 5,121.4    | 4,639.2    | 4,571.6    | 20,851.5                  |
|   | Annual % toward planned demand (net)     | 6.35%      | 8.84%      | 4.93%      | 5.04%                     |
|   | Avg. peak demand per participant (gross) | 0.1        | 0.2        | 0.1        | 0.1                       |
|   | Avg. demand per participant (net)        | 0.03       | 0.06       | 0.05       | 0.05                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total gross deemed demand                | 3,163.4    | 1,724.4    | 1,085.2    | 5,973.0                   |
|   | Realization rate                         | 23%        | 40%        | 40%        | 31%                       |
|   | Realization rate adjustment              | -2,435.8   | -1,034.6   | -651.1     | -4,121.5                  |
|   | Adjusted gross demand                    | 727.6      | 689.8      | 434.1      | 1,851.4                   |
|   | Net-to-gross ratio <sup>22</sup>         | 100%       | 100%       | 100%       | 100%                      |
|   | Net-to-gross adjustment                  | 0          | 0          | 0          | 0                         |
|   | Net adjusted demand                      | 727.6      | 689.8      | 434.1      | 1,851.4                   |
|   | Planned demand (Net)                     | 14,462.2   | 12,131.2   | 11,664.5   | 38,258.0                  |
|   | Annual % toward planned demand (net)     | 5.03%      | 5.69%      | 3.72%      | 4.84%                     |
|   | Avg. peak demand per participant         | 0.3        | 0.3        | 0.3        | 0.3                       |

<sup>22</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 84% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                     | Item                              | 2021   | 2022   | 2023   | Program total (2019–2023) |
|--|-----------------------------------|--------|--------|--------|---------------------------|
|  | (gross)                           |        |        |        |                           |
|  | Avg. demand per participant (net) | 0.07   | 0.1    | 0.1    | 0.09                      |
| <b>Cumulative Annual Program Performance</b> | \$Admin. per participant (gross)  | \$42   | \$38   | \$42   | \$42                      |
|  | \$Admin. per kWh/year (gross)     | \$0.02 | \$0.02 | \$0.02 | \$0.02                    |
|  | \$Admin. per kW (gross)           | \$294  | \$256  | \$285  | \$285                     |
|  | \$EM&V per total costs (%)        | 3.9%   | 3.8%   | 4.2%   | 4.2%                      |
|  | \$Rebate per participant (gross)  | \$542  | \$505  | \$485  | \$485                     |

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2.3.3.2 Key North Carolina program data

Table 2-10 provides performance indicator data from 2020 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-10. North Carolina Residential Home Energy Assessment Program Performance Indicators (2020–2023)<sup>20</sup>

| Category                             | Item                                  | 2021       | 2022       | 2023       | Program total (2020–2023) |
|--------------------------------------|---------------------------------------|------------|------------|------------|---------------------------|
| Operations and Management Costs (\$) | Direct rebate                         |            |            |            |                           |
|                                      | Direct implementation                 |            |            |            |                           |
|                                      | Direct EM&V                           |            |            |            |                           |
|                                      | Indirect other (administrative)       | \$5,671    | \$4,541    | \$7,738    | \$22,982                  |
| Total Costs (\$)                     | Total <sup>21</sup>                   | \$120,947  | \$108,763  | \$114,518  | \$441,184                 |
|                                      | Planned                               | \$295,885  | \$314,257  | \$307,292  | \$1,187,812               |
|                                      | Variance                              | -\$174,938 | -\$205,493 | -\$192,774 | -\$746,629                |
|                                      | Annual % of planned                   | 41%        | 35%        | 37%        | 37%                       |
| Participants                         | Total (gross)                         | 32         | 18         | 8          | 75                        |
|                                      | Planned (gross)                       | 2,101      | 2,043      | 2,064      | 8,029                     |
|                                      | Variance                              | -2,069     | -2,025     | -2,056     | -7,954                    |
|                                      | Annual % of planned (gross)           | 2%         | 1%         | 0%         | 1%                        |
| Installed Energy Savings (kWh/year)  | Total gross deemed savings            | 70,833     | 28,587     | 9,334      | 128,167                   |
|                                      | Realization rate                      | 23%        | 40%        | 40%        | 28%                       |
|                                      | Realization rate adjustment           | -54,541    | -17,152    | -5,600     | -92,436                   |
|                                      | Adjusted gross savings                | 16,292     | 11,435     | 3,733      | 35,731                    |
|                                      | Net-to-gross ratio <sup>22</sup>      | 100%       | 100%       | 100%       | 100%                      |
|                                      | Net-to-gross adjustment               | 0          | 0          | 0          | 0                         |
|                                      | Net adjusted savings                  | 16,292     | 11,435     | 3,733      | 35,731                    |
|                                      | Planned savings (net)                 | 716,072    | 739,401    | 748,394    | 2,799,252                 |
|                                      | Annual % toward planned savings (net) | 2.28%      | 1.55%      | 0.50%      | 1.28%                     |
|                                      | Avg. savings per participant (gross)  | 2,214      | 1,588      | 1,167      | 1,709                     |
|                                      | Avg. savings per participant (net)    | 509        | 635        | 467        | 476                       |
| Installed Summer Demand Reduction    | Total gross deemed demand             | 4.4        | 2.0        | 0.9        | 8.8                       |
|                                      | Realization rate                      | 23%        | 40%        | 40%        | 28%                       |
|                                      | Realization rate adjustment           | -3.4       | -1.2       | -0.5       | -6.3                      |
|                                      | Adjusted gross demand                 | 1.0        | 0.8        | 0.4        | 2.5                       |



| Category                                      | Item                                     | 2021    | 2022    | 2023    | Program total (2020–2023) |
|---|--|---------|---------|---------|---------------------------|
| <b>(kW)</b>                                   | Net-to-gross ratio <sup>22</sup>         | 100%    | 100%    | 100%    | 100%                      |
|   | Net-to-gross adjustment                  | 0       | 0       | 0       | 0                         |
|   | Net adjusted demand                      | 1.00    | 0.80    | 0.40    | 2.5                       |
|   | Planned demand (net)                     | 326.9   | 296.1   | 291.7   | 1,193.5                   |
|   | Annual % toward planned demand (net)     | 0.31%   | 0.27%   | 0.13%   | 0.21%                     |
|   | Avg. peak demand per participant (gross) | 0.10    | 0.10    | 0.10    | 0.1                       |
|   | Avg. demand per participant (net)        | 0.03    | 0.04    | 0.05    | 0.03                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total gross deemed demand                | 9.6     | 4.3     | 2.0     | 15.9                      |
|   | Realization rate                         | 23%     | 40%     | 40%     | 30%                       |
|   | Realization rate adjustment              | -7.4    | -2.6    | -1.2    | -11.2                     |
|   | Adjusted gross demand                    | 2.2     | 1.7     | 0.8     | 4.7                       |
|   | Net-to-gross ratio <sup>22</sup>         | 100%    | 100%    | 100%    | 100%                      |
|   | Net-to-gross adjustment                  | 0       | 0       | 0       | 0                         |
|   | Net adjusted demand                      | 2.2     | 1.7     | 0.8     | 4.7                       |
|   | Planned demand (net)                     | 923     | 774     | 744     | 2,442                     |
|   | Annual % toward planned demand (net)     | 0.24%   | 0.22%   | 0.11%   | 0.19%                     |
|   | Avg. peak demand per participant (gross) | 0.30    | 0.20    | 0.30    | 0.30                      |
|   | Avg. demand per participant (net)        | 0.07    | 0.09    | 0.10    | 0.08                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per participant (gross)         | \$218   | \$228   | \$306   | \$306                     |
|   | \$Admin. per kWh/year (gross)            | \$0.12  | \$0.13  | \$0.18  | \$0.18                    |
|   | \$Admin. per kW (gross)                  | \$1,819 | \$1,939 | \$2,618 | \$2,618                   |
|   | \$EM&V per total costs (\$)              | 8.8%    | 9.2%    | 9.7%    | 9.7%                      |
|   | \$Rebate per participant (gross)         | \$460   | \$439   | \$443   | \$443                     |

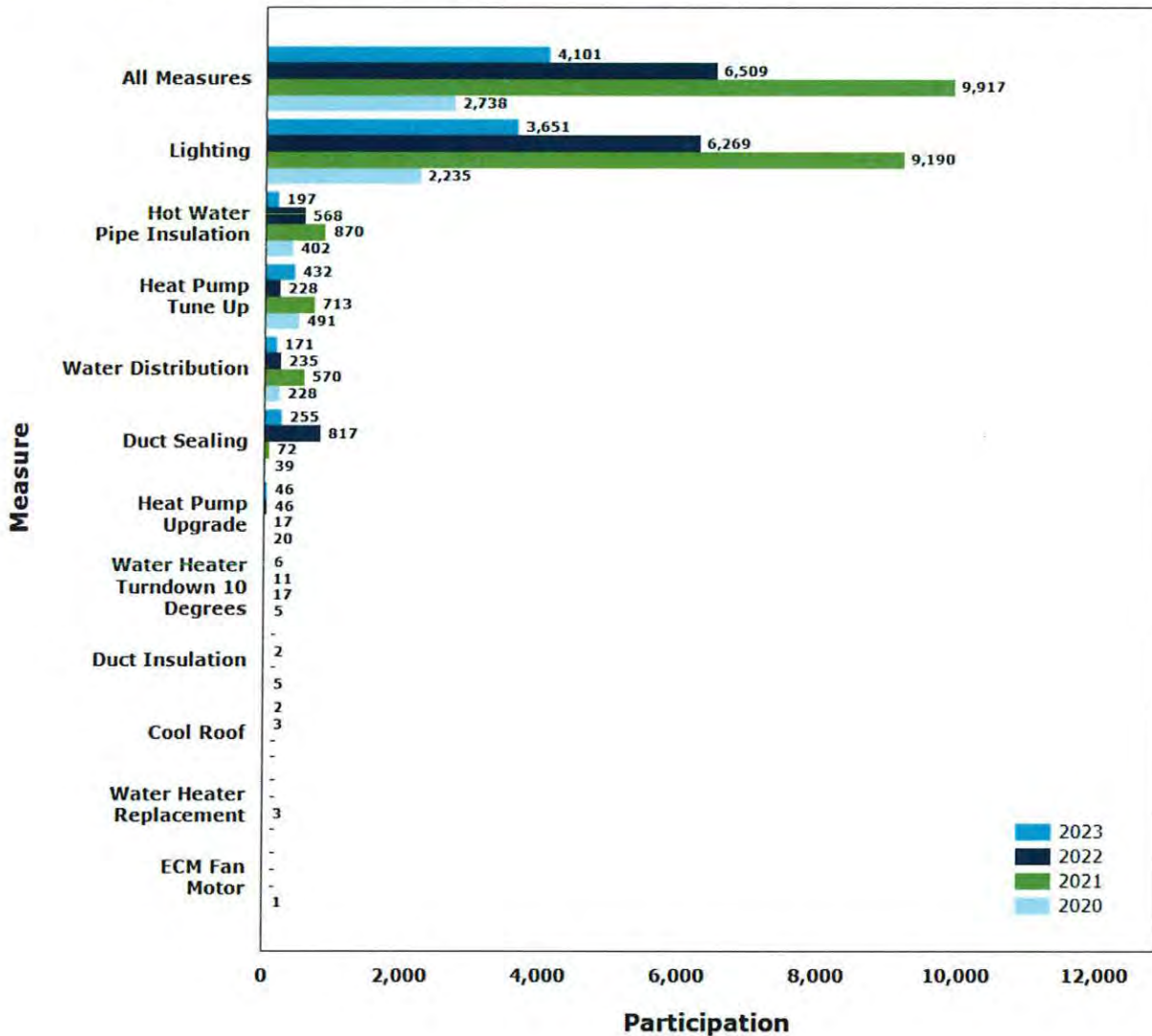


**2.3.3.3 Additional Virginia program data**

Figure 2-13 and Figure 2-14 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-13 shows that the most frequently adopted measure was LED lamps, adopted by 89% of program participants. Heat pump tune-ups were the second most installed measure, performed by 11% of participants.<sup>23</sup>

**Figure 2-13. Virginia Residential Home Energy Assessment Program participation by measure and year**



<sup>23</sup> Note that the participant counts in Figure 2-13 and Figure 2-14 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-9), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.





Lighting measures accounted for approximately 90% of the gross annual energy savings in 2023. Heat pump tune-ups were second, accounting for approximately 3% of energy savings.

Figure 2-14. Virginia Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by measure and year

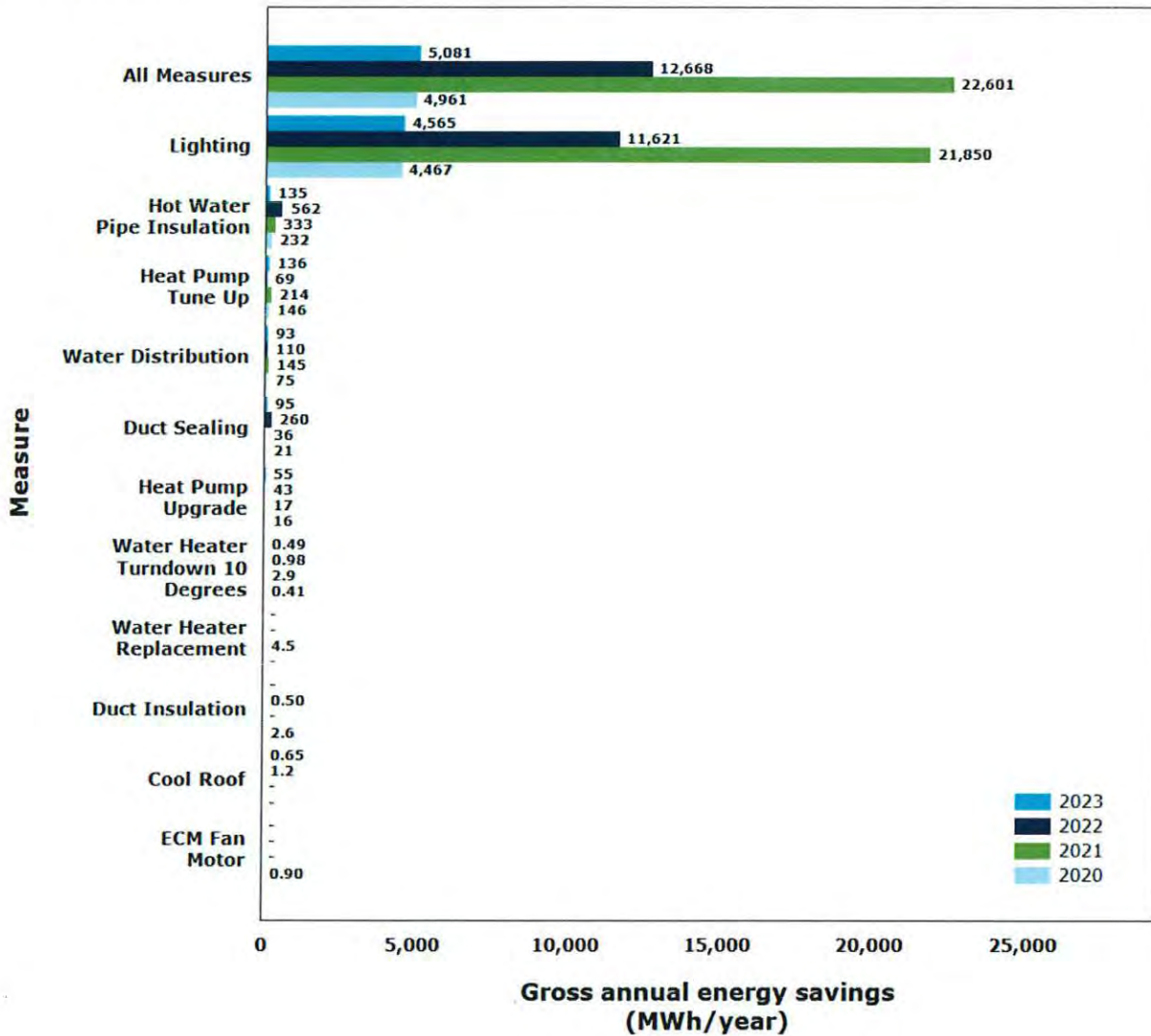
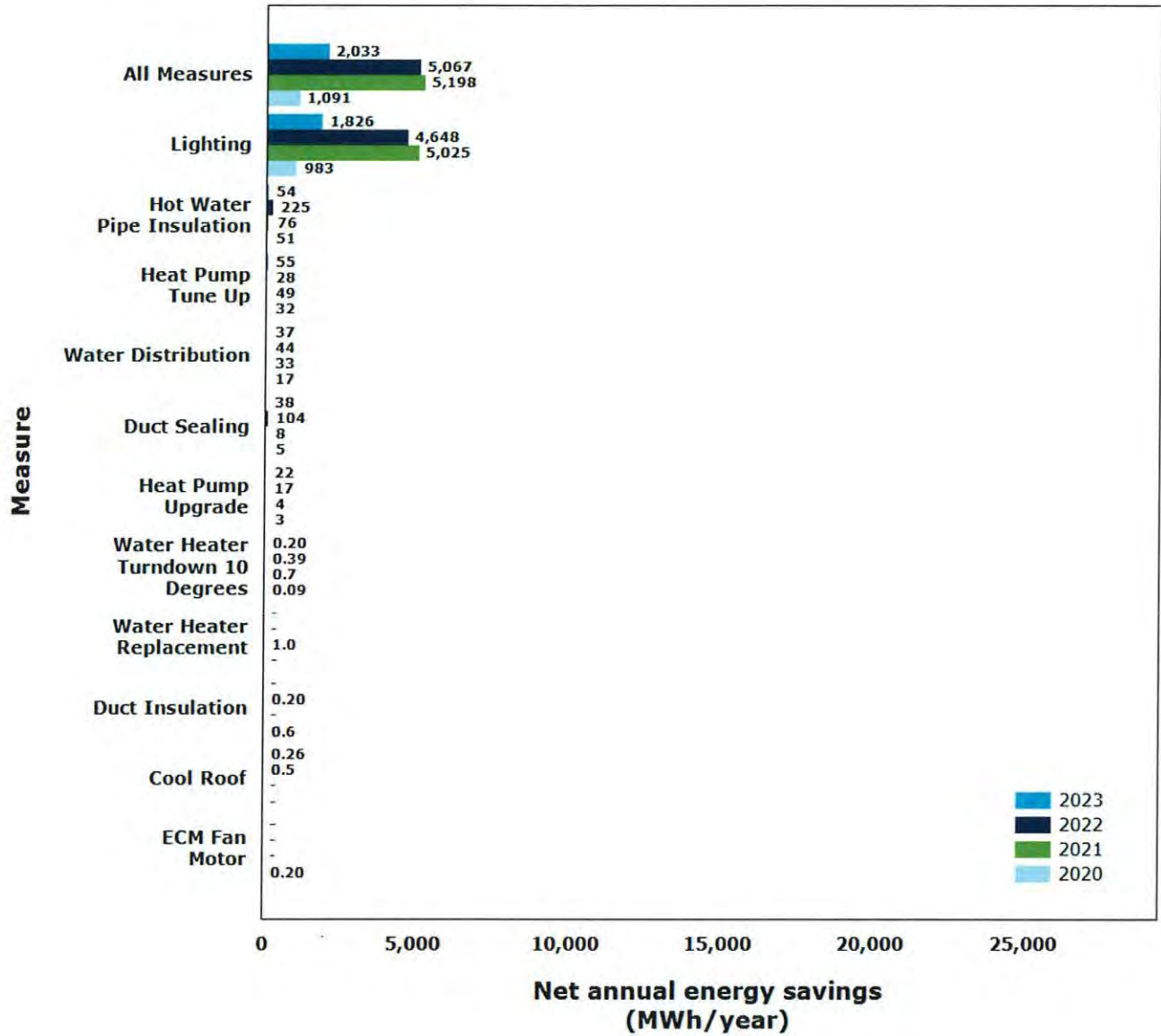




Figure 2-15 shows the net adjusted (evaluated) savings for program activities in Virginia. The program's realization rate ranged from 22-40% for 2020 through 2023. The savings adjustments were applied to each year accordingly.

**Figure 2-15. Virginia Residential Home Energy Assessment Program net annual energy savings (MWh/year) by measure and year**



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Figure 2-16 and Figure 2-17 show participation and gross annual energy savings by building type and year.

Only single-family detached and single-family attached homes are eligible for the program. Single-family detached homes had the highest participation and gross annual energy savings each year of the program. In 2023, they accounted for 79% of participation and energy savings. Conversely, single-family detached homes accounted for 21% of participation and energy savings.

Figure 2-16. Virginia Residential Home Energy Assessment Program participation by building type and year

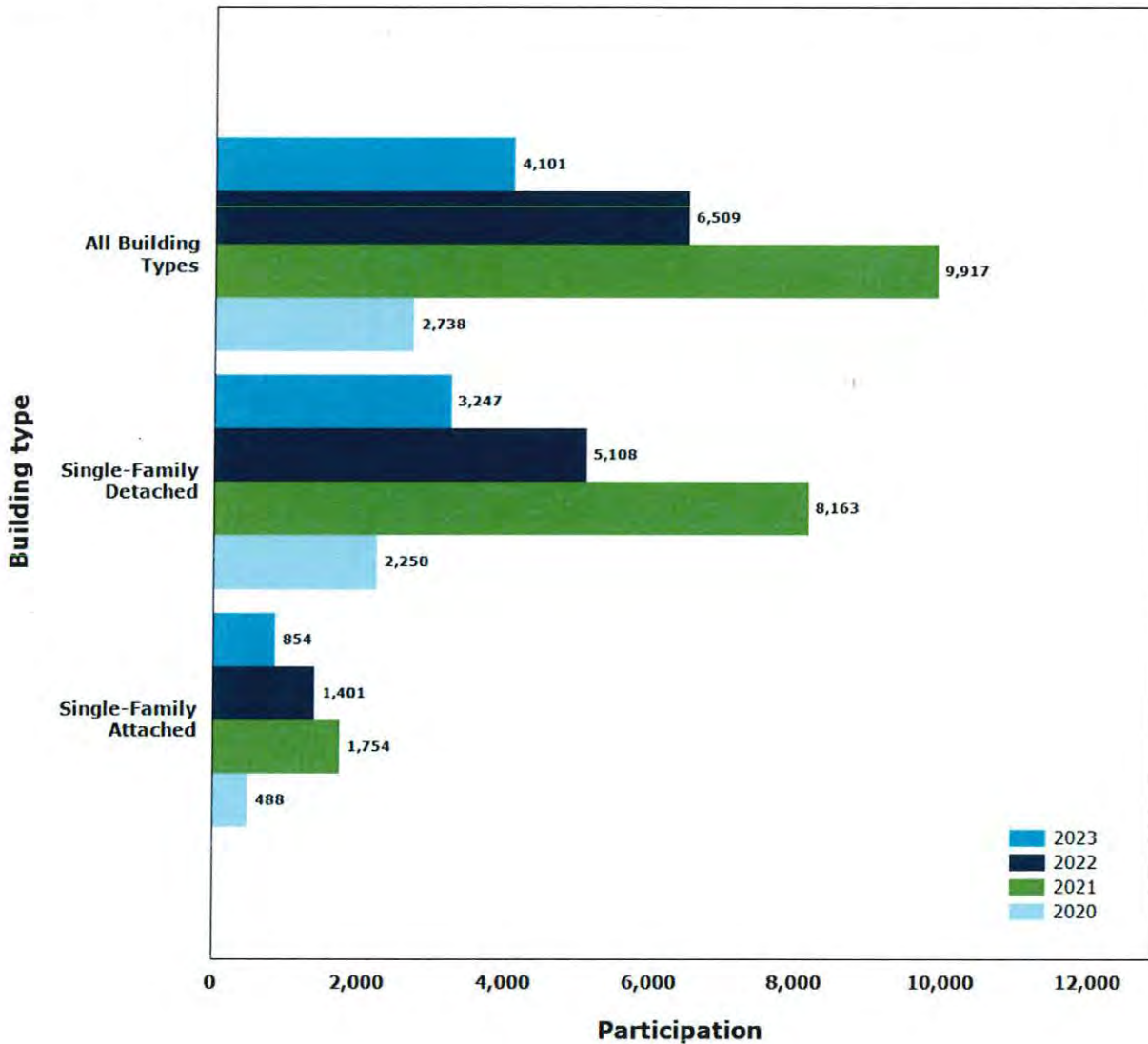




Figure 2-17. Virginia Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by building type and year

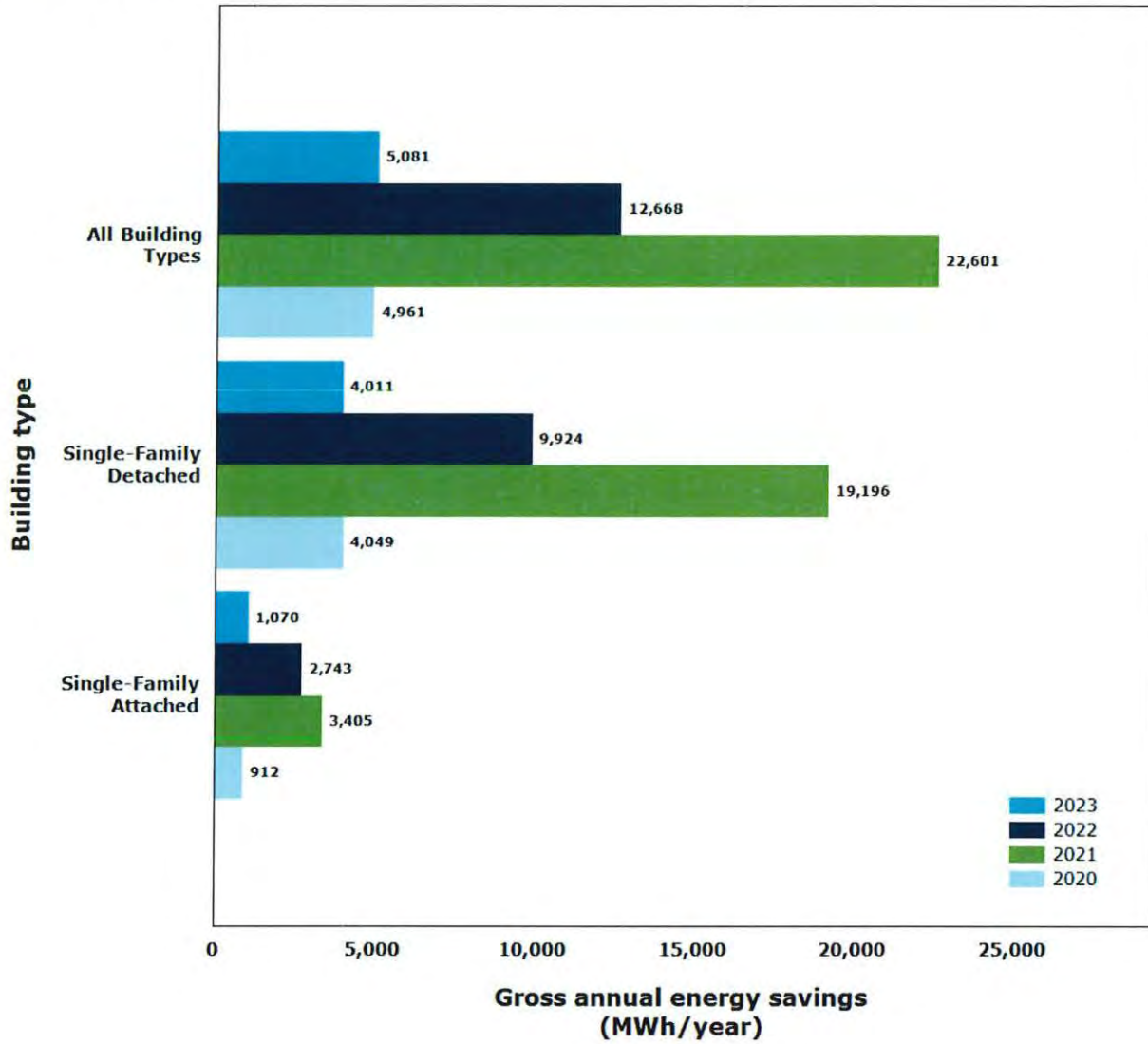
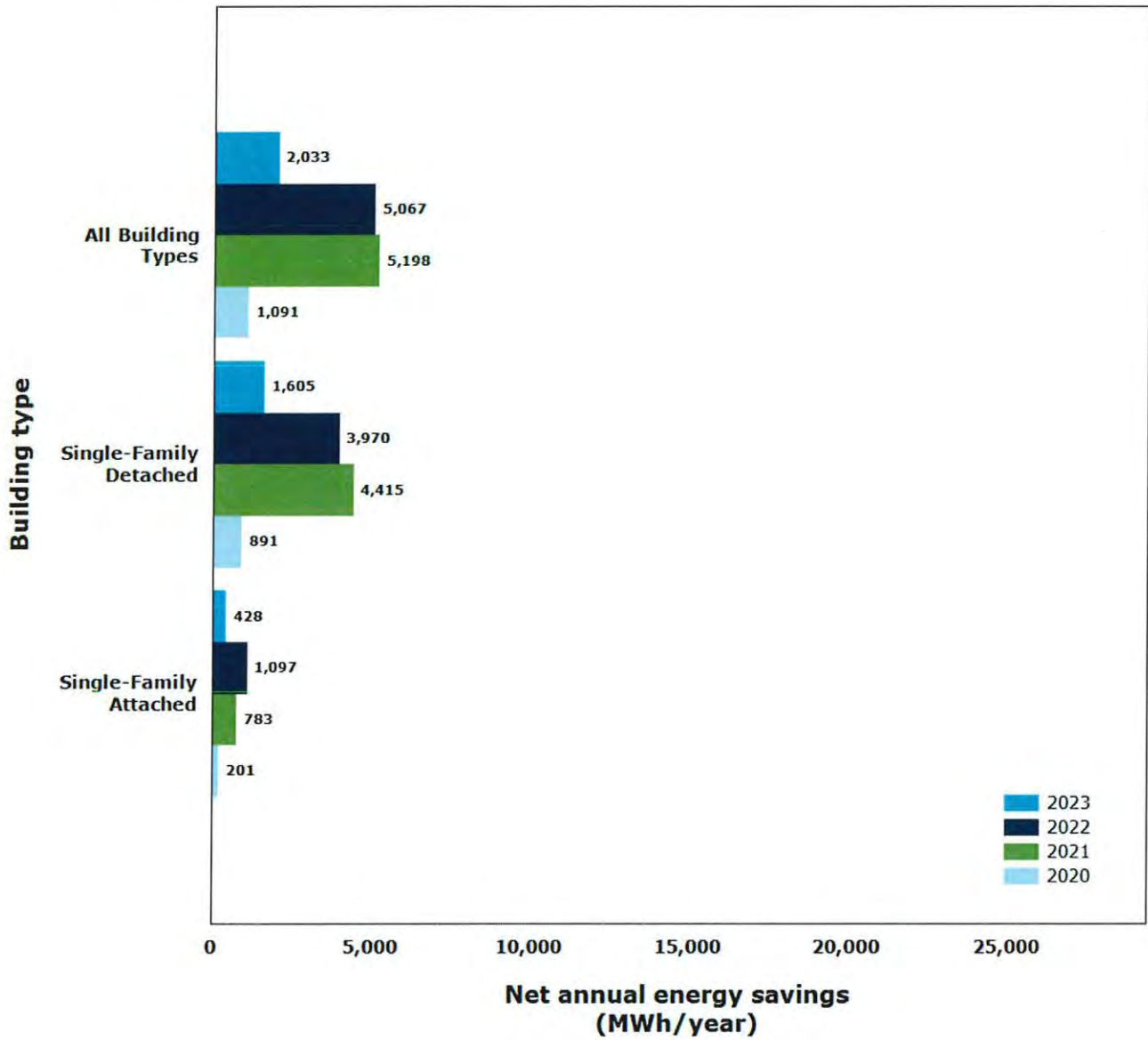




Figure 2-18. Virginia Residential Home Energy Assessment Program net annual energy savings (MWh/year) by building type and year



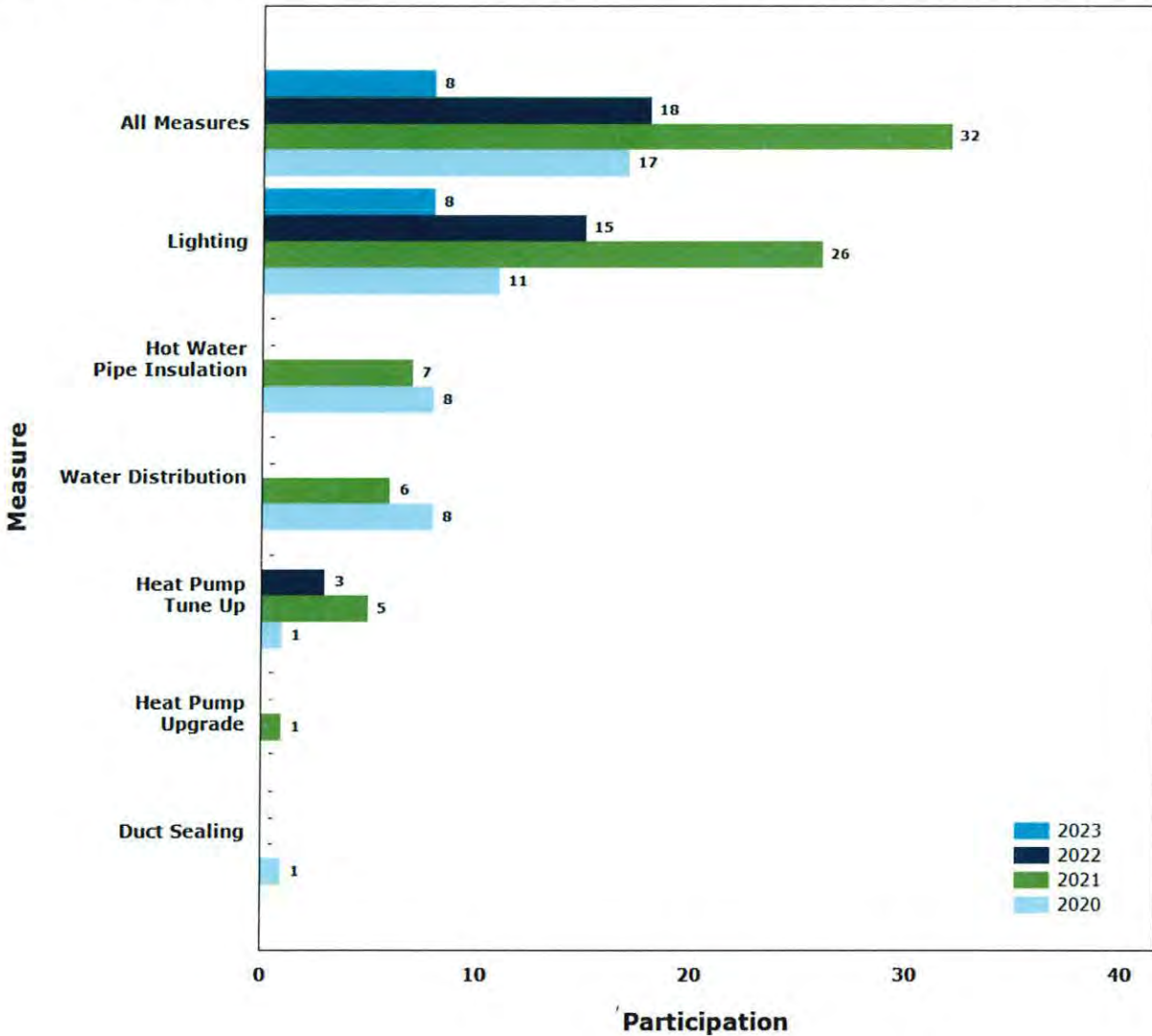


**2.3.3.4 Additional North Carolina program data**

Figure 2-19 and Figure 2-20 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

In 2023, lighting (all LED lamps) was installed by 100% of program participants and accounted for all savings, as shown in Figure 2-19 and Figure 2-20, respectively.<sup>24</sup>

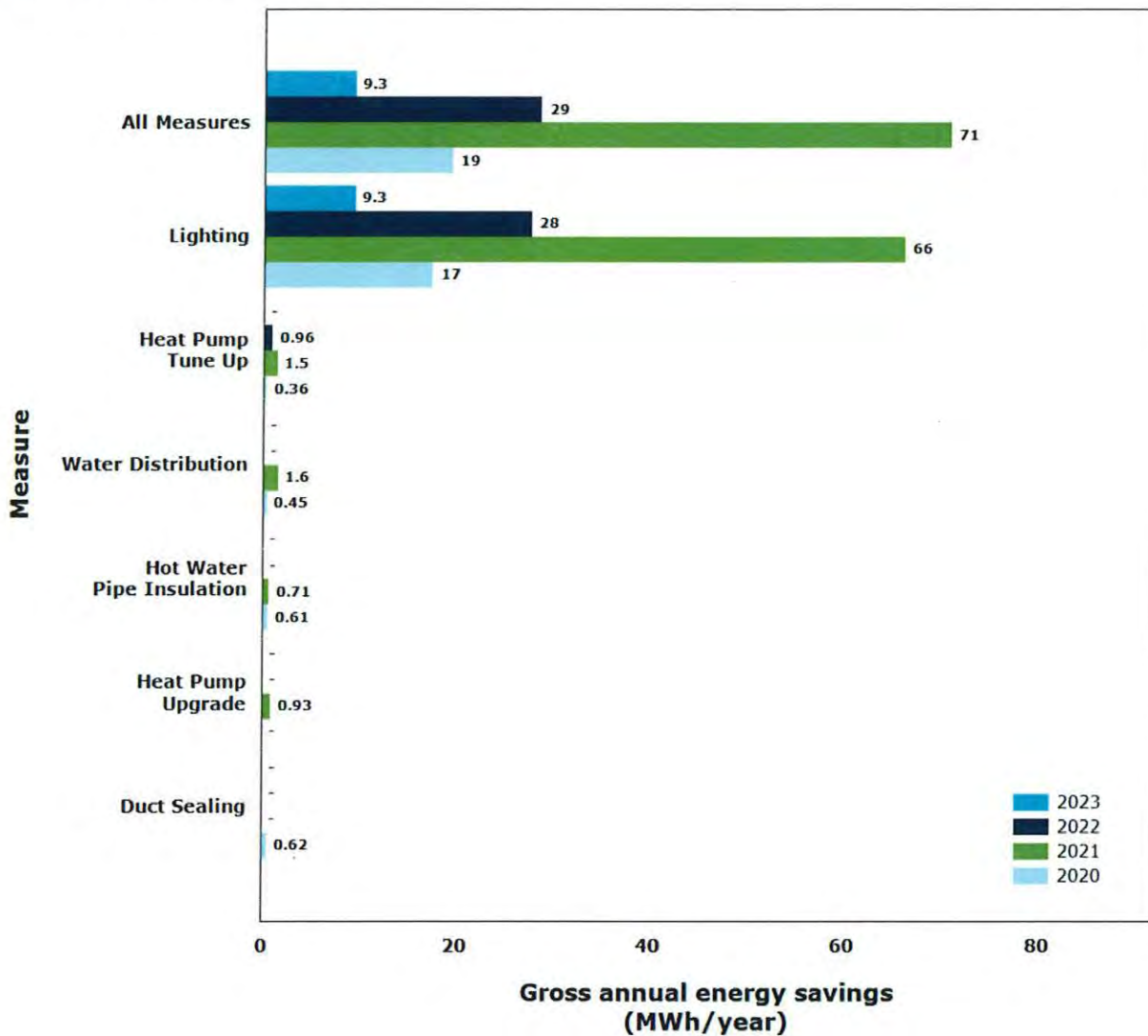
**Figure 2-19. North Carolina Residential Home Energy Assessment Program participation by measure and year**



<sup>24</sup> Note that the participant counts in Figure 2-19 and Figure 2-20 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 2-10), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-20. North Carolina Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by measure and year



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Figure 2-21 shows the net adjusted savings resulting from the program’s impact analysis. The program’s realization rate ranged from 22–40% for 2020 through 2023, the savings adjustments have been applied to each measure accordingly.

**Figure 2-21. North Carolina Residential Home Energy Assessment Program net annual energy savings (MWh/year) by measure and year**

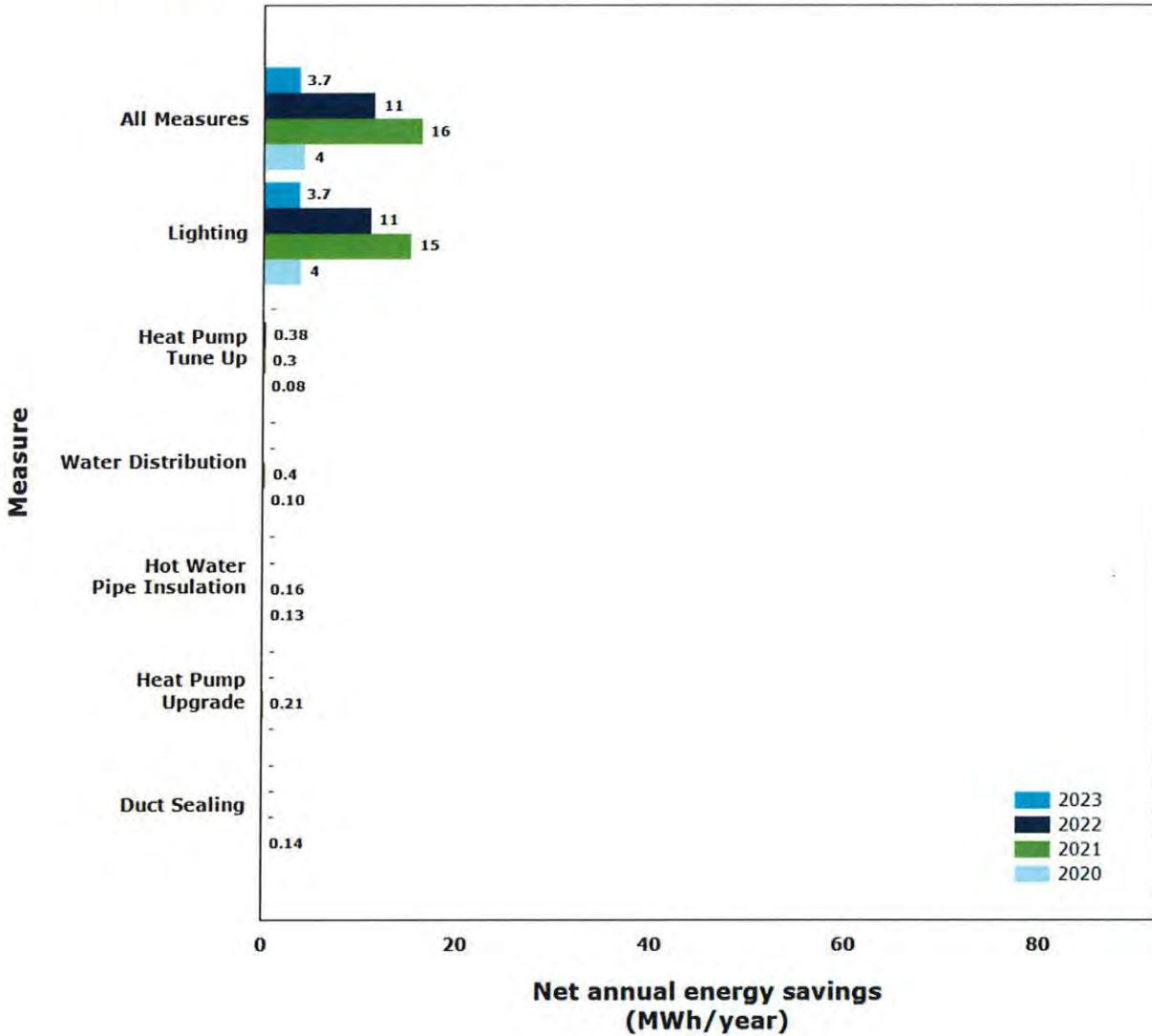






Figure 2-22 and Figure 2-23 show participation and gross annual energy savings by building type and year.

Only single-family detached and single-family attached homes are eligible for the program. In 2023, all of the participants were in single-family detached homes.

Figure 2-22. North Carolina Residential Home Energy Assessment Program participation by building type and year

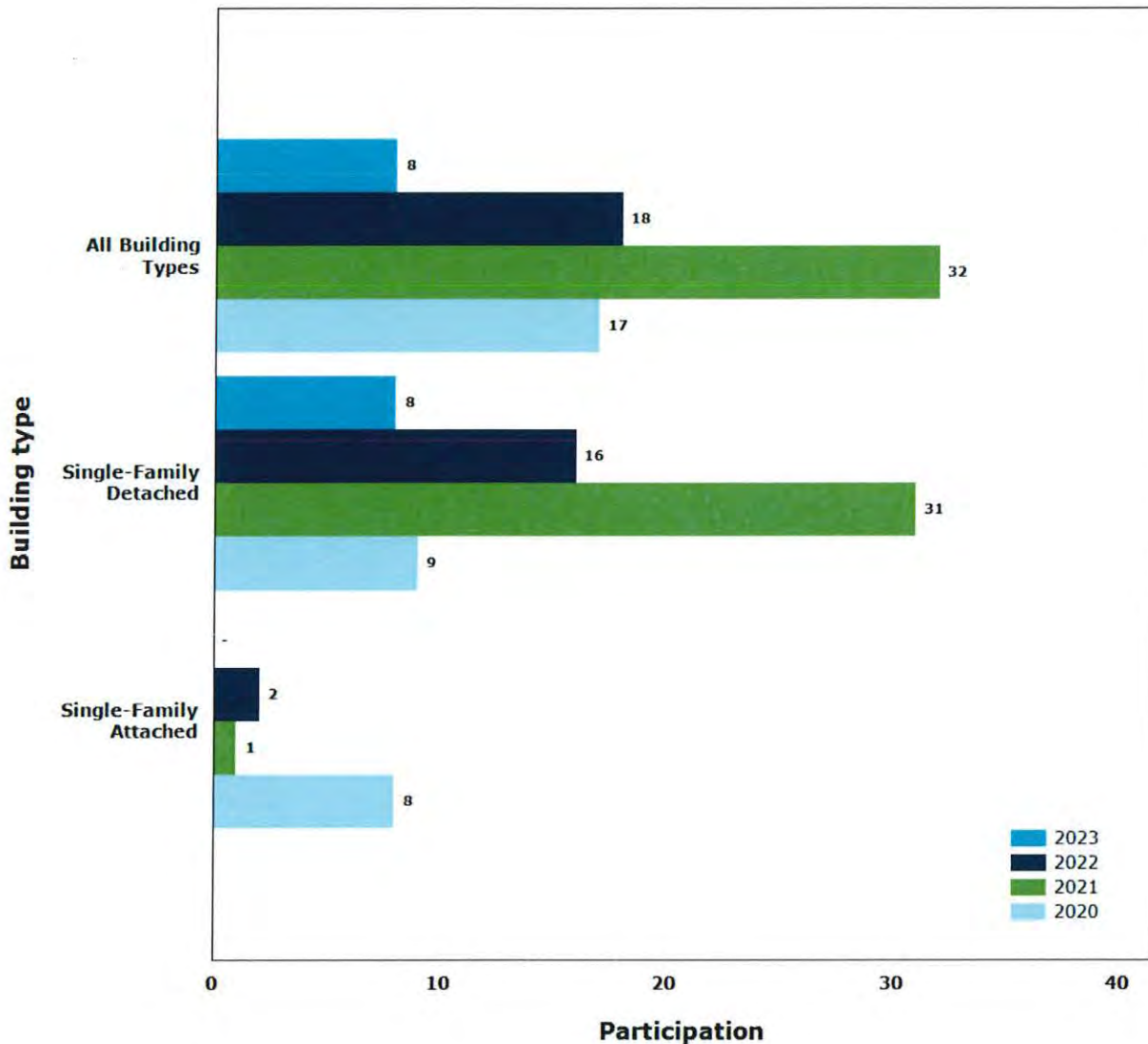
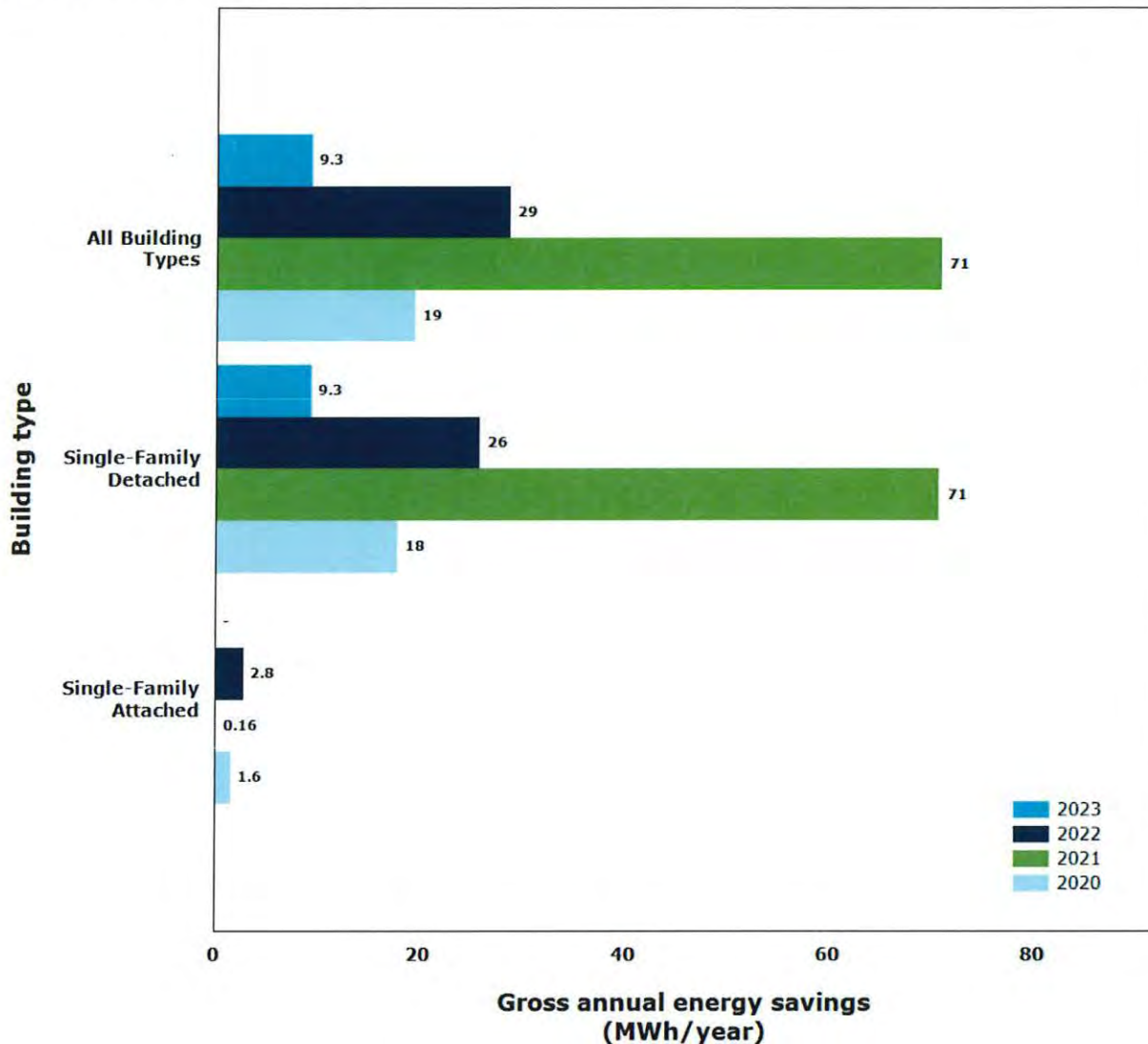




Figure 2-23. North Carolina Residential Home Energy Assessment Program gross annual energy savings (MWh/year) by building type and year

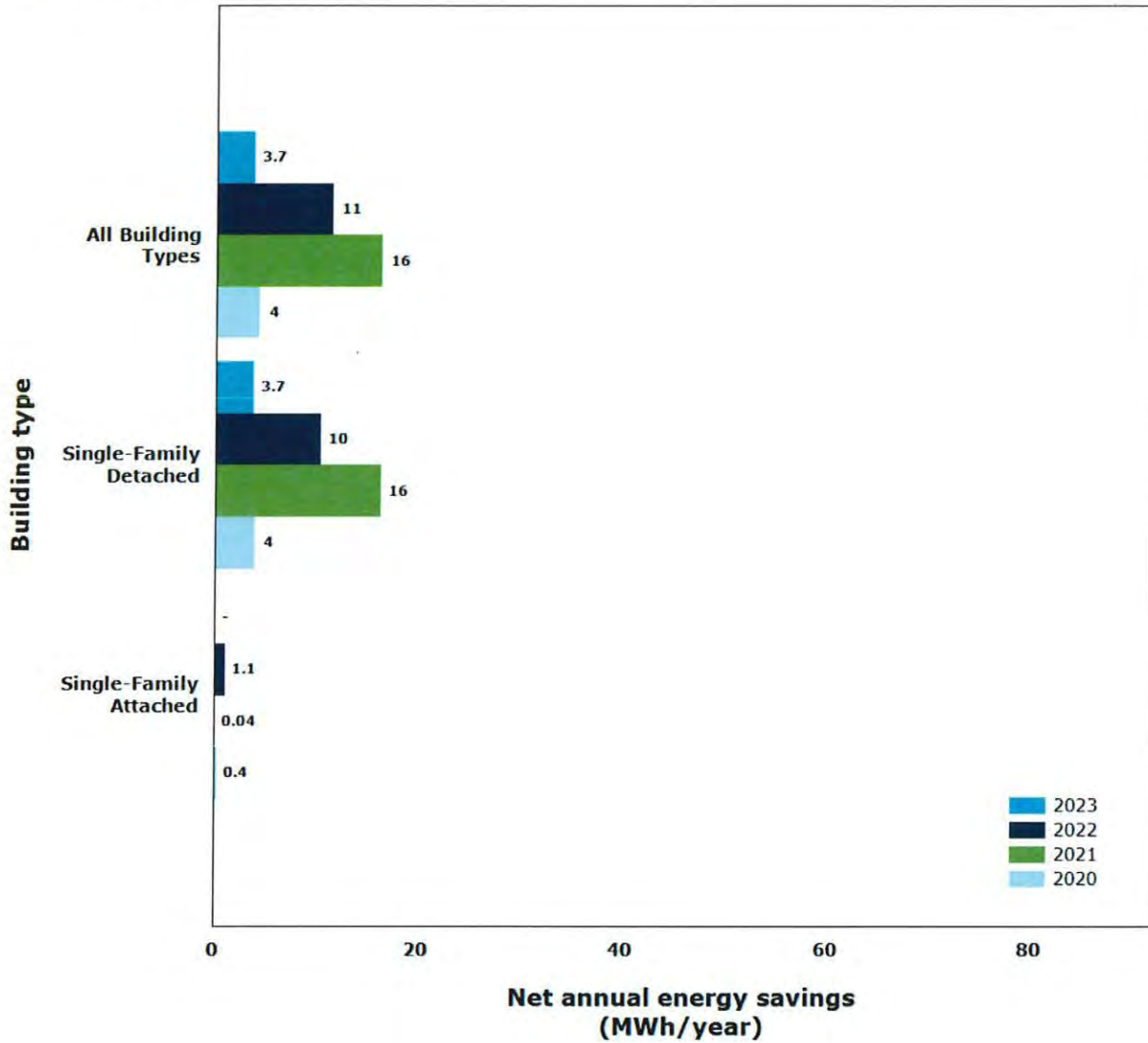


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Figure 2-24. North Carolina Residential Home Energy Assessment Program net annual energy savings (MWh/year) by building type and year





## 2.4 Residential Customer Engagement – Virginia

### 2.4.1 Program description

The Residential Customer Engagement Program provides regular home energy reports to help customers understand their energy usage and identify how energy is consumed in the home. Customers can review the detailed energy usage breakdown, along with tips for energy efficient appliance usage, to make changes in their home to reduce energy usage and save money. Customers can also see how their energy usage compares with other similar homes. The home energy reports encourage participation in other Dominion Energy Services DSM programs.



The SCC approved this program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the planned implementation schedule was delayed a year. The program officially launched on January 1, 2021 with 280,000 participant households for a five-year period of January 1, 2021, through December 31, 2025. In the spring of 2023, DNV conducted an impact evaluation of the Customer Engagement Program for program years 2021–2022. The values reported here reflect the results of the evaluation.

The customer engagement program performance was negatively impacted due to (1) a pause in the program, (2) digital report distribution interruption, and (3) several other unrelated IT issues. The program paused in April of 2023. A new version of the program started in the Spring of 2024.

### 2.4.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-11 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers that get renewed into the program each year.



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Table 2-11. Residential Customer Engagement Program initial planning assumptions

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 100%                  |
| Measure life (years)   | 1                     |
| Gross average annual savings (kWh/year) per participant                    | 168.00                |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.047                 |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.032                 |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.047                 |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.032                 |
| Net average annual energy savings (kWh/year) per participant               | 168                   |
| Average rebate (\$US) per participant                                      | \$0                   |

### 2.4.3 Assessment of program progress toward plan

The next subsection describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.4.3.1 Key Virginia program data

Table 2-12 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-12. Virginia Residential Customer Engagement Program Performance Indicators (2020–2023)<sup>25</sup>

| Category                             | Item                            | 2021        | 2022        | 2023        | Program total (2020–2023) |
|--------------------------------------|---------------------------------|-------------|-------------|-------------|---------------------------|
| Operations and management costs (\$) | Direct rebate                   |             |             |             |                           |
|                                      | Direct implementation           |             |             |             |                           |
|                                      | Direct EM&V                     |             |             |             |                           |
|                                      | Indirect other (administrative) | \$94,387    | \$73,045    | \$78,215    | \$252,586                 |
| Total costs (\$)                     | Total <sup>26</sup>             | \$2,012,981 | \$1,749,425 | \$1,157,588 | \$5,082,608               |
|                                      | Planned                         | \$1,904,508 | \$1,931,632 | \$1,801,627 | \$5,637,767               |
|                                      | Variance                        | \$108,473   | -\$182,207  | -\$644,039  | -\$555,159                |
|                                      | Annual % of planned             | 106%        | 91%         | 64%         | 90%                       |
| Participants                         | Total (Gross)                   | 286,456     | 263,463     | 256,468     | 806,387                   |
|                                      | Planned (Gross)                 | 287,500     | 277,400     | 258,300     | 823,200                   |

<sup>25</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>26</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company’s margins.



| Category                                      | Item  | 2021        | 2022        | 2023        | Program total (2020–2023) |
|---|---|-------------|-------------|-------------|---------------------------|
|   | Variance                                    | -1,044      | -13,937     | -1,832      | -16,813                   |
|   | Annual % of planned (Gross)                 | 100%        | 95%         | 99%         | 98%                       |
| <b>Installed energy savings (kWh/year)</b>    | Total gross deemed savings                  | 42,102,743  | 38,940,500  | 33,218,144  | 114,261,387               |
|   | Realization rate                            | 8%          | 17%         | 17%         | 38%                       |
|   | Realization rate adjustment                 | -38,734,523 | -32,320,615 | -27,571,060 | -98,626,198               |
|   | Adjusted gross savings                      | 3,368,219   | 6,619,885   | 5,647,085   | 15,635,189                |
|   | Net-to-gross ratio                          | 100%        | 100%        | 100%        | 100%                      |
|   | Net-to-gross adjustment                     | 0           | 0           | 0           | 0                         |
|   | Net adjusted savings                        | 3,368,219   | 6,619,885   | 5,647,085   | 15,635,189                |
|   | Planned savings (Net)                       | 48,300,000  | 46,603,200  | 43,394,400  | 138,297,600               |
|   | Annual percent toward planned savings (Net) | 7%          | 14%         | 13%         | 11%                       |
|   | Avg. savings per participant (Gross)        | 147         | 148         | 130         | 142                       |
|   | Avg. savings per participant (Net)          | 12          | 25          | 22          | 19                        |
| <b>Installed summer demand reduction (kW)</b> | Total gross demand reduction                | N/A         | N/A         | N/A         | N/A                       |
|   | Realization rate                            | N/A         | N/A         | N/A         | N/A                       |
|   | Realization rate adjustment                 | N/A         | N/A         | N/A         | N/A                       |
|   | Adjusted gross demand reduction             | N/A         | N/A         | N/A         | N/A                       |
|   | Net-to-gross ratio                          | N/A         | N/A         | N/A         | N/A                       |
|   | Net-to-gross Adjustment                     | N/A         | N/A         | N/A         | N/A                       |
|   | Net adjusted demand reduction               | N/A         | N/A         | N/A         | N/A                       |
|   | Planned demand (Net) <sup>27</sup>          | 13,513      | 13,038      | 12,141      | 38,694                    |
|   | Annual % toward planned demand (Net)        | N/A         | N/A         | N/A         | N/A                       |
|   | Avg. Peak demand per participant (Gross)    | N/A         | N/A         | N/A         | N/A                       |
|   | Avg. demand per participant (Net)           | N/A         | N/A         | N/A         | N/A                       |
| <b>Installed Winter Demand Reduction (kW)</b> | Total gross demand reduction                | N/A         | N/A         | N/A         | N/A                       |
|   | Realization rate                            | N/A         | N/A         | N/A         | N/A                       |
|   | Realization rate adjustment                 | N/A         | N/A         | N/A         | N/A                       |
|   | Adjusted gross demand reduction             | N/A         | N/A         | N/A         | N/A                       |
|   | Net-to-gross ratio                          | N/A         | N/A         | N/A         | N/A                       |
|   | Net-to-gross adjustment                     | N/A         | N/A         | N/A         | N/A                       |
|   | Net adjusted demand reduction               | N/A         | N/A         | N/A         | N/A                       |
|   | Planned demand (Net)                        | 9,200       | 8,877       | 8,266       | 26,342                    |

<sup>27</sup> Demand reduction is not evaluated or credited to the Residential Customer Engagement Program



| Category                                     | Item                                     | 2021   | 2022   | 2023   | Program total (2020–2023) |
|--|--|--------|--------|--------|---------------------------|
|  | Annual % toward planned demand (Net)     | 0%     | 0%     | 0%     | 0%                        |
|  | Avg. peak demand per participant (Gross) | N/A    | N/A    | N/A    | N/A                       |
|  | Avg. demand per participant (Net)        | N/A    | N/A    | N/A    | N/A                       |
| <b>Cumulative Annual Program performance</b> | \$Admin. per participant (Gross)         | \$0    | \$0    | \$0    | \$0                       |
|  | \$Admin. per kwh/year (gross)            | \$0.00 | \$0.00 | \$0.00 | \$0.00                    |
|  | \$Admin. per kw (gross)                  | N/A    | N/A    | N/A    | N/A                       |
|  | \$EM&V per total costs (\$)              | 9.5%   | 8.5%   | 11.4%  | 11.4%                     |
|  | \$Rebate per participant (gross)         | \$0    | \$0    | \$0    | \$0                       |

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**2.4.3.2 Additional Virginia program data**

Figure 2-25 and Figure 2-26 show participation and net annual energy savings by report delivery method and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-25 shows that 256,468 customers participated in the program in 2023. Participation drops slightly from year to year as customers move and accounts close. 62% of the reports were delivered by electronic mail and 38% were paper reports delivered by the U.S. Postal Service. Most of the reports were delivered to single family homes and townhouses.

**Figure 2-25. Residential Customer Engagement Program participation by home energy report delivery method**

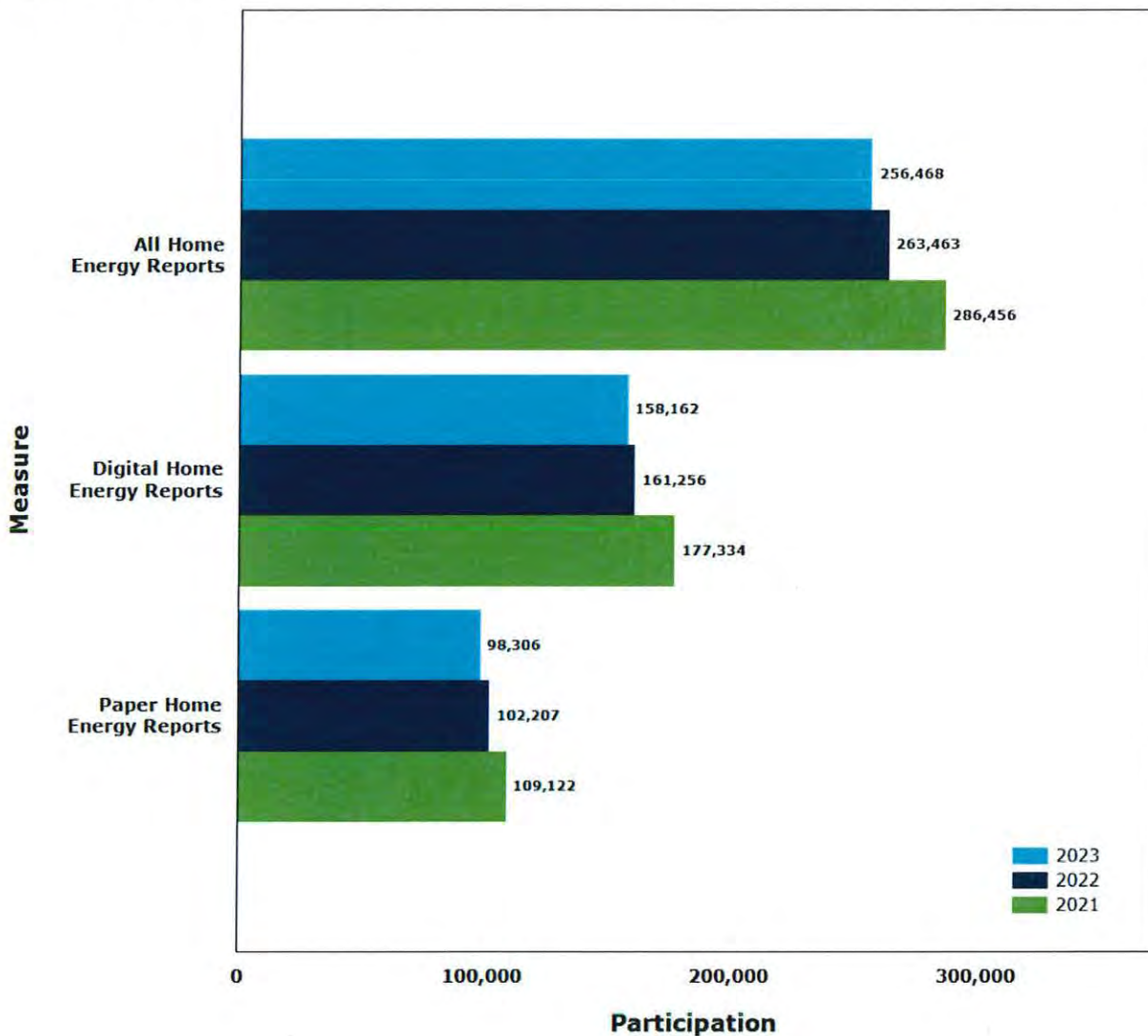






Figure 2-26. Virginia Residential Customer Engagement Program net annual energy savings (MWh/year) by home energy report delivery method

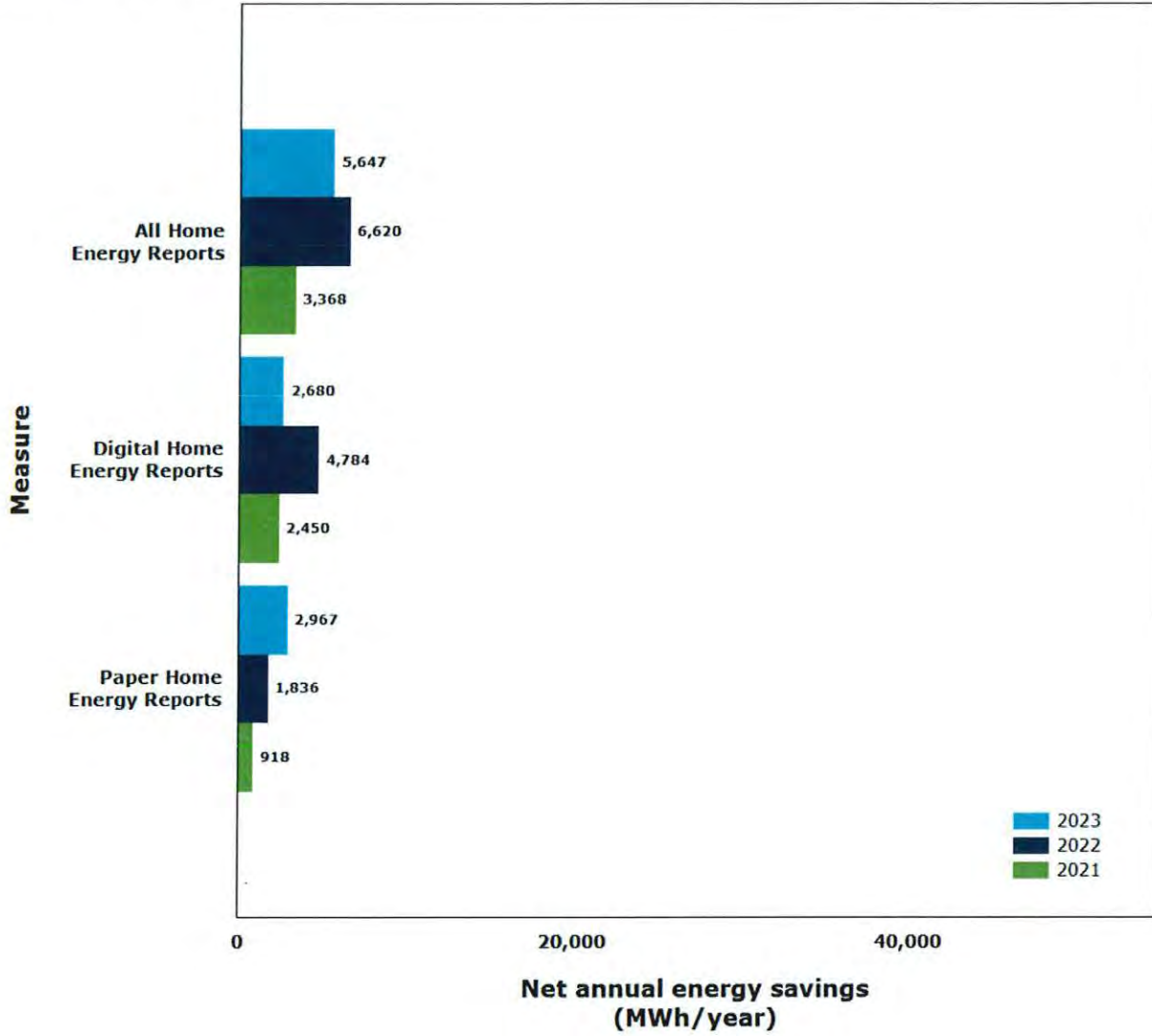




Figure 2-27 and Figure 2-28 show participation and net annual energy savings by building type and year.

Figure 2-27. Virginia Residential Customer Engagement Program participation by building type

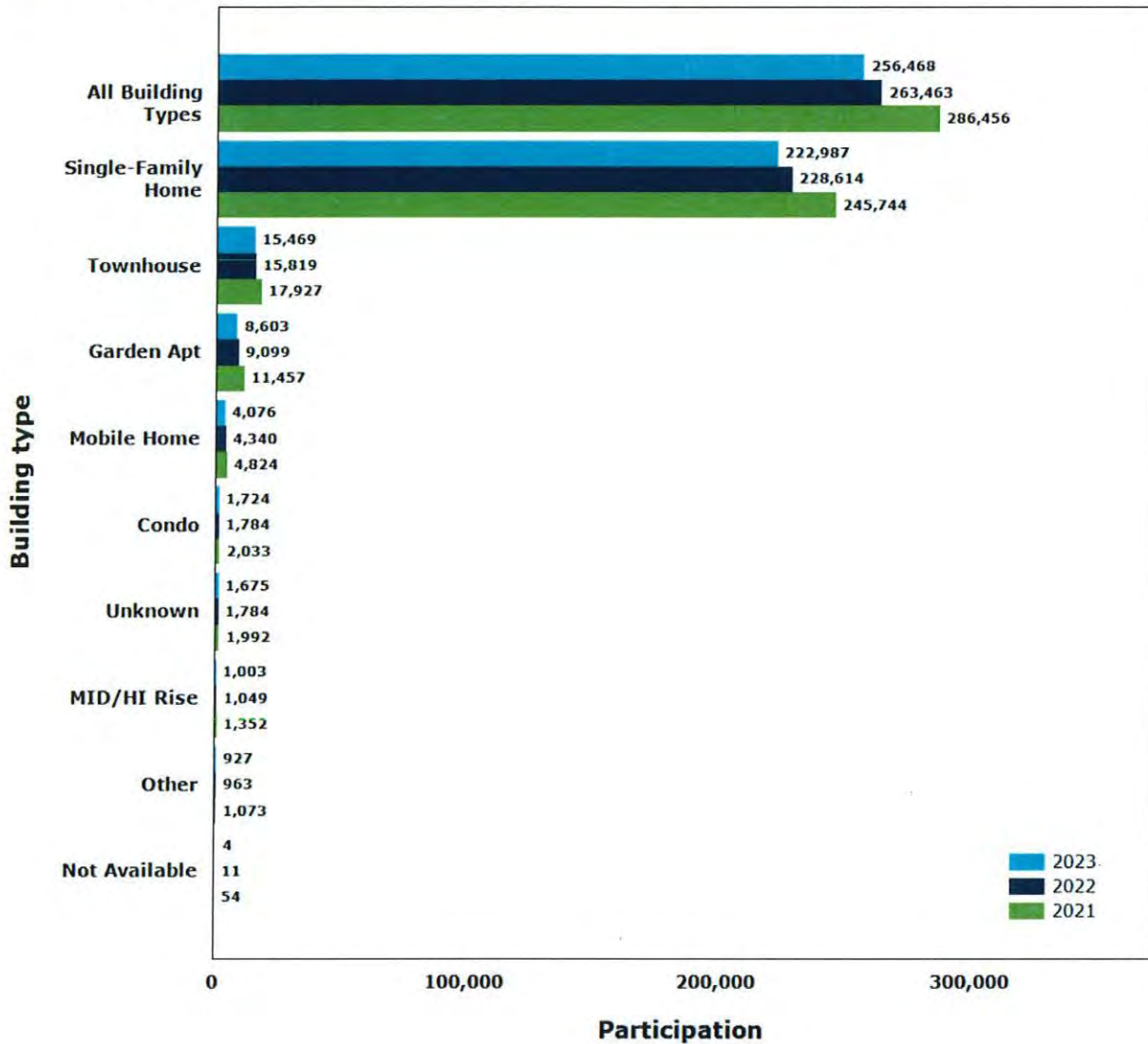
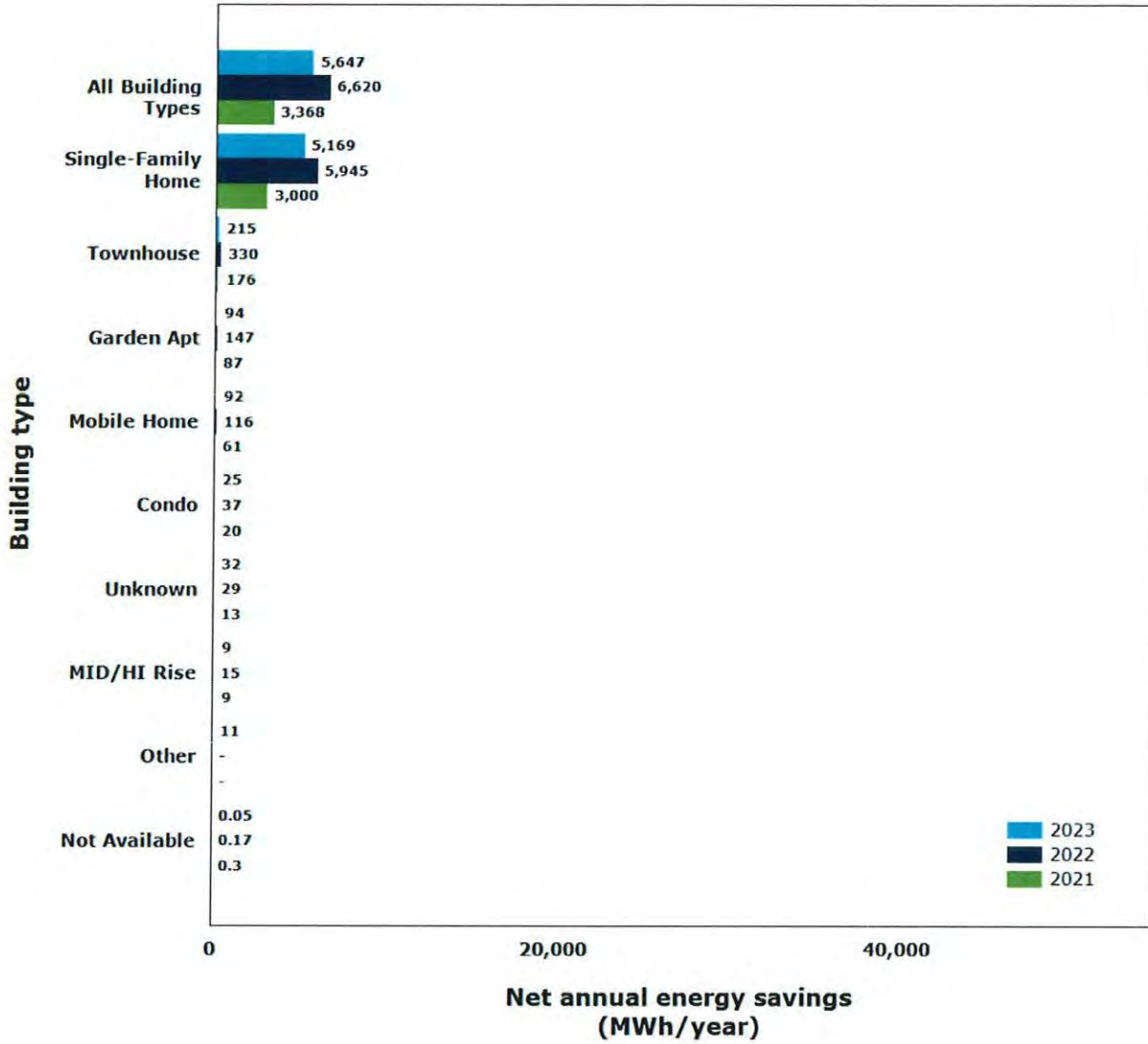




Figure 2-28. Virginia Residential Customer Engagement Program net annual energy savings (MWh/year) by building type





## 2.5 Residential Electric Vehicle Energy Efficiency and Demand Response – Virginia

### 2.5.1 Program description

The Residential Electric Vehicle (EV) Program provides residential customers a rebate to purchase and install up to two qualified Level 2 EV chargers as a pathway to enrolling in the EV Charger Rewards Program. To read more about the demand response EV Charger Rewards Program, please see Section 5.3. Customers must separately enroll in the demand response program.

Customers who live in single-family homes (detached, attached, or manufactured) on a residential rate and are responsible for the electric bill, are eligible to participate. Customers are not eligible if they are already enrolled in the Off-Peak Plan or any other time-of-use rate. To participate, customers must purchase a qualifying EV charger and apply for the program rebate within 120 days of purchase. The application process can take extra time because it often requires follow-up communications.



The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020 (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The energy efficiency portion of the program officially launched on March 1, 2021, and the demand response portion launched in 2022.<sup>28</sup>

In 2023, 340 new participants joined the program. Dominion Energy increased marketing for the energy efficiency program using bill inserts, partner emails with charger manufacturers, and social media advertisements.

### 2.5.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-13 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of chargers per unique account number, with a maximum of two chargers per account.

**Table 2-13. Residential Electric Vehicle (EE) Program planning assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 80%                   |
| Measure life (years)   | 10                    |
| Gross average annual savings per participant (kWh/year)                    | 469                   |
| Gross average summer coincident peak demand reduction per participant (kW) | 0.049                 |
| Gross average winter coincident peak demand reduction per participant (kW) | 0.016                 |
| Net average summer coincident peak demand reduction (kW) per participant   | 0                     |

<sup>28</sup> [Residential Electric Vehicle Program Terms and Conditions](#)



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| Assumption   | Value    |
|--|----------|
| Net average winter coincident peak demand reduction (kW) per participant | 0        |
| Net average annual energy savings per participant (kWh/year)             | 376      |
| Average rebate per participant (\$US)                                    | \$125.00 |

### 2.5.3 Assessment of program progress toward plan

The next section describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.5.3.1 Key Virginia program data

Table 2-14 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-14. Virginia Residential Electric Vehicle (EE) Program performance indicators (2020–2023)<sup>29</sup>

| Category                             | Item                            | 2021      | 2022       | 2023      | Program total (2020–2023) |
|--------------------------------------|---------------------------------|-----------|------------|-----------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |           |            |           |                           |
|                                      | Direct Implementation           |           |            |           |                           |
|                                      | Direct EM&V                     |           |            |           |                           |
|                                      | Indirect Other (Administrative) | \$13,241  | \$11,573   | \$5,660   | \$31,093                  |
| Total Costs (\$)                     | Total <sup>30</sup>             | \$282,385 | \$277,166  | \$83,768  | \$657,836                 |
|                                      | Planned                         | \$349,322 | \$385,915  | \$450,189 | \$1,185,425               |
|                                      | Variance                        | -\$66,937 | -\$108,749 | \$366,421 | -\$527,589                |
|                                      | Annual % of Planned             | 81%       | 72%        | 19%       | 55%                       |
| Participants                         | Total (Gross)                   | 93        | 206        | 340       | 639                       |
|                                      | Planned (Gross)                 | 550       | 748        | 1,144     | 2,442                     |
|                                      | Variance                        | -457      | -542       | -804      | -1,803                    |
|                                      | Annual % of Planned (Gross)     | 17%       | 28%        | 30%       | 26%                       |
| Installed Energy Savings (kWh/year)  | Total Gross Deemed Savings      | 12,379    | 27,255     | 43,375    | 83,008                    |
|                                      | Realization Rate                | 100%      | 100%       | 100%      | 100%                      |
|                                      | Realization Rate Adjustment     | 0         | 0          | 0         | 0                         |
|                                      | Adjusted Gross Savings          | 12,379    | 27,255     | 43,375    | 83,008                    |

<sup>29</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>30</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company’s margins.



| Category                                      | Item                                    | 2021    | 2022    | 2023    | Program total (2020–2023) |
|---|---|---------|---------|---------|---------------------------|
|   | Net-to-Gross Ratio <sup>31</sup>        | 80%     | 80%     | 80%     | 80%                       |
|   | Net-to-Gross Adjustment                 | -2,476  | -5,451  | -8,675  | -16,602                   |
|   | Net Adjusted Savings                    | 9,903   | 21,804  | 34,700  | 66,407                    |
|   | Planned Savings (Net)                   | 206,534 | 280,887 | 429,591 | 917,012                   |
|   | Annual % Toward Planned Savings (Net)   | 4.79%   | 7.76%   | 8.08%   | 7.24%                     |
|   | Average Savings per Participant (Gross) | 133     | 132     | 128     | 130                       |
|   | Average Savings per Participant (Net)   | 106     | 106     | 102     | 104                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0       | 0       | 0       | 0                         |
|   | Realization Rate                        | N/A     | N/A     | N/A     | N/A                       |
|   | Realization Rate Adjustment             | N/A     | N/A     | N/A     | N/A                       |
|   | Adjusted Gross Demand                   | 0       | 0       | 0       | 0                         |
|   | Net-to-Gross Ratio <sup>31</sup>        | N/A     | N/A     | N/A     | N/A                       |
|   | Net-to-Gross Adjustment                 | N/A     | N/A     | N/A     | N/A                       |
|   | Net Adjusted Demand                     | N/A     | N/A     | N/A     | N/A                       |
|   | Planned Demand (Net) <sup>32</sup>      | 21.4    | 29.1    | 44.6    | 95.1                      |
|   | Annual % Toward Planned Reduction (Net) | 0%      | 0%      | 0%      | 0%                        |
|   | Average Demand per Participant (Gross)  | 0       | 0       | 0       | 0                         |
| Average Demand per Participant (Net)          | 0                                       | 0       | 0       | 0       |                           |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0       | 0       | 0       | 0                         |
|   | Realization Rate                        | N/A     | N/A     | N/A     | N/A                       |
|   | Realization Rate Adjustment             | N/A     | N/A     | N/A     | N/A                       |
|   | Adjusted Gross Demand                   | N/A     | N/A     | N/A     | N/A                       |
|   | Net-to-Gross Ratio <sup>31</sup>        | N/A     | N/A     | N/A     | N/A                       |
|   | Net-to-Gross Adjustment                 | N/A     | N/A     | N/A     | 0                         |
|   | Net Adjusted Demand                     | N/A     | N/A     | N/A     | 0                         |
|   | Planned Demand (Net) <sup>32</sup>      | 7.1     | 9.7     | 14.9    | 31.7                      |
|   | Annual % Toward Planned Reduction (Net) | 0%      | 0%      | 0%      | 0%                        |
|   | Average Demand per Participant (Gross)  | 0       | 0       | 0       | 0                         |
| Average Demand per Participant (Net)          | 0                                       | 0       | 0       | 0       |                           |
| <b>Cumulative Annual</b>                      | \$Admin. per Participant (Gross)        | \$146   | \$85    | \$49    | \$49                      |
|   | \$Admin. per kWh/year (Gross)           | \$1     | \$1     | \$0     | \$0                       |

<sup>31</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 99% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.

<sup>32</sup> Despite its name, there is no demand component of the Electric Vehicle Energy Efficiency and Demand Response Program.



| Category            | Item                             | 2021  | 2022  | 2023  | Program total (2020–2023) |
|---------------------|----------------------------------|-------|-------|-------|---------------------------|
| Program Performance | \$Admin. per kW (Gross)          | N/A   | N/A   | N/A   | N/A                       |
|                     | \$EM&V per Total Costs (\$)      | 14.3% | 14.9% | 16.0% | 16.0%                     |
|                     | \$Rebate per Participant (Gross) | \$122 | \$125 | \$125 | \$125                     |

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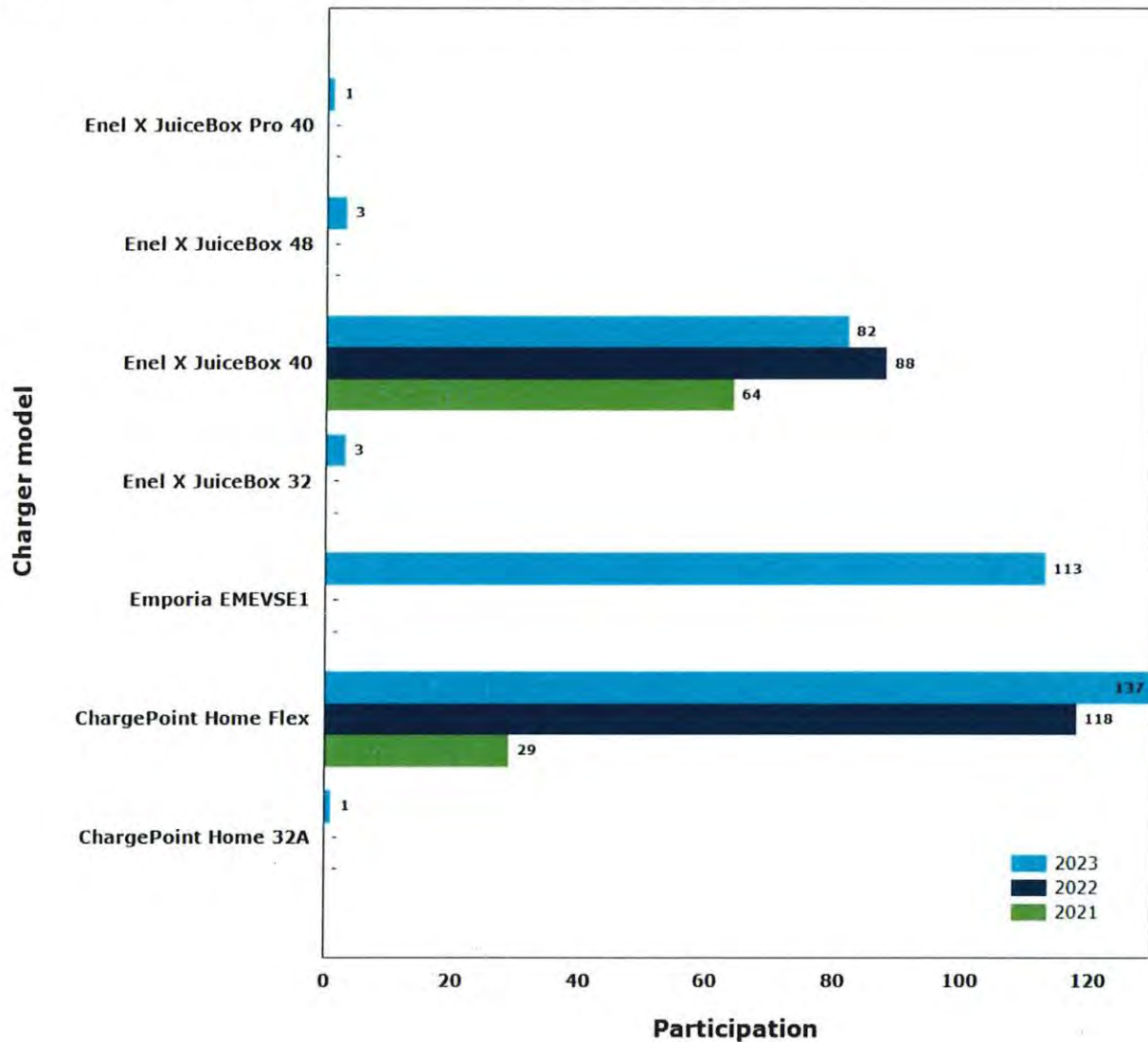
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**2.5.3.2 Additional Virginia program data**

Figure 2-29 shows the number of electric vehicle Level 2 chargers installed through the program. Dominion Energy executed its plan to add five eligible charger models to the program in 2023. The Emporia EMEVSE1 model showed strong participation. However, the ChargePoint Home Flex remains the most frequently rebated model.

**Figure 2-29. Number of installed electric vehicle Level 2 chargers by model**







## 2.6 Residential Home Retrofit – Virginia and North Carolina

### 2.6.1 Program description

The Residential Home Retrofit Program provides owners and occupants of single-family homes and townhomes with a home energy audit. This includes a walk-through review of the customer's home, the installation of energy-saving measures, and recommendations for additional home energy improvements. Customers receive the recommendations in a personalized report showing the projected energy and cost savings from implementing the options identified during the audit. The program is designed to provide a more comprehensive energy audit and is for homeowners who want to make a long-term investment in their home's energy efficiency and access more rebate opportunities. The eligible energy efficiency measures are detailed in Table 2-15.



Customers must contact a qualified participating contractor to receive the home energy audit. Customers are not considered to have fully participated in the program until a completed application form is processed and a rebate issued. This process can take several months, as customers have 45 days to submit their rebate application, and Dominion processes it within 90 days, typically sooner.

**Table 2-15. Measures offered through Residential Home Retrofit Program**

| End use            | Measure                           |
|--------------------|-----------------------------------|
| Domestic hot water | Water heater pipe insulation      |
|                    | Water heater temperature turndown |
|                    | Fixed and handheld showerhead     |
|                    | Kitchen and bathroom aerator      |
| Lighting           | LED lamps                         |
| Refrigeration      | Refrigerator coil brush           |
|                    | Refrigerator thermometer          |
| HVAC               | Heat pump tune-up                 |
|                    | Heat pump upgrade                 |
|                    | Domestic heat pump water heater   |
|                    | Fan motor                         |
|                    | Smart thermostat                  |
|                    | Air sealing                       |
|                    | Duct sealing and insulation       |
| Whole building     | Home energy management system     |
|                    | Insulation                        |

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (Case No. PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched in Virginia on January 15, 2021.<sup>33</sup> The North Carolina Utilities Commission approved this program on February 9, 2021 (Docket No. E-22 Sub 593) and the program officially launched in North Carolina on April 15, 2021.<sup>34</sup>

2023 was the last year of this program. On August 3, 2023, the SCC approved the Company's request (Case No. PUR-2022-00210) to close this program to be consistent with the recommendations in the Company's Long-Term Plan to streamline the DSM Portfolio (approved by the SCC in Case No. PUR-2021-00247).

<sup>33</sup> [Virginia Residential Home Retrofit Program Terms and Conditions.](#)

<sup>34</sup> [North Carolina Residential Home Retrofit Program Terms and Conditions](#)



Customers who were previously eligible for this program can still participate through the Phase XI Home Energy Evaluation Program.

### 2.6.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-16 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-16. Residential Home Retrofit Program planning assumptions system-wide**

| Assumption   | Value       |
|--|-------------|
| Target market  | Residential |
| NTG factor   | 90%         |
| Measure life (years)   | 24          |
| Gross average annual savings (kWh/year) per participant                    | 2,161       |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.62        |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.23        |
| Net average annual energy savings (kWh/year) per participant               | 1,945       |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.56        |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.21        |
| Average rebate (\$US) per participant                                      | \$379       |

### 2.6.3 Assessment of program progress toward plan

The next subsections describe the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.6.3.1 Key Virginia program data

Table 2-17 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.



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Table 2-17. Virginia Residential Home Retrofit Program performance indicators (2020–2023)<sup>35</sup>

| Category                             | Item                                  | 2021        | 2022         | 2023         | Program total (2020–2023) |
|--------------------------------------|---------------------------------------|-------------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                         |             |              |              |                           |
|                                      | Direct Implementation                 |             |              |              |                           |
|                                      | Direct EM&V                           |             |              |              |                           |
|                                      | Indirect Other (Administrative)       | \$40,585    | \$35,604     | \$61,102     | \$139,718                 |
| Total Costs (\$)                     | Total <sup>36</sup>                   | \$865,549   | \$852,714    | \$904,306    | \$2,679,455               |
|                                      | Planned                               | \$1,308,446 | \$1,874,062  | \$2,135,815  | \$5,318,323               |
|                                      | Variance                              | -\$442,897  | -\$1,021,348 | -\$1,231,509 | -\$2,638,868              |
|                                      | Annual % of Planned                   | 66%         | 46%          | 42%          | 50%                       |
| Participants                         | Total (Gross)                         | 99          | 50           | 44           | 193                       |
|                                      | Planned (Gross)                       | 846         | 1,880        | 2,350        | 5,076                     |
|                                      | Variance                              | -747        | -1,830       | -2,306       | -4,883                    |
|                                      | Annual % of Planned (Gross)           | 12%         | 3%           | 2%           | 4%                        |
| Installed Energy Savings (kWh/year)  | Total Gross Deemed Savings            | 207,565     | 127,675      | 106,684      | 441,924                   |
|                                      | Realization Rate                      | 100%        | 100%         | 100%         | 100%                      |
|                                      | Realization Rate Adjustment           | 0           | 0            | 0            | 0                         |
|                                      | Adjusted Gross Savings                | 207,565     | 127,675      | 106,684      | 441,924                   |
|                                      | Net-to-Gross Ratio <sup>37</sup>      | 90%         | 90%          | 90%          | 90%                       |
|                                      | Net-to-Gross Adjustment               | -20,757     | -12,767      | -10,668      | -44,192                   |
|                                      | Net Adjusted Savings                  | 186,809     | 114,907      | 96,015       | 397,731                   |
|                                      | Planned Savings (Net)                 | 1,645,617   | 3,656,927    | 4,571,158    | 9,873,702                 |
|                                      | Annual % Toward Planned Savings (Net) | 11.4%       | 3.1%         | 2.1%         | 4.0%                      |
|                                      | Avg. Savings per Participant (Gross)  | 2,097       | 2,553        | 2,425        | 2,290                     |
| Avg. Savings per Participant (Net)   | 1,887                                 | 2,298       | 2,182        | 2,061        |                           |
| Installed Summer Demand              | Total Gross Deemed Demand             | 68          | 30           | 27           | 125                       |
|                                      | Realization Rate                      | 100%        | 100%         | 100%         | 100%                      |
|                                      | Realization Rate Adjustment           | 0           | 0            | 0            | 0                         |

<sup>35</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>36</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>37</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 88% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category                                      | Item                                    | 2021   | 2022   | 2023    | Program total (2020–2023) |
|---|---|--------|--------|---------|---------------------------|
| <b>Reduction (kW)</b>                         | Adjusted Gross Demand                   | 68     | 30     | 27      | 125                       |
|   | Net-to-Gross Ratio <sup>37</sup>        | 90%    | 90%    | 90%     | 90%                       |
|   | Net-to-Gross Adjustment                 | -6.8   | -3.0   | -2.7    | -12.5                     |
|   | Net Adjusted Demand                     | 62     | 27     | 24      | 113                       |
|   | Planned Demand (Net)                    | 473    | 1,050  | 1,313   | 2,836                     |
|   | Annual % Toward Planned Reduction (Net) | 13.0%  | 2.6%   | 1.9%    | 4.0%                      |
|   | Avg. Demand per Participant (Gross)     | 0.70   | 0.60   | 0.60    | 0.60                      |
|   | Avg. Demand per Participant (Net)       | 0.60   | 0.50   | 0.50    | 0.60                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 75     | 44     | 35      | 154                       |
|   | Realization Rate                        | 100%   | 100%   | 100%    | 100%                      |
|   | Realization Rate Adjustment             | 0      | 0      | 0       | 0                         |
|   | Adjusted Gross Demand                   | 75     | 44     | 35      | 154                       |
|   | Net-to-Gross Ratio <sup>37</sup>        | 90%    | 90%    | 90%     | 90%                       |
|   | Net-to-Gross Adjustment                 | -7.5   | -4.4   | -3.5    | -15.4                     |
|   | Net Adjusted Demand                     | 68     | 40     | 31      | 139                       |
|   | Planned Demand (Net)                    | 175    | 388    | 485     | 1,048                     |
|   | Annual % Toward Planned Reduction (Net) | 39%    | 10%    | 6%      | 13%                       |
|   | Avg. Demand per Participant (Gross)     | 0.80   | 0.90   | 0.80    | 0.80                      |
|   | Avg. Demand per Participant (Net)       | 0.70   | 0.80   | 0.70    | 0.70                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | \$434  | \$528  | \$724   | \$724                     |
|   | \$Admin. per kWh/year (Gross)           | \$0.21 | \$0.23 | \$0.32  | \$0.32                    |
|   | \$Admin. per kW (Gross)                 | \$629  | \$799  | \$1,117 | \$1,117                   |
|   | \$EM&V per Total Costs (\$)             | 17.7%  | 17.8%  | 16.4%   | 16.4%                     |
|   | \$Rebate per Participant (Gross)        | \$234  | \$492  | \$686   | \$686                     |

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**2.6.3.2 Key North Carolina program data**

Table 2-18 provides performance indicator data from 2021 through 2023, in North Carolina. There were no participants in North Carolina through 2023. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-18. North Carolina Residential Home Retrofit Program performance indicators (2021-2023)<sup>35</sup>**

| Category                                      | Item                                  | 2021      | 2022      | 2023      | Program total (2021-2023) |
|---|---------------------------------------|-----------|-----------|-----------|---------------------------|
| <b>Operations and Management Costs (\$)</b>   | Direct Rebate                         |           |           |           |                           |
|   | Direct Implementation                 |           |           |           |                           |
|   | Direct EM&V                           |           |           |           |                           |
|   | Indirect Other (Administrative)       | \$1,676   | \$2,021   | \$3,422   | \$7,118                   |
| <b>Total Costs (\$)</b>                       | Total <sup>36</sup>                   | \$35,738  | \$48,397  | \$50,642  | \$134,778                 |
|   | Planned                               | \$81,417  | \$119,576 | \$131,208 | \$332,202                 |
|   | Variance                              | -\$45,678 | -\$71,179 | -\$80,566 | -\$197,424                |
|   | Annual % of Planned                   | 44%       | 40%       | 39%       | 41%                       |
| <b>Participants</b>                           | Total (Gross)                         | 0         | 0         | 0         | 0                         |
|   | Planned (Gross)                       | 54        | 120       | 150       | 324                       |
|   | Variance                              | -54       | -120      | -150      | -324                      |
|   | Annual % of Planned (Gross)           | 0%        | 0%        | 0%        | 0%                        |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings            | 0         | 0         | 0         | 0                         |
|   | Realization Rate                      | N/A       | N/A       | N/A       | N/A                       |
|   | Realization Rate Adjustment           | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Savings                | 0         | 0         | 0         | 0                         |
|   | Net-to-Gross Ratio <sup>37</sup>      | N/A       | N/A       | N/A       | N/A                       |
|   | Net-to-Gross Adjustment               | 0         | 0         | 0         | 0                         |
|   | Net Adjusted Savings                  | 0         | 0         | 0         | 0                         |
|   | Planned Savings (Net)                 | 105,039   | 233,421   | 291,776   | 630,236                   |
|   | Annual % Toward Planned Savings (Net) | 0%        | 0%        | 0%        | 0%                        |
|   | Avg. Savings per Participant (Gross)  | N/A       | N/A       | N/A       | N/A                       |
| Avg. Savings per Participant (Net)            | N/A                                   | N/A       | N/A       | N/A       |                           |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand             | 0         | 0         | 0         | 0                         |
|   | Realization Rate                      | N/A       | N/A       | N/A       | N/A                       |
|   | Realization Rate Adjustment           | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                 | 0         | 0         | 0         | 0                         |
|   | Net-to-Gross Ratio <sup>37</sup>      | N/A       | N/A       | N/A       | N/A                       |
|   | Net-to-Gross Adjustment               | 0         | 0         | 0         | 0                         |

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| Category                                      | Item                                    | 2021 | 2022  | 2023  | Program total (2021–2023) |
|---|---|------|-------|-------|---------------------------|
|   | Net Adjusted Demand                     | 0    | 0     | 0     | 0                         |
|   | Planned Demand (Net)                    | 30.2 | 67.0  | 83.8  | 181.0                     |
|   | Annual % Toward Planned Reduction (Net) | 0%   | 0%    | 0%    | 0%                        |
|   | Avg. Demand per Participant (Gross)     | N/A  | N/A   | N/A   | N/A                       |
|   | Avg. Demand per Participant (Net)       | N/A  | N/A   | N/A   | N/A                       |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0    | 0     | 0     | 0                         |
|   | Realization Rate                        | N/A  | N/A   | N/A   | N/A                       |
|   | Realization Rate Adjustment             | 0    | 0     | 0     | 0                         |
|   | Adjusted Gross Demand                   | 0    | 0     | 0     | 0                         |
|   | Net-to-Gross Ratio <sup>37</sup>        | N/A  | N/A   | N/A   | N/A                       |
|   | Net-to-Gross Adjustment                 | 0    | 0     | 0     | 0                         |
|   | Net Adjusted Demand                     | 0    | 0     | 0     | 0                         |
|   | Planned Demand (Net)                    | 11   | 25    | 31    | 67                        |
|   | Annual % Toward Planned Reduction (Net) | 0%   | 0%    | 0%    | 0%                        |
|   | Avg. Demand per Participant (Gross)     | N/A  | N/A   | N/A   | N/A                       |
| Avg. Demand per Participant (Net)             | N/A                                     | N/A  | N/A   | N/A   |                           |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | N/A  | N/A   | N/A   | N/A                       |
|   | \$Admin. per kWh/year (Gross)           | N/A  | N/A   | N/A   | N/A                       |
|   | \$Admin. per kW (Gross)                 | N/A  | N/A   | N/A   | N/A                       |
|   | \$EM&V per Total Costs (\$)             | 6.9% | 14.2% | 14.2% | 14.2%                     |
|   | \$Rebate per Participant (Gross)        | N/A  | N/A   | N/A   | N/A                       |

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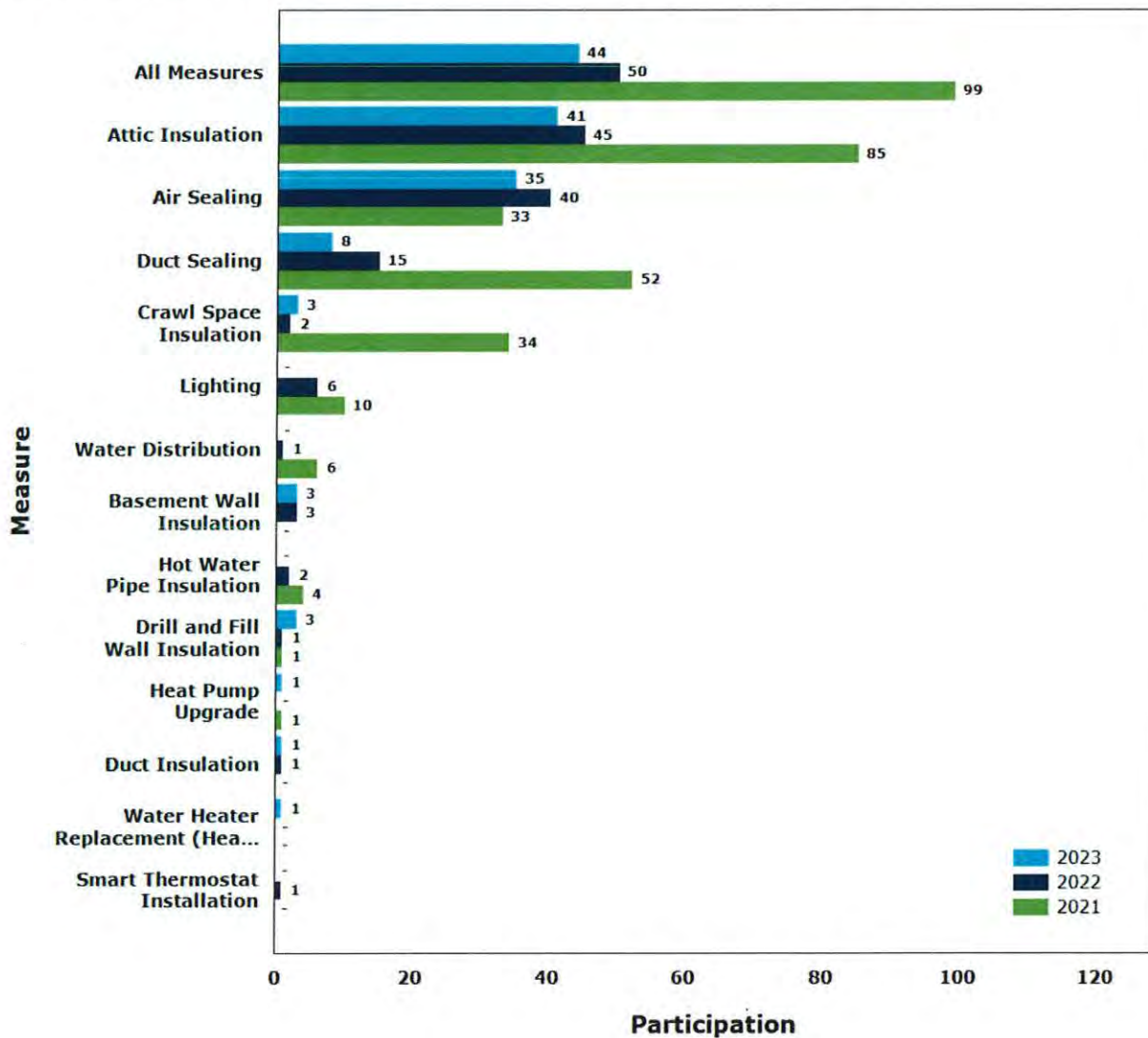


**2.6.3.3 Additional Virginia program data**

Figure 2-30 and Figure 2-31 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-30 shows that attic insulation was the most frequently adopted measure each year of the program, installed by 93% of the participants in 2023. Air sealing was the second most adopted measure for the second year in a row, completed by 80% of the participants.<sup>38</sup>

**Figure 2-30. Residential Home Retrofit Program participation by measure and year**

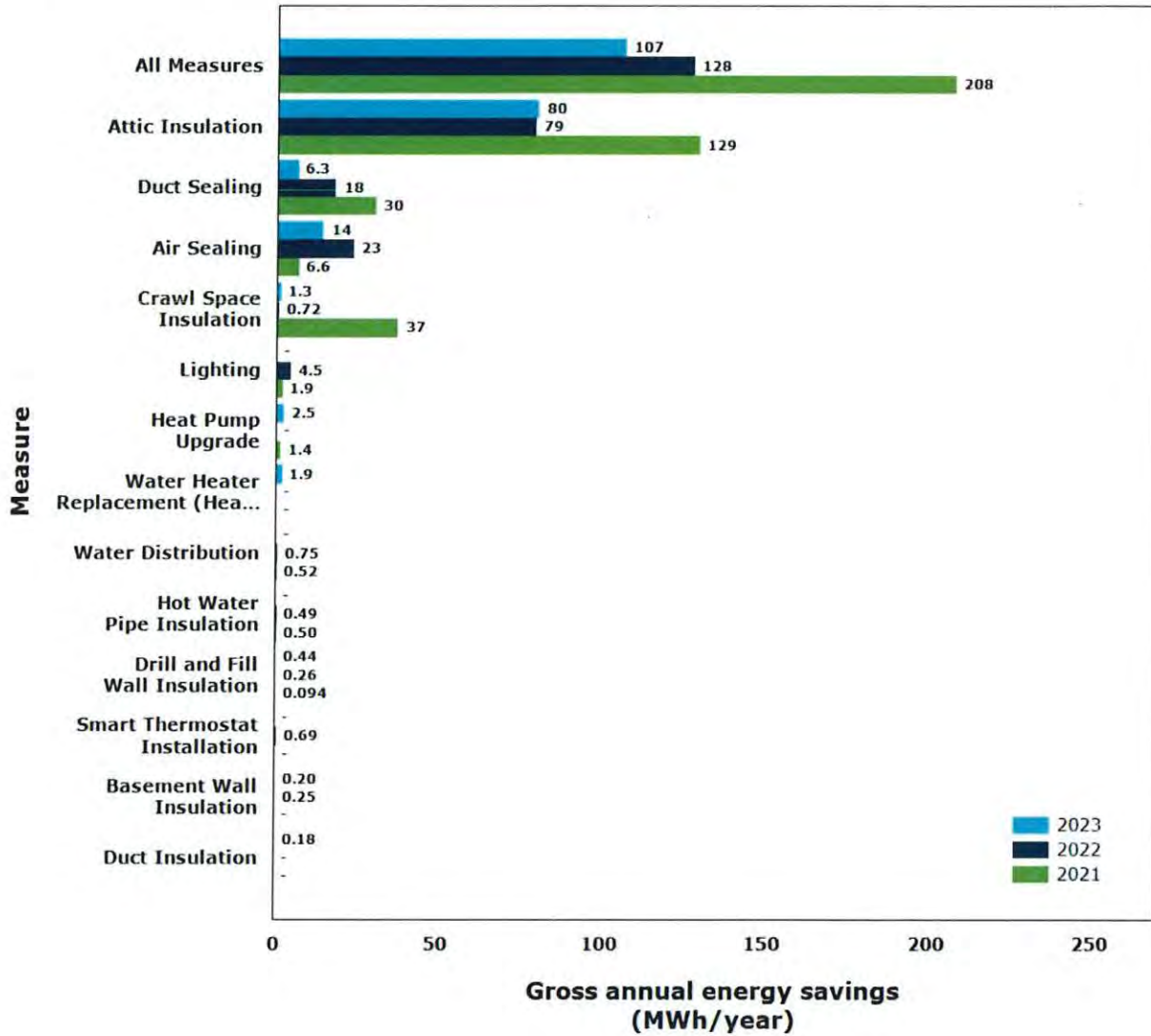


<sup>38</sup> Note that the participant counts in Figure 2-30 and Figure 2-31 are the number of new unique customers in the “All Measures” category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-17), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



In addition to being the most frequently adopted measure, attic insulation also accounted for the majority of savings (75%) achieved by the program in 2023, as shown in Figure 2-31.

Figure 2-31. Virginia Residential Home Retrofit Program gross annual energy savings (MWh/year) by measure and year



2.6.3.4 Additional North Carolina program data

There were no participants in North Carolina through 2023.





## 2.7 Residential Kits – Virginia and North Carolina

### 2.7.1 Program description

The Residential Energy Efficiency Kits Program distributes “Welcome Kits” to new residential customers in Dominion Energy’s Virginia and North Carolina service territories. The “Welcome Kits” include a Tier 1 advanced power strip – or “smart strip,” and an educational insert informing customers how to better manage their energy use. Also included in this package is a questionnaire which enables customers to opt-in to Tier 2 participation to receive additional energy-saving measures. The questionnaire helps to identify which measures have the potential to produce energy savings. The Tier 2 kit includes measures such as low-flow showerheads, aerators, water heater pipe insulation, LED lamp upgrades, door and window weatherstripping, door sweeps, outlet/switch gaskets, and caulking. Customers who request these additional measures, also receive educational materials on the proper use of each measure, household energy use facts, and cross-promotional information about other Dominion Energy programs to increase customer awareness of other energy-saving opportunities within the DSM portfolio.



The Virginia SCC approved this program as part of the DSM Phase VIII programs on July 30, 2020 (Case No. PUR-2019-00201) whereas the North Carolina Utilities Commission approved this program on November 13, 2020 (Docket No. E-22, SUB 592). While EM&V tracking started in 2020 for Virginia, participation in both state’s programs began in 2021.

Participation varies from year to year due to the natural variation in the number of new residential customers each year. Overall participation increased in 2023 to exceed the program’s annual goal in Virginia (111%) and increase from North Carolina’s 2022’s participation in (86%).

### 2.7.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-19 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-19. Residential Kits Program initial planning assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 60%                   |
| Measure life (years)   | 14.8                  |
| Gross average annual savings per participant (kWh/year)      | 440                   |
| Gross average demand reduction per participant (kW)          | 0.13                  |
| Net average annual energy savings per participant (kWh/year) | 264                   |
| Average rebate per participant (\$US)                        | \$51.45               |



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### 2.7.3 Assessment of program progress toward plan

This section describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.7.3.1 Key Virginia program data

Table 2-20 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-20. Virginia Residential Kits program performance indicators (2020-2023)<sup>39</sup>**

| Category                             | Item                             | 2021        | 2022        | 2023        | Program total (2020–2023) |
|--------------------------------------|----------------------------------|-------------|-------------|-------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                    |             |             |             |                           |
|                                      | Direct Implementation            |             |             |             |                           |
|                                      | Direct EM&V                      |             |             |             |                           |
|                                      | Indirect Other (Administrative)  | \$61,802    | \$51,451    | \$91,895    | \$206,689                 |
| Total Costs (\$)                     | Total <sup>40</sup>              | \$1,318,034 | \$1,232,247 | \$1,360,051 | \$3,946,449               |
|                                      | Planned                          | \$1,950,228 | \$1,925,785 | \$1,904,691 | \$5,780,704               |
|                                      | Variance                         | -\$632,193  | -\$693,539  | -\$544,640  | -\$1,834,255              |
|                                      | Annual % of Planned              | 68%         | 64%         | 71%         | 68%                       |
| Participants                         | Total (Gross)                    | 28,113      | 26,790      | 31,398      | 86,301                    |
|                                      | Planned (Gross)                  | 28,200      | 28,200      | 28,200      | 84,600                    |
|                                      | Variance                         | -87         | -1,410      | 3,198       | 1,701                     |
|                                      | Annual % of Planned (Gross)      | 100%        | 95%         | 111%        | 102%                      |
| Installed Energy Savings (kWh/year)  | Total Gross Deemed Savings       | 3,442,999   | 3,439,997   | 3,721,439   | 10,604,435                |
|                                      | Realization Rate                 | 100%        | 100%        | 100%        | 100%                      |
|                                      | Realization Rate Adjustment      | 0           | 0           | 0           | 0                         |
|                                      | Adjusted Gross Savings           | 3,442,999   | 3,439,997   | 3,721,439   | 10,604,435                |
|                                      | Net-to-Gross Ratio <sup>41</sup> | 60%         | 60%         | 60%         | 60%                       |
|                                      | Net-to-Gross Adjustment          | -1,377,200  | -1,375,999  | -1,488,576  | -4,241,774                |
|                                      | Net Adjusted Savings             | 2,065,800   | 2,063,998   | 2,232,864   | 6,362,661                 |

<sup>39</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>40</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>41</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 35% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                      | Item                                    | 2021      | 2022      | 2023      | Program total (2020–2023) |
|---|---|-----------|-----------|-----------|---------------------------|
|   | Planned Savings (Net)                   | 7,459,378 | 7,459,378 | 7,459,378 | 22,378,134                |
|   | Annual % Toward Planned Savings (Net)   | 28%       | 28%       | 30%       | 28%                       |
|   | Avg. Savings per Participant (Gross)    | 122       | 128       | 119       | 123                       |
|   | Avg. Savings per Participant (Net)      | 73        | 77        | 71        | 74                        |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 302.3     | 301.4     | 329.1     | 932.8                     |
|   | Realization Rate                        | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment             | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                   | 302       | 301       | 329       | 933                       |
|   | Net-to-Gross Ratio                      | 60%       | 60%       | 60%       | 60%                       |
|   | Net-to-Gross Adjustment                 | -120.9    | -120.6    | -131.6    | -373.1                    |
|   | Net Adjusted Demand                     | 181       | 181       | 198       | 560                       |
|   | Planned Demand (Net)                    | 662       | 662       | 662       | 1,985                     |
|   | Annual % Toward Planned Reduction (Net) | 27%       | 27%       | 30%       | 28%                       |
|   | Avg. Demand per Participant (Gross)     | 0.01      | 0.01      | 0.01      | 0.01                      |
| Avg. Demand per Participant (Net)             | 0.01                                    | 0.01      | 0.01      | 0.01      |                           |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 335       | 333       | 342       | 1,010                     |
|   | Realization Rate                        | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment             | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                   | 335       | 333       | 342       | 1,010                     |
|   | Net-to-Gross Ratio                      | 60%       | 60%       | 60%       | 60%                       |
|   | Net-to-Gross Adjustment                 | -134.0    | -133.0    | -136.9    | -403.9                    |
|   | Net Adjusted Demand                     | 201       | 200       | 205       | 606                       |
|   | Planned Demand (Net)                    | 653.5     | 653.5     | 653.5     | 1,960.4                   |
|   | Annual % Toward Planned Reduction (Net) | 31%       | 31%       | 31%       | 31%                       |
|   | Avg. Demand per Participant (Gross)     | 0.01      | 0.01      | 0.01      | 0.01                      |
| Avg. Demand per Participant (Net)             | 0.01                                    | 0.01      | 0.01      | 0.01      |                           |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | \$2       | \$2       | \$2       | \$2                       |
|   | \$Admin. per kWh/year (Gross)           | \$0.02    | \$0.02    | \$0.02    | \$0.02                    |
|   | \$Admin. per kW (Gross)                 | \$210     | \$190     | \$222     | \$222                     |
|   | \$EM&V per Total Costs (\$)             | 11%       | 10%       | 9%        | 9%                        |
|   | \$Rebate per Participant (Gross)        | \$30      | \$30      | \$30      | \$30                      |



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2.7.3.2 Key North Carolina program data

Table 2-21 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L

Table 2-21. North Carolina Residential Kits program performance indicators (2020–2023)<sup>42</sup>

| Category                             | Item                                  | 2021      | 2022      | 2023      | Program total (2020–2023) |
|--------------------------------------|---------------------------------------|-----------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                         |           |           |           |                           |
|                                      | Direct Implementation                 |           |           |           |                           |
|                                      | Direct EM&V                           |           |           |           |                           |
|                                      | Indirect Other (Administrative)       | \$2,678   | \$2,899   | \$4,869   | \$10,446                  |
| Total Costs (\$)                     | Total <sup>43</sup>                   | \$57,116  | \$69,433  | \$72,060  | \$198,609                 |
|                                      | Planned                               | \$121,351 | \$122,877 | \$117,010 | \$361,238                 |
|                                      | Variance                              | -\$64,235 | -\$53,444 | \$44,950  | -\$162,628                |
|                                      | Annual % of Planned                   | 47%       | 57%       | 62%       | 55%                       |
| Participants                         | Total (Gross)                         | 1,264     | 1,453     | 1,551     | 4,268                     |
|                                      | Planned (Gross)                       | 1,800     | 1,800     | 1,800     | 5,400                     |
|                                      | Variance                              | -536      | -347      | -249      | -1,132                    |
|                                      | Annual % of Planned (Gross)           | 70%       | 81%       | 86%       | 79%                       |
| Installed Energy Savings (kWh/year)  | Total Gross Deemed Savings            | 159,580   | 182,428   | 180,331   | 522,340                   |
|                                      | Realization Rate                      | 100%      | 100%      | 100%      | 100%                      |
|                                      | Realization Rate Adjustment           | 0         | 0         | 0         | 0                         |
|                                      | Adjusted Gross Savings                | 159,580   | 182,428   | 180,331   | 522,340                   |
|                                      | Net-to-Gross Ratio <sup>44</sup>      | 60%       | 60%       | 60%       | 60%                       |
|                                      | Net-to-Gross Adjustment               | -63,832   | -72,971   | -72,132   | -208,936                  |
|                                      | Net Adjusted Savings                  | 95,748    | 109,457   | 108,199   | 313,404                   |
|                                      | Planned Savings (Net)                 | 476,131   | 476,131   | 476,131   | 1,428,392                 |
|                                      | Annual % Toward Planned Savings (Net) | 20%       | 23%       | 23%       | 22%                       |

<sup>42</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>43</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>44</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 35% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                      | Item                                    | 2021   | 2022   | 2023   | Program total (2020–2023) |
|---|---|--------|--------|--------|---------------------------|
|   | Avg. Savings per Participant (Gross)    | 126    | 126    | 116    | 122                       |
|   | Avg. Savings per Participant (Net)      | 76     | 75     | 70     | 73                        |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 14     | 16     | 16     | 46                        |
|   | Realization Rate                        | 100%   | 100%   | 100%   | 100%                      |
|   | Realization Rate Adjustment             | 0      | 0      | 0      | 0                         |
|   | Adjusted Gross Demand                   | 14     | 16     | 16     | 46                        |
|   | Net-to-Gross Ratio                      | 60%    | 60%    | 60%    | 60%                       |
|   | Net-to-Gross Adjustment                 | -5.6   | -6.5   | -6.3   | -18.4                     |
|   | Net Adjusted Demand                     | 8.4    | 9.8    | 9.5    | 27.6                      |
|   | Planned Demand (Net)                    | 42     | 42     | 42     | 127                       |
|   | Annual % Toward Planned Reduction (Net) | 20%    | 23%    | 23%    | 22%                       |
|   | Avg. Demand per Participant (Gross)     | 0.01   | 0.01   | 0.01   | 0.01                      |
|   | Avg. Demand per Participant (Net)       | 0.01   | 0.01   | 0.01   | 0.01                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 15     | 18     | 16     | 49                        |
|   | Realization Rate                        | 100%   | 100%   | 100%   | 100%                      |
|   | Realization Rate Adjustment             | 0      | 0      | 0      | 0                         |
|   | Adjusted Gross Demand                   | 15     | 18     | 16     | 49                        |
|   | Net-to-Gross Ratio                      | 60%    | 60%    | 60%    | 60%                       |
|   | Net-to-Gross Adjustment                 | -6.1   | -7.2   | -6.5   | -19.7                     |
|   | Net Adjusted Demand                     | 9.1    | 10.7   | 9.7    | 29.6                      |
|   | Planned Demand (Net)                    | 42     | 42     | 42     | 125                       |
|   | Annual % Toward Planned Reduction (Net) | 22%    | 26%    | 23%    | 24%                       |
|   | Avg. Demand per Participant (Gross)     | 0.01   | 0.01   | 0.01   | 0.01                      |
|   | Avg. Demand per Participant (Net)       | 0.01   | 0.01   | 0.01   | 0.01                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | \$2    | \$2    | \$2    | \$2                       |
|   | \$Admin. per kWh/year (Gross)           | \$0.02 | \$0.02 | \$0.02 | \$0.02                    |
|   | \$Admin. per kW (Gross)                 | \$192  | \$185  | \$227  | \$227                     |
|   | \$EM&V per Total Costs (\$)             | 4.8%   | 8.0%   | 7.7%   | 7.7%                      |
|   | \$Rebate per Participant (Gross)        | \$30   | \$30   | \$30   | \$30                      |

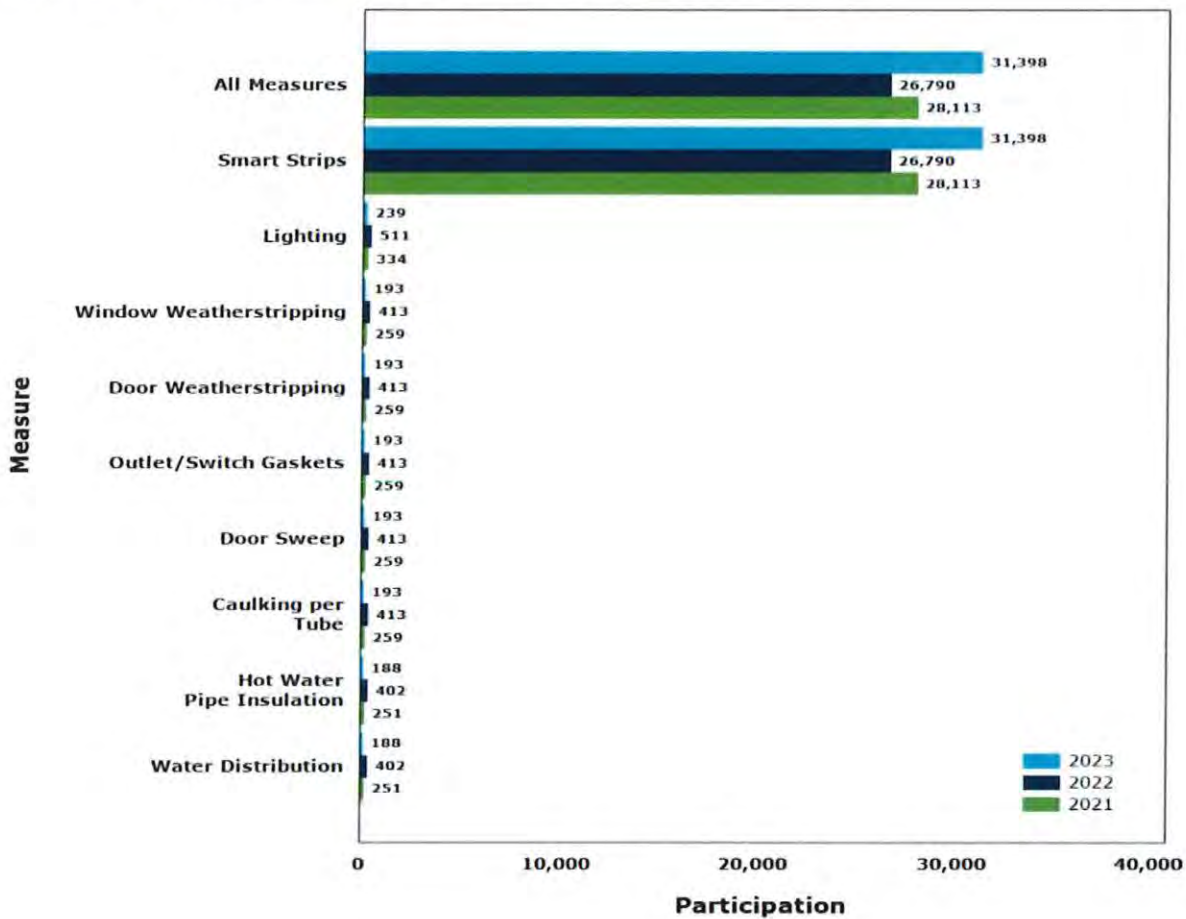


### 2.7.3.3 Additional Virginia program data

Figure 2-32 and Figure 2-33 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Participation begins with the delivery of a smart strip as a Tier 1 measure to a new customer and accounts for a majority of program participation. Most of the energy savings are attributed to the Tier 1 smart strip. Two percent of the Tier 1 participants pursued Tier 2 measures. Tier 2 measures were dominated by lighting followed by caulking, weatherstripping, outlet/switch gaskets, and door sweeps. Of the Tier 2 measures, savings were largely driven by water distribution, lighting, and hot water pipe insulation.<sup>45</sup>

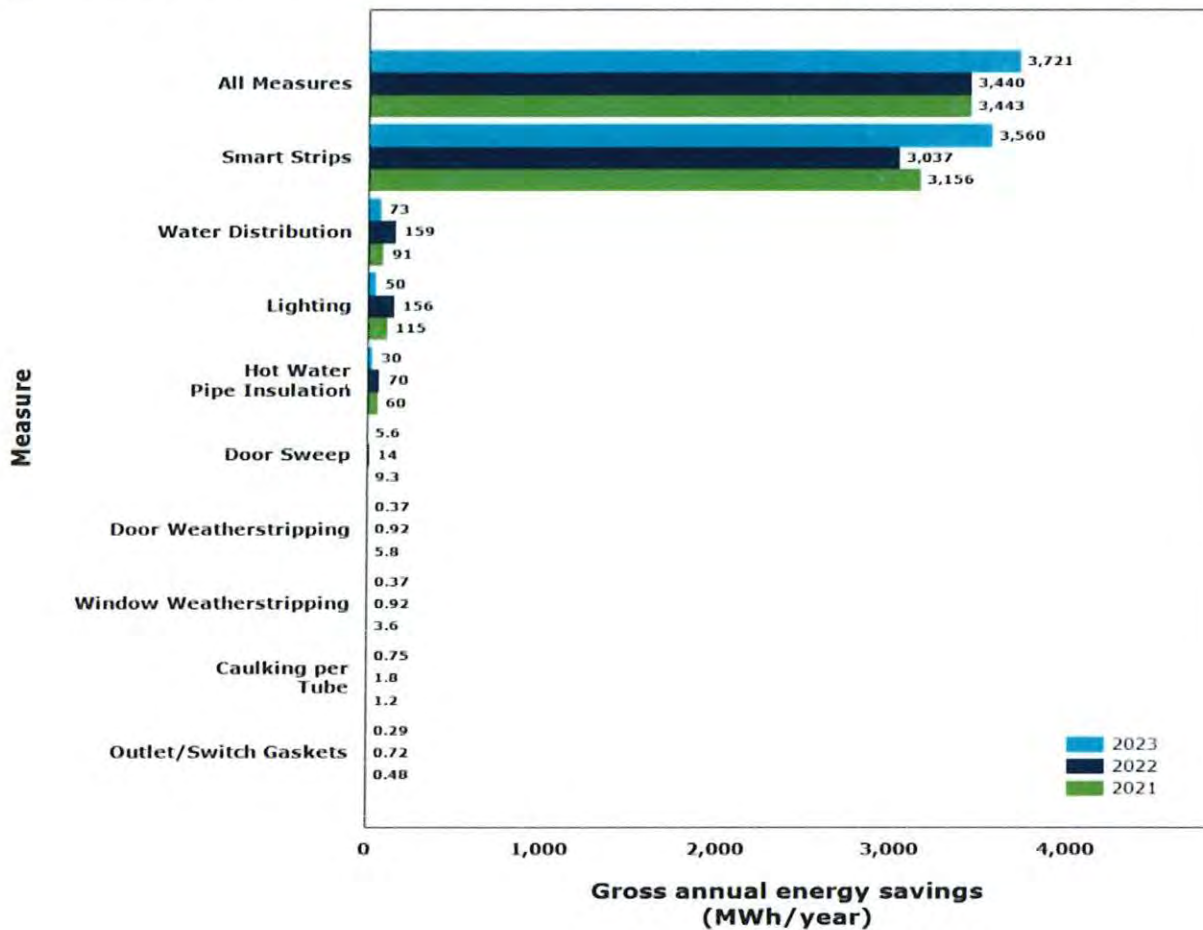
Figure 2-32. Virginia Residential Kits program participation by measure and year



<sup>45</sup> Note that the participant counts in Figure 2-32 and Figure 2-33 are the number of new unique customers in the “All Measures” category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-20), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-33. Virginia Residential Kits program gross annual energy savings (MWh/year) by measure and year



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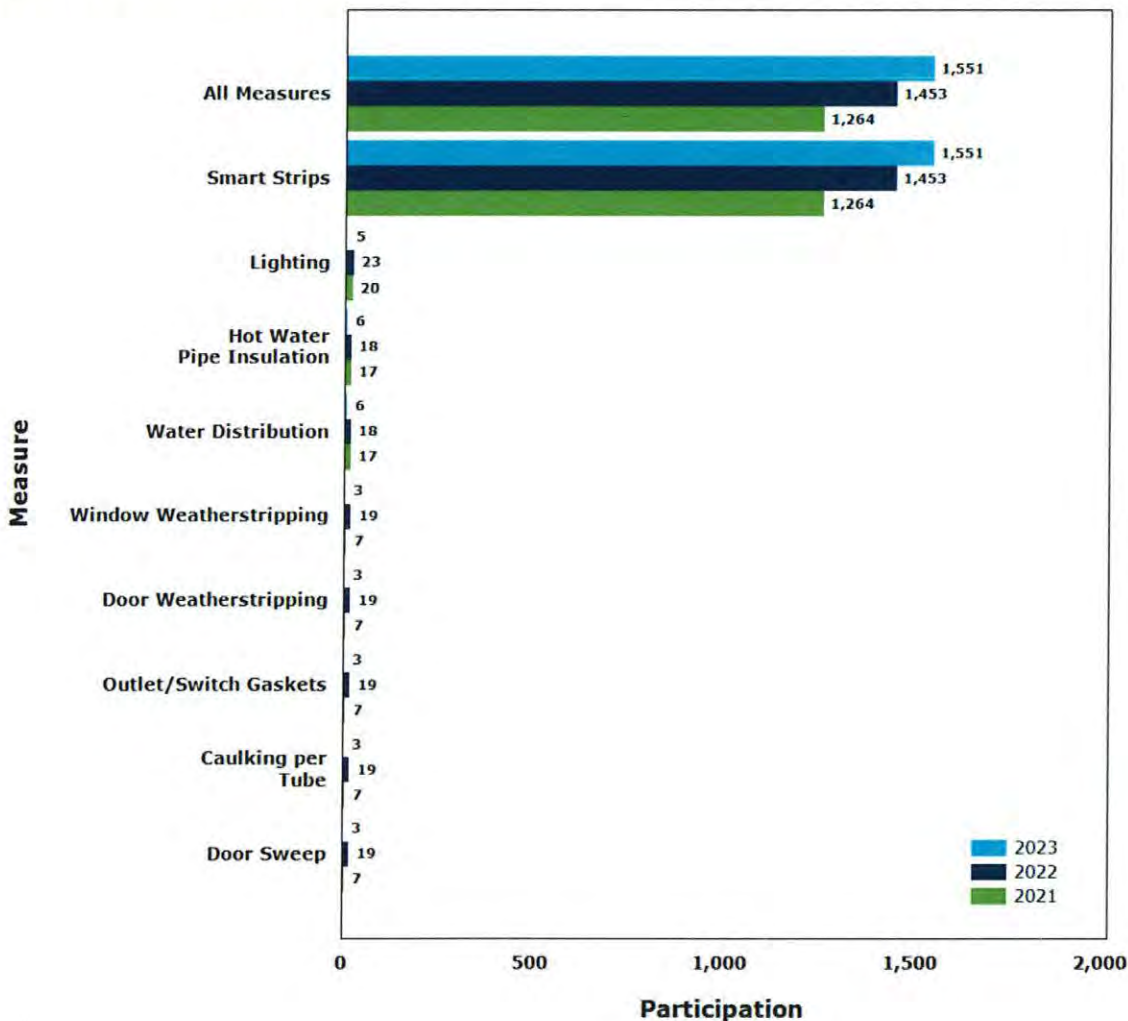


**2.7.3.4 Additional North Carolina program data**

Figure 2-34 and Figure 2-35 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K. In North Carolina, 1,551 customers participated in 2023. Most of the measures and energy savings are attributed to the Tier 1 smart strip. A minority of customers requested Tier 2 measures. Tier 2 measure savings were realized predominantly from the water distribution measure such as low-flow showerheads and faucet aerators, hot water pipe insulation, and lighting followed by outlet/switch gaskets, door sweeps, weatherstripping, and caulking.<sup>46</sup>

As with overall measure installs, most of the North Carolina program’s gross annual energy savings can be attributed to the smart strips participants initially received, with over 90% of the total for the three full years since the program launched.

**Figure 2-34. North Carolina Residential Kits program participation by measure and year**



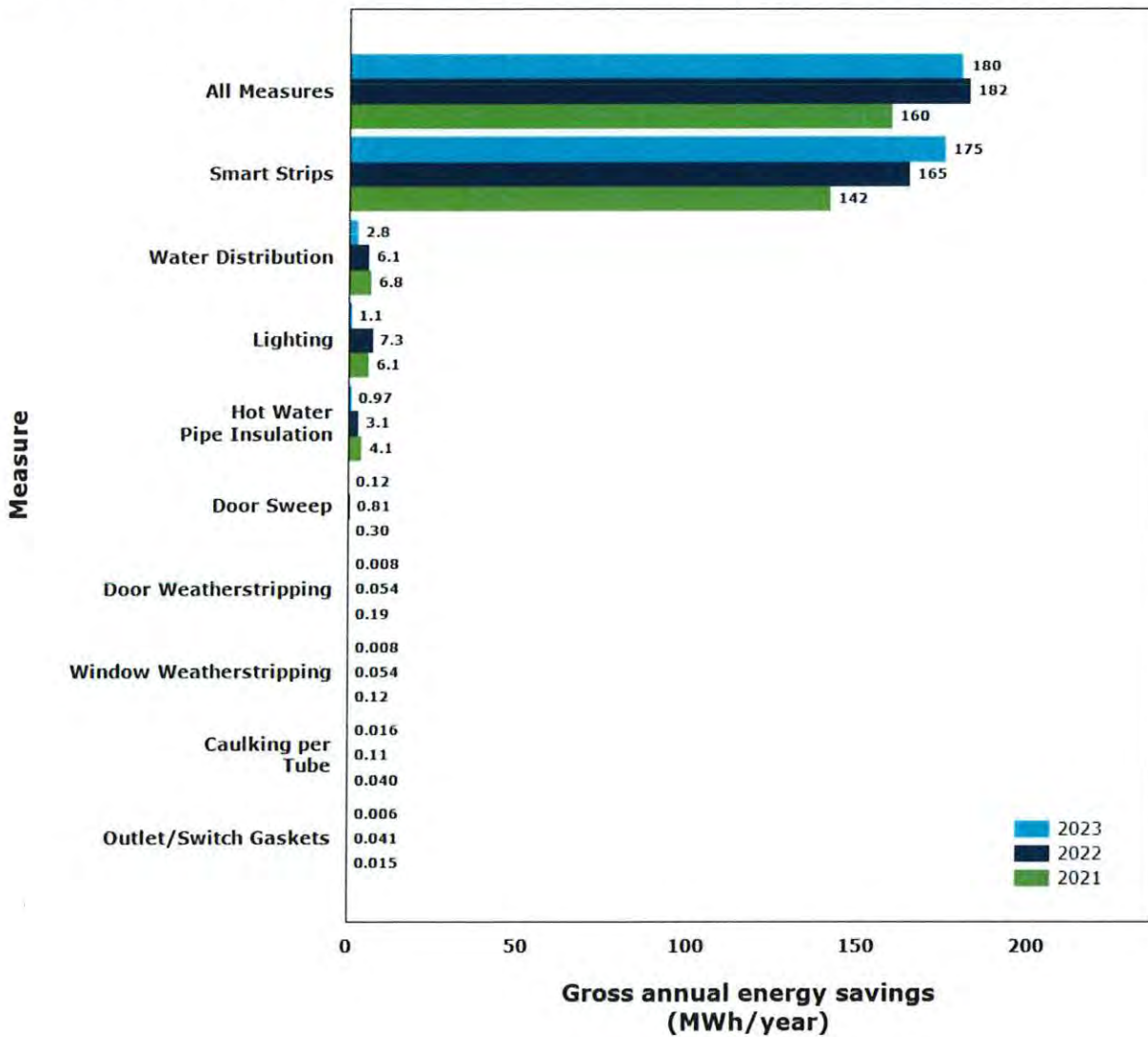
<sup>46</sup> Note that the participant counts in Figure 2-34 and Figure 2-35 are the number of new unique customers in the “All Measures” category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the North Carolina program performance indicators (Table 2-21), where a participant is only counted the first time they receive a rebate. After the first time the participant enrolls in a program, future applications do not accrue as new participants, though their savings are counted.





As with overall measure installs, most of the North Carolina program’s gross annual energy savings can be attributed to the smart strips participants initially received, with over 90% (482 MWh/year) of the total for the three full years since the program launched (522 MWh). For participants opting in to receive additional measures, savings were largely attributed to water distribution (1.6%), lighting (0.6%), and hot water pipe insulation (0.5%). The remainder of installed measures had relatively minimal annual energy savings.

Figure 2-35. North Carolina Residential Kits program gross annual energy savings (MWh/year) by measure and year



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## 2.8 Residential Manufactured Housing – Virginia

### 2.8.1 Program description

The Residential Manufactured Housing Program provides residential customers in manufactured housing with incentives to install energy efficiency measures. To qualify for the program, a customer must be in the Company’s Virginia service territory on a residential rate schedule and must reside in a manufactured home. Qualified customers must also be responsible for the electric bill and own the residence or be able to secure permission from the owner to perform the recommended improvements.



The program offers a walk-through assessment, performed by a qualified participating contractor, and covers all energy systems in the home, as well as the building envelope, with particular attention paid to the condition of domestic hot water and HVAC systems, level of insulation, and condition of the belly board. Participating contractors must be Building Performance Institute (BPI)-certified to collect the required data needed to perform energy calculations and generate a report showing projected energy and potential cost savings specific to each customer’s home. As part of the assessment, the contractor will install simple energy saving measures, such as LED lamps and water heater pipe insulation. Table 2-22 details the energy efficient measures that are offered in the program.

**Table 2-22. Measures offered through Residential Manufactured Housing Program**

| End use            | Measure                         |
|--------------------|---------------------------------|
| Domestic hot water | Domestic heat pump water heater |
| Refrigeration      | ENERGY STAR refrigerator        |
| HVAC               | Heat pump tune-up               |
|                    | Heat pump upgrade               |
|                    | Smart thermostat                |
|                    | Air sealing                     |
|                    | Duct sealing and insulation     |
| Whole building     | Cool roof                       |

The contractor will then review the findings and recommendations of the assessment report with the homeowner. Part of the contractor’s responsibility is to encourage and motivate participants to move forward with the installation of the most comprehensive set of recommended energy efficiency measures. The contractor will also provide customers with general energy efficiency education and site-specific energy conservation information. This will include a review of the energy efficiency options and available measure incentives to help the customer understand the costs

and benefits of each option and to answer their questions. The contractor will also show the customer how they can find and select a quality installation contractor in the expanded network of local installation contractors.

The Virginia SCC approved this program as part of the DSM Phase VIII programs on July 30, 2020 (Case No. PUR-2019-00201) for five years from July 1, 2019, through June 30, 2024. The program officially launched on January 15, 2021.<sup>47</sup>

<sup>47</sup> [Residential Manufactured Housing Program Terms and Conditions](#)



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### 2.8.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-23 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-23. Residential Manufactured Housing Program planning assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 90%                   |
| Measure life (years)   | 15.13                 |
| Gross average annual savings (kWh/year) per participant                    | 1,970.11              |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.51                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.19                  |
| Net average annual energy savings (kWh/year) per participant               | 1,773.10              |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.459                 |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.171                 |
| Average rebate (\$US) per participant                                      | \$356                 |

### 2.8.3 Assessment of program progress toward plan

The next subsection describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.8.3.1 Key Virginia program data

Table 2-40 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Program participation increased significantly in 2023. The DE program manager attributed the increase to public events that were held by DE, in addition to program pamphlets and word of mouth.

**Table 2-24. Virginia Residential Manufactured Housing Program performance indicators (2020–2023)<sup>48</sup>**

| Category                             | Item                            | 2021     | 2022     | 2023     | Program total (2020–2023) |
|--------------------------------------|---------------------------------|----------|----------|----------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |          |          |          |                           |
|                                      | Direct Implementation           |          |          |          |                           |
|                                      | Direct EM&V                     |          |          |          |                           |
|                                      | Indirect Other (Administrative) | \$30,122 | \$26,196 | \$47,233 | \$105,673                 |

<sup>48</sup> The sum of the individual annual values may differ from the total value due to rounding.



| Category                                      | Item                                    | 2021        | 2022         | 2023         | Program total (2020-2023) |
|---|---|-------------|--------------|--------------|---------------------------|
| <b>Total Costs (\$)</b>                       | Total <sup>49</sup>                     | \$642,418   | \$627,383    | \$699,057    | \$2,018,574               |
|   | Planned                                 | \$1,129,167 | \$1,733,136  | \$1,830,485  | \$4,692,788               |
|   | Variance                                | -\$486,749  | -\$1,105,753 | -\$1,131,428 | -\$2,674,214              |
|   | Annual % of Planned                     | 57%         | 36%          | 38%          | 43%                       |
| <b>Participants</b>                           | Total (Gross)                           | 3           | 3            | 554          | 560                       |
|   | Planned (Gross)                         | 1,000       | 2,200        | 2,400        | 5,600                     |
|   | Variance                                | -997        | -2,197       | -1,846       | -5,040                    |
|   | Annual % of Planned (Gross)             | 0%          | 0%           | 23%          | 10%                       |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings              | 916         | 310          | 118,331      | 119,556                   |
|   | Realization Rate                        | 100%        | 100%         | 100%         | 100%                      |
|   | Realization Rate Adjustment             | 0           | 0            | 0            | 0                         |
|   | Adjusted Gross Savings                  | 916         | 310          | 118,331      | 119,556                   |
|   | Net-to-Gross Ratio <sup>50</sup>        | 90%         | 90%          | 90%          | 90%                       |
|   | Net-to-Gross Adjustment                 | -92         | -31          | -11,833      | -11,956                   |
|   | Net Adjusted Savings                    | 824         | 279          | 106,498      | 107,601                   |
|   | Planned Savings (Net)                   | 1,773,101   | 3,900,822    | 4,255,442    | 9,929,366                 |
|   | Annual % Toward Planned Savings (Net)   | 0.05%       | 0.01%        | 2.50%        | 1.08%                     |
|   | Avg. Savings per Participant (Gross)    | 305         | 103          | 214          | 213                       |
|   | Avg. Savings per Participant (Net)      | 275         | 93           | 192          | 192                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0.1         | 0.03         | 45           | 45                        |
|   | Realization Rate                        | 100%        | 100%         | 100%         | 100%                      |
|   | Realization Rate Adjustment             | 0           | 0            | 0            | 0                         |
|   | Adjusted Gross Demand                   | 0.10        | 0.03         | 45           | 45                        |
|   | Net-to-Gross Ratio <sup>50</sup>        | 90%         | 90%          | 90%          | 90%                       |
|   | Net-to-Gross Adjustment                 | 0           | -0.003       | -4.5         | -4.5                      |
|   | Net Adjusted Demand                     | 0.10        | 0.02         | 40           | 40                        |
|   | Planned Demand (Net)                    | 459.0       | 1,009.8      | 1,101.6      | 2,570.4                   |
|   | Annual % Toward Planned Reduction (Net) | 0.02%       | 0.002%       | 3.6%         | 1.6%                      |
|   | Avg. Demand per Participant (Gross)     | 0.03        | 0.01         | 0.08         | 0.08                      |
|   | Avg. Demand per Participant (Net)       | 0.03        | 0.01         | 0.07         | 0.07                      |

<sup>49</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>50</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 97% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology.



| Category                                      | Item                                    | 2021      | 2022      | 2023    | Program total (2020–2023) |
|---|---|-----------|-----------|---------|---------------------------|
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0.1       | 0.1       | 51      | 51                        |
|   | Realization Rate                        | 100%      | 100%      | 100%    | 100%                      |
|   | Realization Rate Adjustment             | 0         | 0         | 0       | 0                         |
|   | Adjusted Gross Demand                   | 0.1       | 0.1       | 51      | 51                        |
|   | Net-to-Gross Ratio <sup>50</sup>        | 90%       | 90%       | 90%     | 90%                       |
|   | Net-to-Gross Adjustment                 | 0         | 0         | -5.1    | -5.1                      |
|   | Net Adjusted Demand                     | 0.1       | 0.1       | 46      | 46                        |
|   | Planned Demand (Net)                    | 171       | 376       | 410     | 958                       |
|   | Annual % Toward Planned Reduction (Net) | 0.06%     | 0.01%     | 11%     | 5%                        |
|   | Avg. Demand per Participant (Gross)     | 0.04      | 0.02      | 0.09    | 0.09                      |
|   | Avg. Demand per Participant (Net)       | 0.03      | 0.02      | 0.08    | 0.08                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | \$10,748  | \$9,740   | \$189   | \$189                     |
|   | \$Admin. per kWh/year (Gross)           | \$35      | \$48      | \$0.88  | \$0.88                    |
|   | \$Admin. per kW (Gross)                 | \$381,172 | \$523,376 | \$2,352 | \$2,352                   |
|   | \$EM&V per Total Costs (\$)             | 22.1%     | 18.0%     | 14.1%   | 14.1%                     |
|   | \$Rebate per Participant (Gross)        | \$15      | \$29      | \$39    | \$39                      |

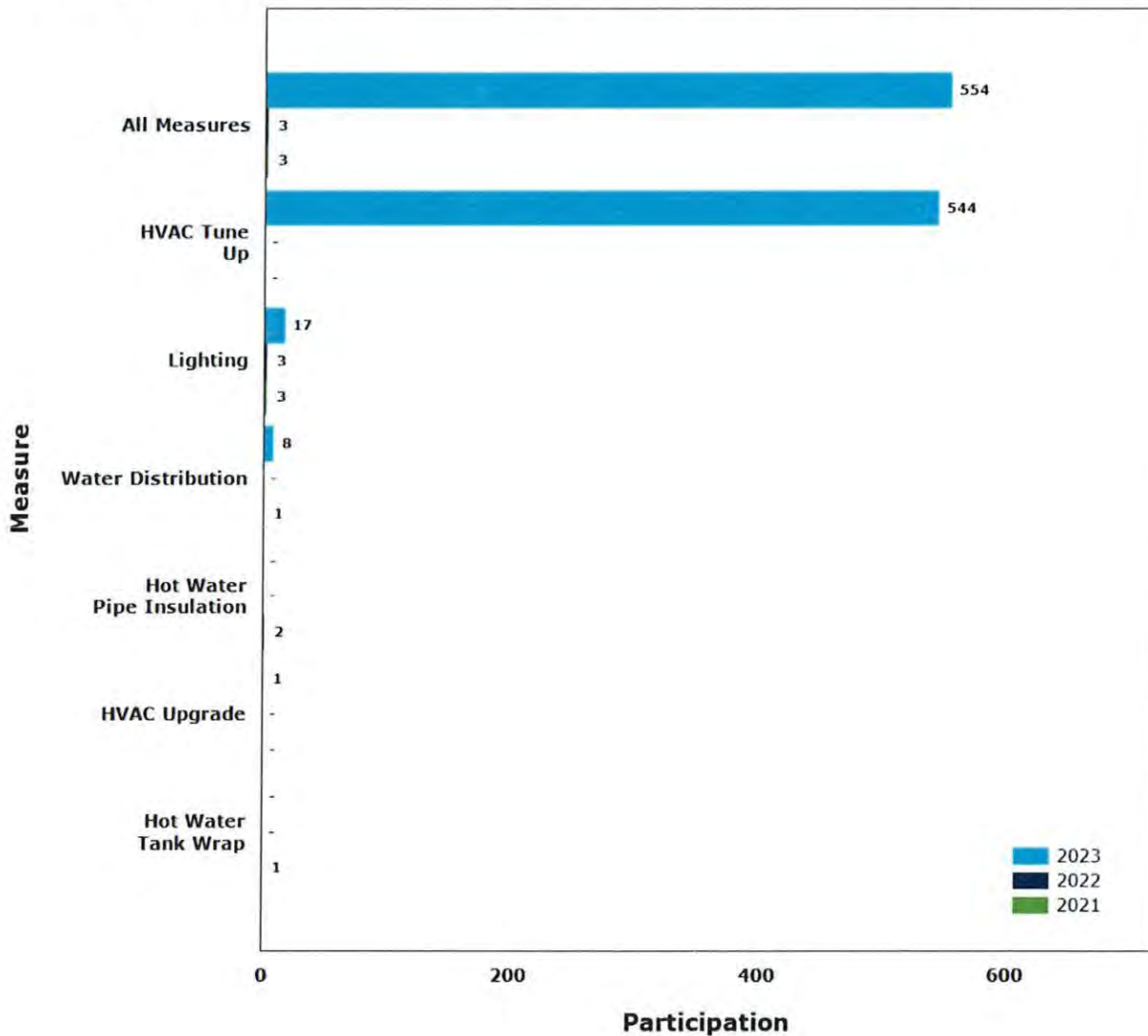


**2.8.3.2 Additional Virginia program data**

Figure 2-36 and Figure 2-37 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

In 2023, HVAC tune-ups were performed by 98% of participants and accounted for 92% of energy savings, as shown in Figure 2-36 and Figure 2-37, respectively. The DE program manager stated that they intentionally targeted HVAC tune-ups as part of an ongoing trial and error strategy to increase participation and to provide maximum value to the customer.<sup>51</sup>

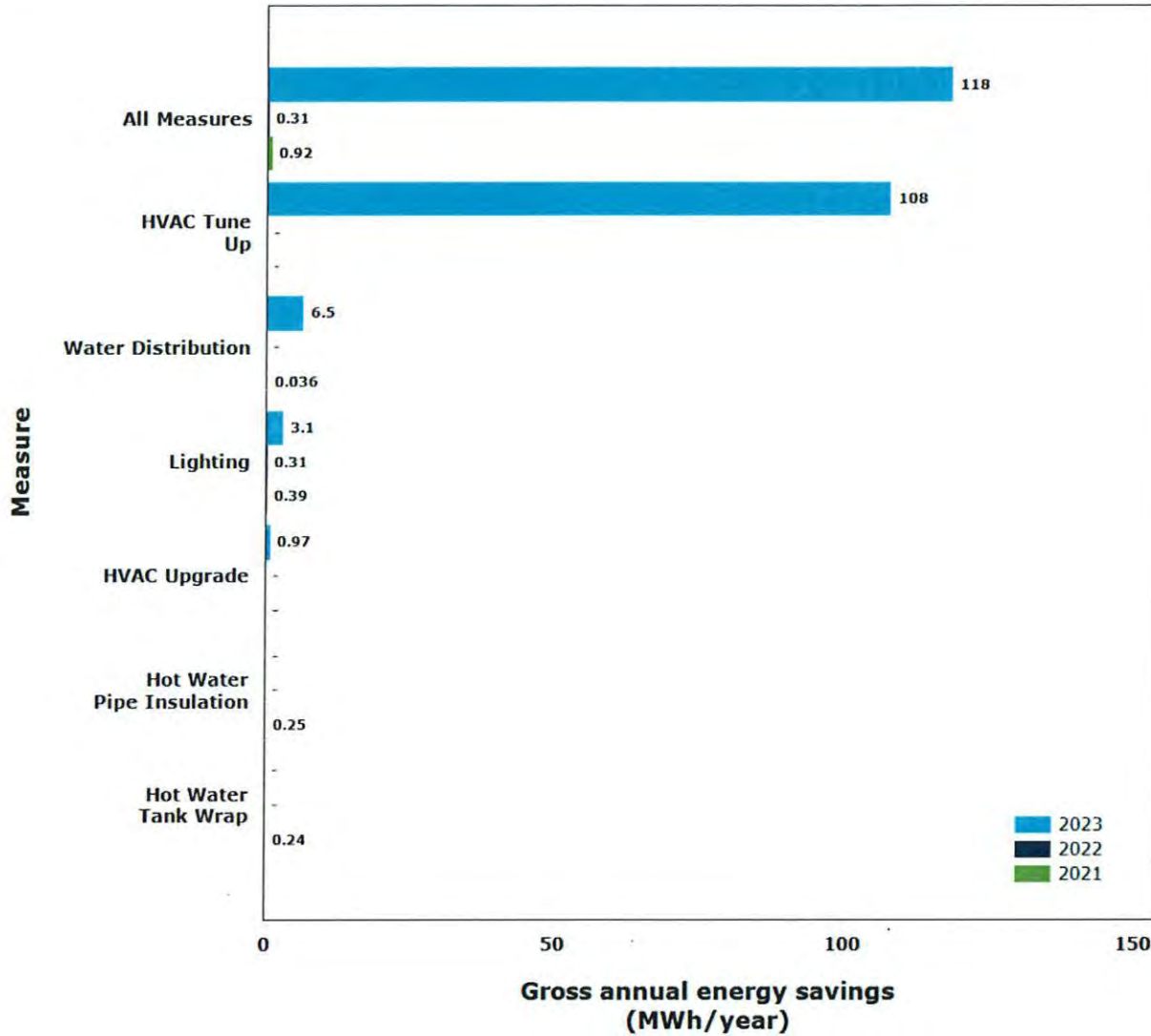
**Figure 2-36. Residential Manufactured Housing Program participation by measure and year**



<sup>51</sup> Note that the participant counts in Figure 2-36 and Figure 2-37 are the number of new unique customers in the “All Measures” category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-24), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-37. Virginia Residential Manufactured Housing Program gross annual energy savings (MWh/year) by measure and year





## 2.9 Residential Multifamily – Virginia

### 2.9.1 Program description

The Residential Multifamily Program is available in Virginia and provides property owners and managers with on-site energy assessments of both common areas and tenant units. Following the assessment, participants receive a report detailing energy-saving improvements for individual units and common areas of the building.

The program has both residential and non-residential components. The residential component refers to the energy efficient measures installed in residential units. The non-residential component of the program covers energy-efficient measures installed in common areas, or on behalf of non-residential accounts. This section of the report discusses the residential portion of the program. The discussion of the Non-Residential Multifamily Program appears in Section 4.8.



Customers must contact a participating contractor to receive the onsite energy assessment. Customers are not considered to have fully participated in the program until a completed application form is processed and a rebate is issued. This process can take several months, as customers have 45 days to submit their rebate application, and Dominion Energy has 90 days to process it. Table 2-25 details the energy efficient measures that are eligible for the residential component of the program.

**Table 2-25. Measures offered through Residential Multifamily Program**

| End use                   | Measure   |
|---------------------------|---|
| <b>Domestic Hot Water</b> | Water heater pipe insulation                          |
|                           | Water heater temperature turndown                     |
|                           | Fixed showerhead up to 1.5 GPM                        |
|                           | Handheld showerhead up to 1.5 GPM                     |
|                           | Kitchen swivel aerator up to 1.5 GPM                  |
|                           | Bathroom aerator up to 1.5 GPM                        |
| <b>Lighting</b>           | Decorative LED lamps                                  |
|                           | LED globe lamps                                       |
|                           | LED downlight lamps                                   |
| <b>Refrigeration</b>      | Refrigerator coil brush                               |
|                           | Refrigerator thermometer                              |
| <b>HVAC</b>               | Tune-Up on heat pump system and/or central AC         |
|                           | Packaged terminal heat pump and/or central AC upgrade |
|                           | Smart thermostat                                      |
|                           | Air sealing   |
|                           | Duct sealing  |
| <b>Building Envelope</b>  | Attic insulation                                      |
|                           | Wall insulation                                       |





| End use                | Measure           |
|------------------------|-------------------|
| ENERGY STAR Appliances | Refrigerator      |
|                        | Room/Wall AC unit |
|                        | Clothes washer    |
|                        | Clothes dryer     |

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched on January 15, 2021.<sup>52</sup>

### 2.9.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-26 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-26. Residential Multifamily Program planning assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 90%                   |
| Measure life (years)   | 10                    |
| Gross average annual savings (kWh/year) per participant                    | 949                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.35                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.11                  |
| Net average annual energy savings (kWh/year) per participant               | 886                   |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.32                  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.10                  |
| Average rebate (\$US) per participant                                      | \$10                  |

### 2.9.3 Assessment of program progress toward plan

The next subsection describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.9.3.1 Key Virginia program data

Table 2-27 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

<sup>52</sup> [Residential Multifamily Program Terms and Conditions](#)



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Table 2-27. Virginia Residential Multifamily Program performance indicators (2020–2023)<sup>53</sup>

| Category                                      | Item                                  | 2021         | 2022         | 2023         | Program total (2020–2023) |
|---|---------------------------------------|--------------|--------------|--------------|---------------------------|
| <b>Operations and Management Costs (\$)</b>   | Direct Rebate                         |              |              |              |                           |
|   | Direct Implementation                 |              |              |              |                           |
|   | Direct EM&V                           |              |              |              |                           |
|   | Indirect Other (Administrative)       | \$29,521     | \$32,108     | \$52,349     | \$115,212                 |
| <b>Total Costs (\$)</b>                       | Total <sup>54</sup>                   | \$629,586    | \$768,978    | \$774,765    | \$2,202,269               |
|   | Planned                               | \$1,677,691  | \$2,269,146  | \$2,241,697  | \$6,188,535               |
|   | Variance                              | -\$1,048,105 | -\$1,500,168 | -\$1,466,932 | -\$3,986,266              |
|   | Annual % of Planned                   | 38%          | 34%          | 35%          | 36%                       |
| <b>Participants</b>                           | Total (gross)                         | 9            | 1,634        | 1,273        | 2,916                     |
|   | Planned (gross)                       | 9,000        | 14,000       | 14,000       | 37,000                    |
|   | Variance                              | -8,991       | -12,366      | -12,727      | -34,084                   |
|   | Annual % of Planned (gross)           | 0%           | 12%          | 9%           | 8%                        |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings            | 335          | 428,505      | 231,957      | 660,797                   |
|   | Realization Rate                      | 100%         | 100%         | 100%         | 100%                      |
|   | Realization Rate Adjustment           | 0            | 0            | 0            | 0                         |
|   | Adjusted Gross Savings                | 335          | 428,505      | 231,957      | 660,797                   |
|   | Net-to-Gross Ratio <sup>55</sup>      | 90%          | 90%          | 90%          | 90%                       |
|   | Net-to-Gross Adjustment               | -33          | -42,851      | -23,196      | -66,080                   |
|   | Net Adjusted Savings                  | 301          | 385,655      | 208,761      | 594,717                   |
|   | Planned Savings (net)                 | 7,976,317    | 12,407,604   | 12,407,604   | 32,791,526                |
|   | Annual % Toward Planned Savings (net) | 0%           | 3%           | 2%           | 2%                        |
|   | Avg. Savings per Participant (gross)  | 37           | 262          | 182          | 227                       |
|   | Avg. Savings per Participant (net)    | 33           | 236          | 164          | 204                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand             | 0            | 107          | 16           | 123                       |
|   | Realization Rate                      | 100%         | 100%         | 100%         | 100%                      |
|   | Realization Rate Adjustment           | 0            | 0            | 0            | 0                         |
|   | Adjusted Gross Demand                 | 0            | 106.7        | 16.4         | 123.1                     |
|   | Net-to-Gross Ratio <sup>55</sup>      | 90%          | 90%          | 90%          | 90%                       |

<sup>53</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>54</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>55</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                      | Item                                    | 2021      | 2022   | 2023   | Program total (2020–2023) |
|---|---|-----------|--------|--------|---------------------------|
|   | Net-to-Gross Adjustment                 | 0         | -11    | -2     | -12                       |
|   | Net Adjusted Demand                     | 0         | 96     | 15     | 111                       |
|   | Planned Demand (net)                    | 2,835     | 4,410  | 4,410  | 11,655                    |
|   | Annual % Toward Planned Reduction (net) | 0%        | 2.18%  | 0.33%  | 0.95%                     |
|   | Avg. Demand per Participant (gross)     | 0         | 0.07   | 0.01   | 0.04                      |
|   | Avg. Demand per Participant (net)       | 0         | 0.06   | 0.01   | 0.04                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0         | 169    | 29     | 198                       |
|   | Realization Rate                        | 100%      | 100%   | 100%   | 100%                      |
|   | Realization Rate Adjustment             | 0         | 0      | 0      | 0                         |
|   | Adjusted Gross Demand                   | 0         | 168.7  | 28.8   | 197.5                     |
|   | Net-to-Gross Ratio <sup>55</sup>        | 90%       | 90%    | 90%    | 90%                       |
|   | Net-to-Gross Adjustment                 | 0         | -17    | -3     | -20                       |
|   | Net Adjusted Demand                     | 0         | 152    | 26     | 178                       |
|   | Planned Demand (net)                    | 891       | 1,386  | 1,386  | 3,663                     |
|   | Annual % Toward Planned Reduction (net) | 0%        | 11%    | 2%     | 5%                        |
|   | Avg. Demand per Participant (gross)     | 0.01      | 0.10   | 0.02   | 0.07                      |
|   | Avg. Demand per Participant (net)       | 0         | 0.09   | 0.02   | 0.06                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (gross)        | \$3,417   | \$38   | \$40   | \$40                      |
|   | \$Admin. per kWh/year (gross)           | \$92      | \$0.15 | \$0.17 | \$0.17                    |
|   | \$Admin. per kW (gross)                 | \$820,780 | \$589  | \$936  | \$936                     |
|   | \$EM&V per Total Costs (\$)             | 13.9%     | 10.7%  | 9.7%   | 9.7%                      |
|   | \$Rebate per Participant (gross)        | \$7       | \$53   | \$59   | \$59                      |

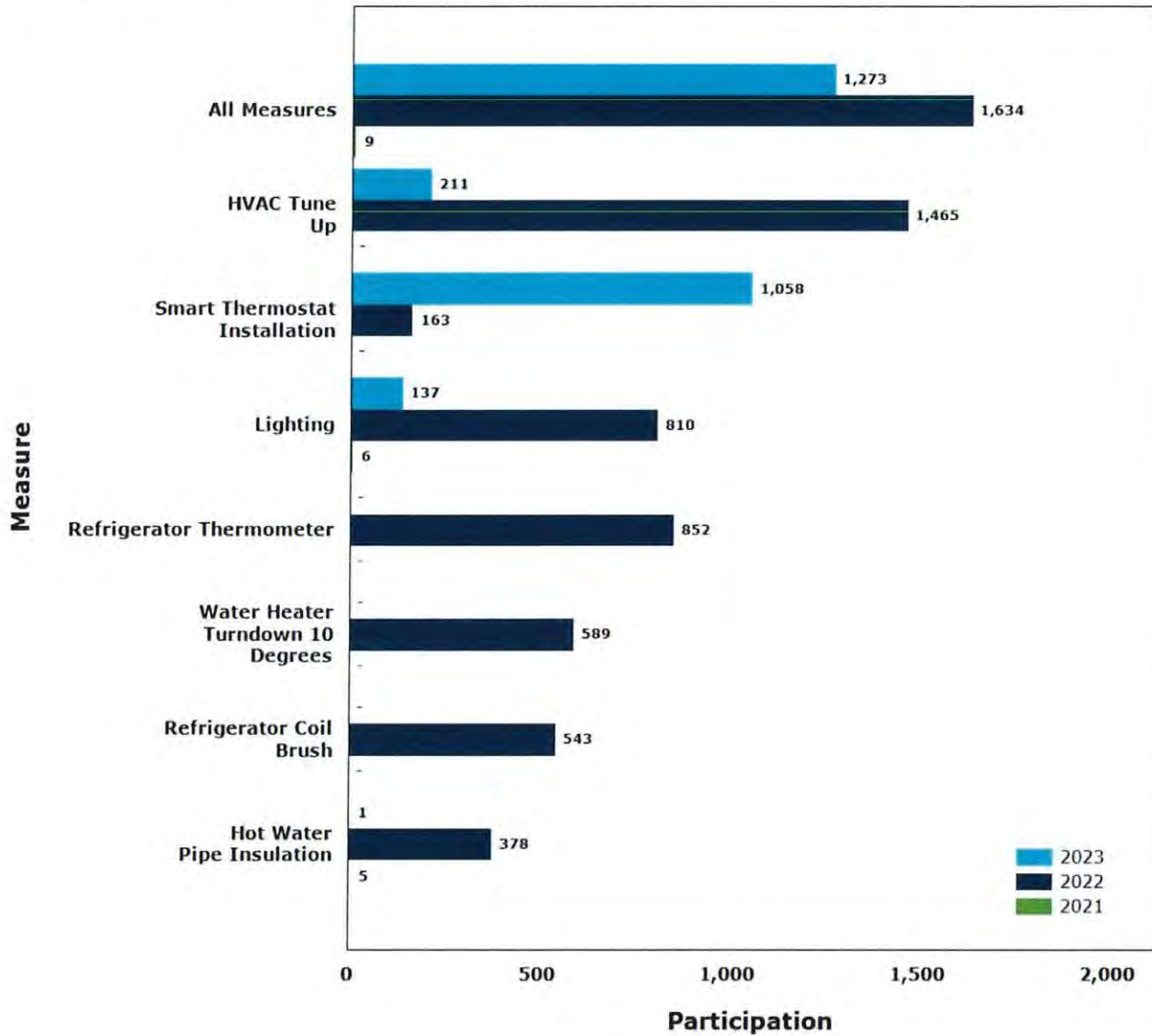


### 2.9.3.2 Additional Virginia program data

Figure 2-38 and Figure 2-39 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Smart thermostats were installed by 83% of participants. HVAC tune-ups and lighting measures were also adopted by 17% and 11% of participants, respectively.<sup>56</sup>

**Figure 2-38. Residential Multifamily Housing Program participation by measure and year**

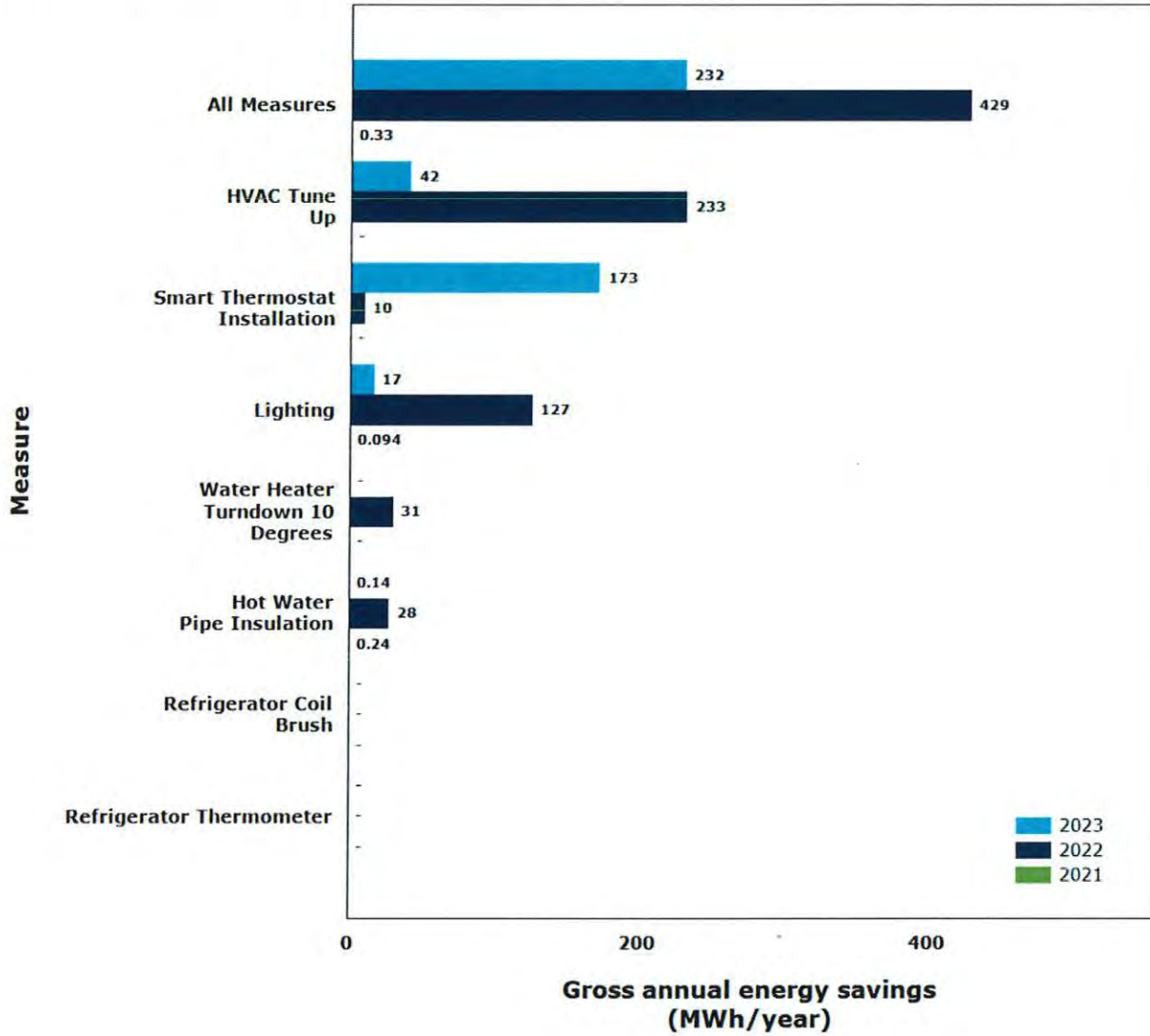


<sup>56</sup> Note that the participant counts in Figure 2-38 and Figure 2-39 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-27), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-39 shows that smart thermostats accounted for the majority (75%) of energy savings in 2023. HVAC tune-ups accounted for the second highest savings at 18%.

Figure 2-39. Virginia Residential Multifamily Housing Program gross annual energy savings (MWh/year) by measure and year





## 2.10 Residential New Construction – Virginia

### 2.10.1 Program description

The Residential New Construction Program provides incentives to home builders for the construction of new homes that are ENERGY STAR certified.<sup>57</sup> Certification requires that the whole home is energy efficient instead of individual measures. Eligible homes include single-family attached, single-family detached, and two-over-two condominiums and must be at least 15% more efficient than the state-level minimum code.



The program offers incentives that offset the costs of upgrades and Home Energy Rater services. Upgrades include improvements to building shell, HVAC performance, lighting, appliances, and domestic hot water.

The Virginia SCC approved this program, as part of the DSM Phase VIII programs, on July 30, 2020, (PUR-2019-00201) for a five-year period of January 1, 2021, through December 31, 2025. The program officially launched in Virginia on January 15, 2021.

There was a significant increase in participation and energy savings in 2023. The program participation climbed to 2,925 participants with a total savings of 7,329 MWh/yr. This is a 14% increase in participation and 43% in energy savings compared to 2022. This improvement was despite vacillations in the housing market, including significant increases in mortgage interest rates. The savings per participant increased in 2023. This was largely driven by domestic heat pump water heaters and high-efficiency HVAC equipment.

### 2.10.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-28 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-28. Residential New Construction program planning assumptions**

| Assumption   | Description          |
|--|----------------------|
| Target market  | Residential builders |
| NTG factor   | 87%                  |
| Measure life (years)   | 25                   |
| Gross average annual energy savings (kWh/year) per participant             | 1,603                |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.89                 |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.27                 |
| Net average annual energy savings (kWh/year) per participant               | 1,394                |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.77                 |

<sup>57</sup> [Dominion Energy Residential New Construction Program website](#); [ENERGY STAR Certified Homes website](#)



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| Assumption   | Description |
|--|-------------|
| Net Average winter coincident peak demand reduction (kW) per participant | 0.23        |
| Average rebate (\$US) per participant                                    | \$859       |

### 2.10.3 Assessment of program progress toward plan

The next subsection describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.10.3.1 Key Virginia program data

Table 2-29 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-29. Virginia Residential New Construction Program performance indicators (2020–2023)<sup>58</sup>

| Category                             | Item                            | 2021         | 2022         | 2023         | Program total (2020–2023) |
|--------------------------------------|---------------------------------|--------------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |              |              |              |                           |
|                                      | Direct Implementation           |              |              |              |                           |
|                                      | Direct EM&V                     |              |              |              |                           |
|                                      | Indirect Other (Administrative) | \$56,428     | \$112,259    | \$211,852    | \$381,822                 |
| Total Costs (\$)                     | Total <sup>59</sup>             | \$1,203,424  | \$2,688,603  | \$3,135,419  | \$7,057,530               |
|                                      | Planned                         | \$4,218,145  | \$4,560,431  | \$4,831,000  | \$13,609,576              |
|                                      | Variance                        | -\$3,014,721 | -\$1,871,828 | -\$1,695,581 | -\$6,552,046              |
|                                      | Annual % of Planned             | 29%          | 59%          | 65%          | 52%                       |
| Participants                         | Total (Gross)                   | 1,018        | 2,560        | 2,925        | 6,503                     |
|                                      | Planned (Gross)                 | 4,250        | 4,548        | 4,866        | 13,664                    |
|                                      | Variance                        | -3,232       | -1,988       | -1,941       | -7,161                    |
|                                      | Annual % of Planned (Gross)     | 24%          | 56%          | 60%          | 48%                       |
| Installed Energy Savings (kWh/year)  | Total Gross Deemed Savings      | 1,971,437    | 5,129,363    | 7,329,239    | 14,430,039                |
|                                      | Realization Rate                | 100%         | 100%         | 100%         | 100%                      |
|                                      | Realization Rate Adjustment     | 0            | 0            | 0            | 0                         |
|                                      | Adjusted Gross Savings          | 1,971,437    | 5,129,363    | 7,329,239    | 14,430,039                |
|                                      | Net-to-Gross Ratio              | 87%          | 87%          | 87%          | 87%                       |
|                                      | Net-to-Gross Adjustment         | -256,287     | -666,817     | -952,801     | -1,875,905                |
|                                      | Net Adjusted Savings            | 1,715,150    | 4,462,546    | 6,376,438    | 12,554,134                |

<sup>58</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>59</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company’s margins.



| Category                                      | Item  | 2021      | 2022      | 2023      | Program total (2020–2023) |
|---|---|-----------|-----------|-----------|---------------------------|
|   | Planned Savings (Net)                       | 5,926,305 | 6,341,844 | 6,785,271 | 19,053,420                |
|   | Annual Percent Toward Planned Savings (Net) | 29%       | 70%       | 93%       | 66%                       |
|   | Avg. Savings per Participant (Gross)        | 1,937     | 2,004     | 2,506     | 2,219                     |
|   | Avg. Savings per Participant (Net)          | 1,685     | 1,743     | 2,180     | 1,931                     |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Demand Reduction                | 883.5     | 2,285.0   | 3,003.7   | 6,172.1                   |
|   | Realization Rate                            | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand Reduction             | 884       | 2,285     | 3,004     | 6,172                     |
|   | Net-to-Gross Ratio                          | 87%       | 87%       | 87%       | 87%                       |
|   | Net-to-Gross Adjustment                     | -114.9    | -297.0    | -390.5    | -802.4                    |
|   | Net Adjusted Demand Reduction               | 769       | 1,988     | 2,613     | 5,370                     |
|   | Planned Demand (Net)                        | 3,391     | 3,522     | 3,768     | 10,580                    |
|   | Annual % Toward Planned Demand (Net)        | 23.4%     | 56.5%     | 69.4%     | 50.6%                     |
|   | Avg. Peak Demand per Participant (Gross)    | 0.9       | 0.9       | 1.0       | 0.9                       |
|   | Avg. Demand per Participant (Net)           | 0.8       | 0.8       | 0.9       | 0.8                       |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Demand Reduction                | 342.6     | 969.7     | 1,675.3   | 2,987.7                   |
|   | Realization Rate                            | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand Reduction             | 343       | 970       | 1,675     | 2,988                     |
|   | Net-to-Gross Ratio                          | 87%       | 87%       | 87%       | 87%                       |
|   | Net-to-Gross Adjustment                     | -44.5     | -126.1    | -217.8    | -388.4                    |
|   | Net Adjusted Demand Reduction               | 298.1     | 843.7     | 1,457.5   | 2,599.3                   |
|   | Planned Demand (Net)                        | 998       | 1,068     | 1,143     | 3,210                     |
|   | Annual % Toward Planned Demand (Net)        | 30%       | 79%       | 128%      | 81%                       |
|   | Avg. Peak Demand per Participant (Gross)    | 0.3       | 0.4       | 0.6       | 0.5                       |
|   | Avg. Demand per Participant (Net)           | 0.3       | 0.3       | 0.5       | 0.4                       |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)            | \$57      | \$48      | \$59      | \$59                      |
|   | \$Admin. per kWh/year (Gross)               | \$0.03    | \$0.02    | \$0.03    | \$0.03                    |
|   | \$Admin. per kW (Gross)                     | \$65      | \$54      | \$62      | \$62                      |
|   | \$EM&V per Total Costs (\$)                 | 9.7%      | 7.9%      | 6.9%      | 6.9%                      |
|   | \$Rebate per Participant (Gross)            | \$838     | \$837     | \$840     | \$840                     |

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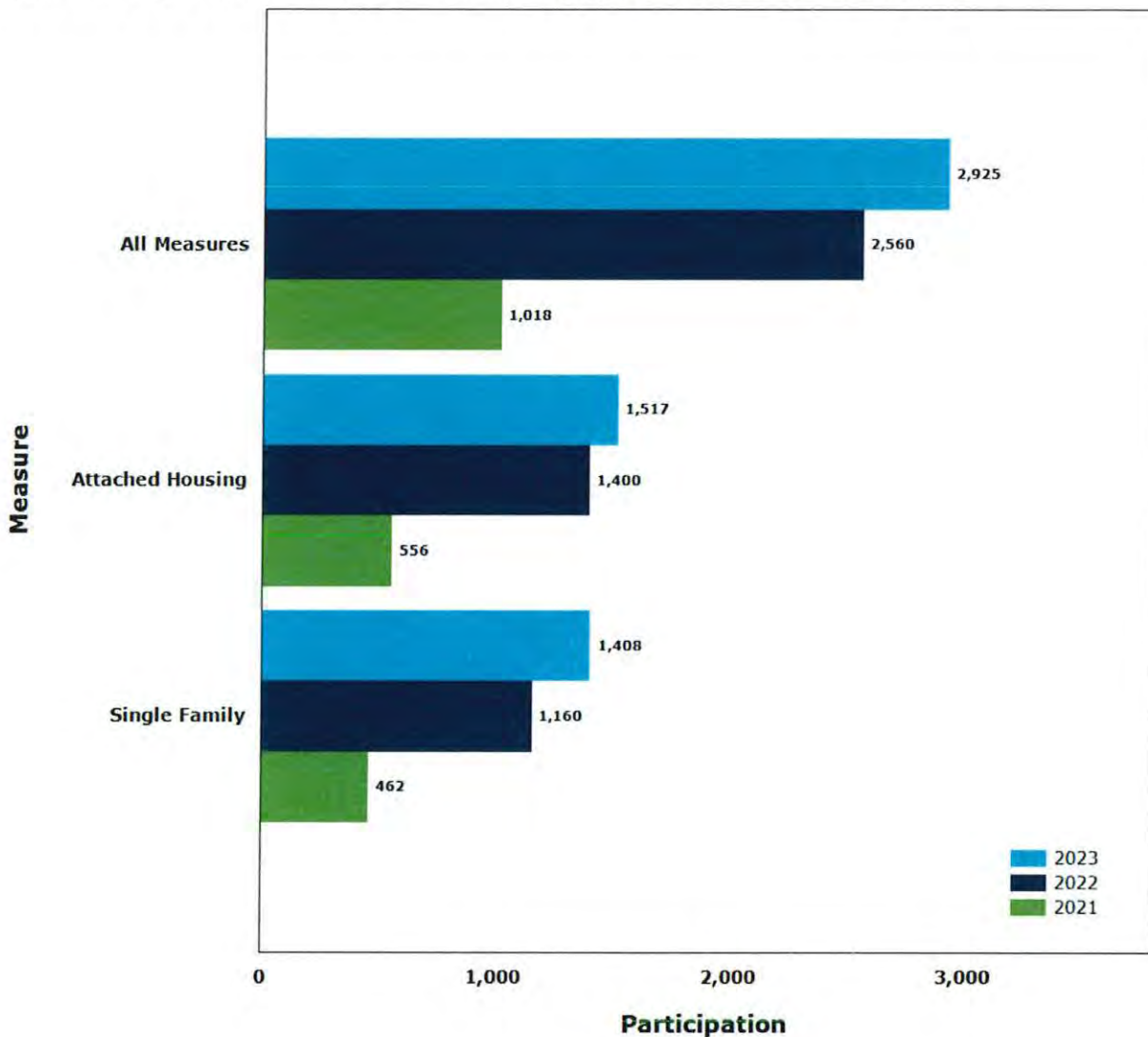


**2.10.3.2 Additional Virginia program data**

Figure 2-40 and Figure 2-41 show participation and gross annual energy savings by measure and year in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

In 2023, the program participation, savings per participant and overall savings continued to increase compared to prior years and the program saw a 14% increase in participation between 2022 and 2023. The single family detached participation increased more than townhouses and duplexes.<sup>60</sup>

**Figure 2-40. Virginia Residential New Construction Program participation by measure and year**



<sup>60</sup> Note that the participant counts in Figure 2-40 and Figure 2-41 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-29), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-41. Virginia Residential New Construction Program gross annual energy savings (MWh/year) by measure and year

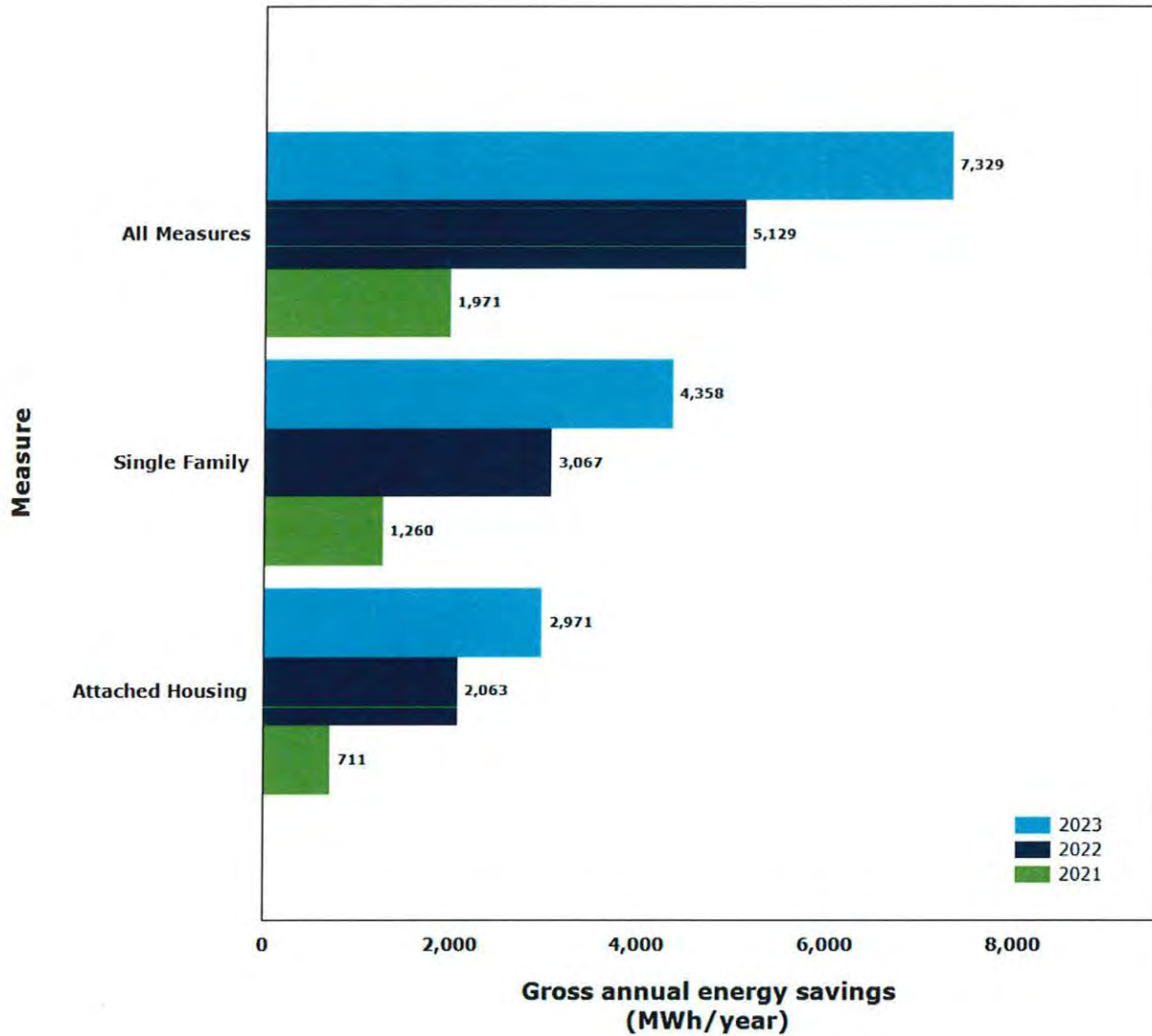




Figure 2-42 and Figure 2-43 show participation and gross annual energy savings by building type and year. The 2023 program year saw a 43% increase in savings over 2022. This increase is attributed to the increase in participation and an increase in savings per participant. Savings per participation increased across all building types.

Figure 2-42. Virginia Residential New Construction Program participation by building type and year

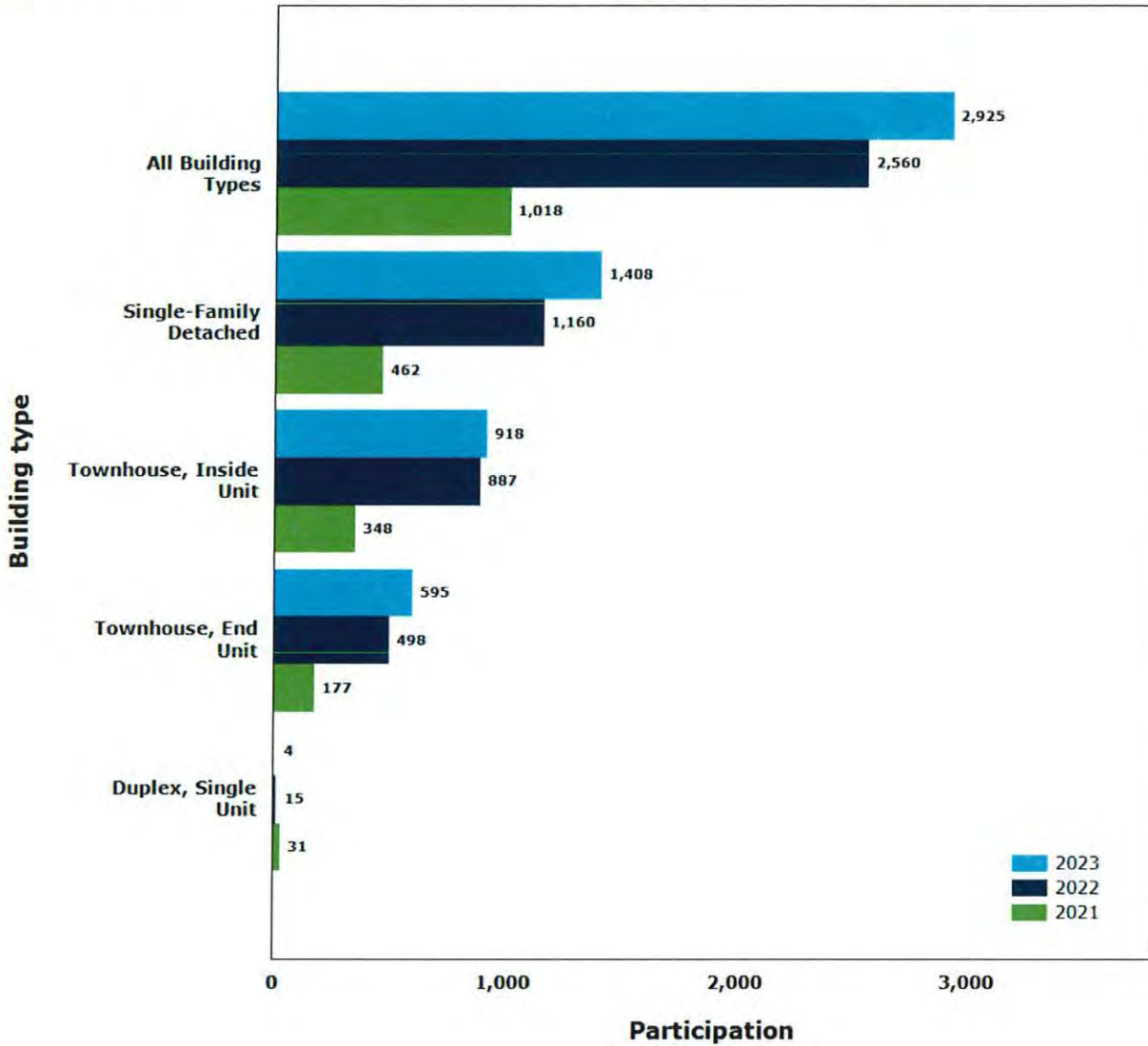




Figure 2-43. Virginia Residential New Construction Program gross annual energy savings (MWh/year) by building type and year

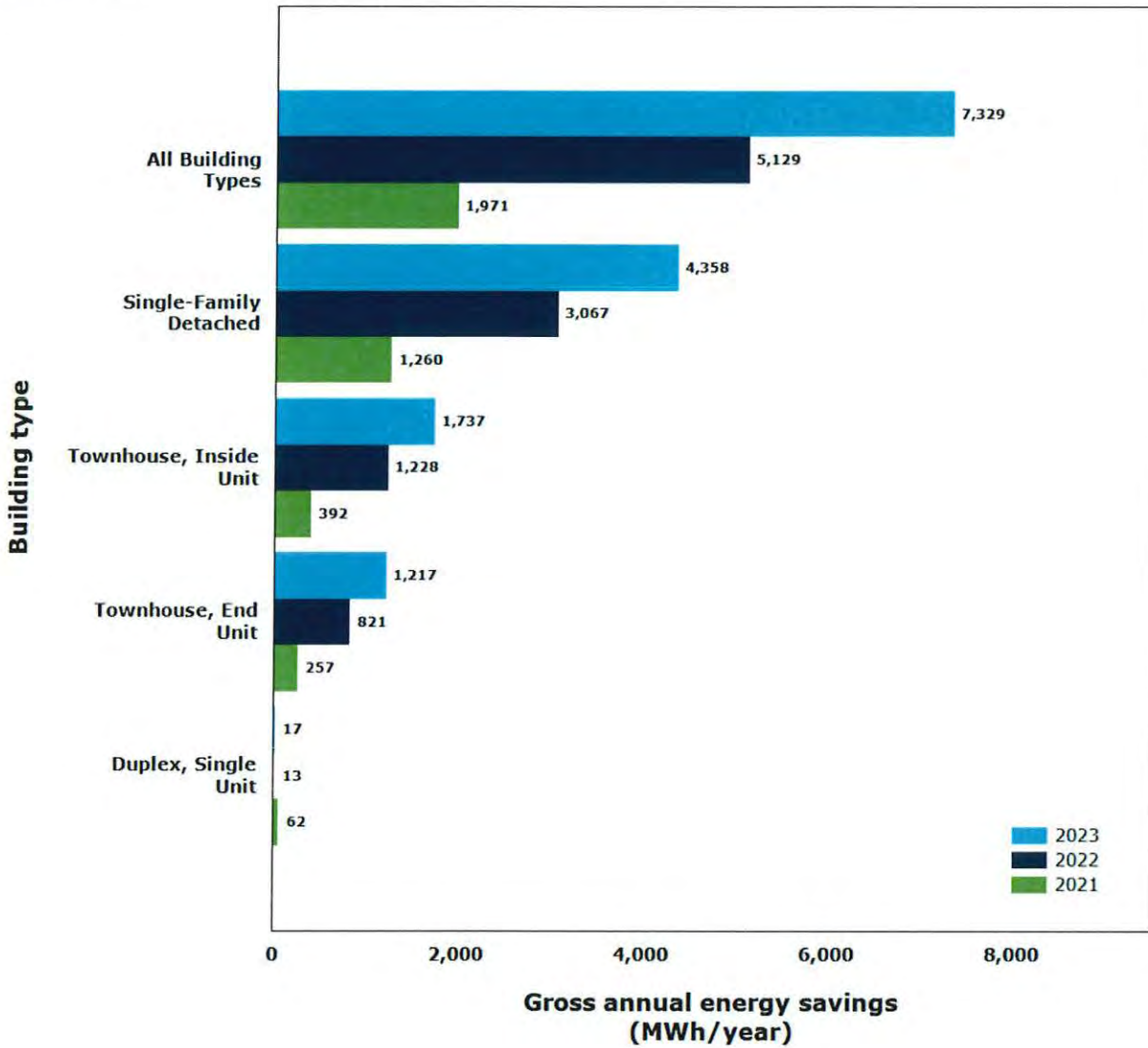




Figure 2-44 shows Virginia gross annual energy savings per participant by end use and year. Figure 2-45 shows the total energy savings for each end-use. The program level savings increased across all end-uses. The increased savings is due to both an increase in participants and the savings per participant. Since savings are achieved at the whole-building level, they are not disaggregated by individual equipment or lighting. Therefore, end-use level savings offer a good way to see where savings are achieved. For the Residential New Construction Program, space heating surpassed lighting and appliances savings in 2023. This is due to higher efficiency heat pump HVAC systems and building shell measures. The lighting and appliance savings remained about the same as 2022.

In 2021 and 2022, the domestic hot water end use had negative average savings. In 2023 the savings was 37 kWh/participant. While some homes have domestic hot water savings, many homes installed hot water heaters that are less efficient than the program's assumed baseline efficiency, although still higher than federal code. The positive savings reflects that's more domestic heat pump water heaters are being installed in the program.

**Figure 2-44. Virginia Residential New Construction Program gross annual energy savings per participant (kWh/year-participant) by end use and year**

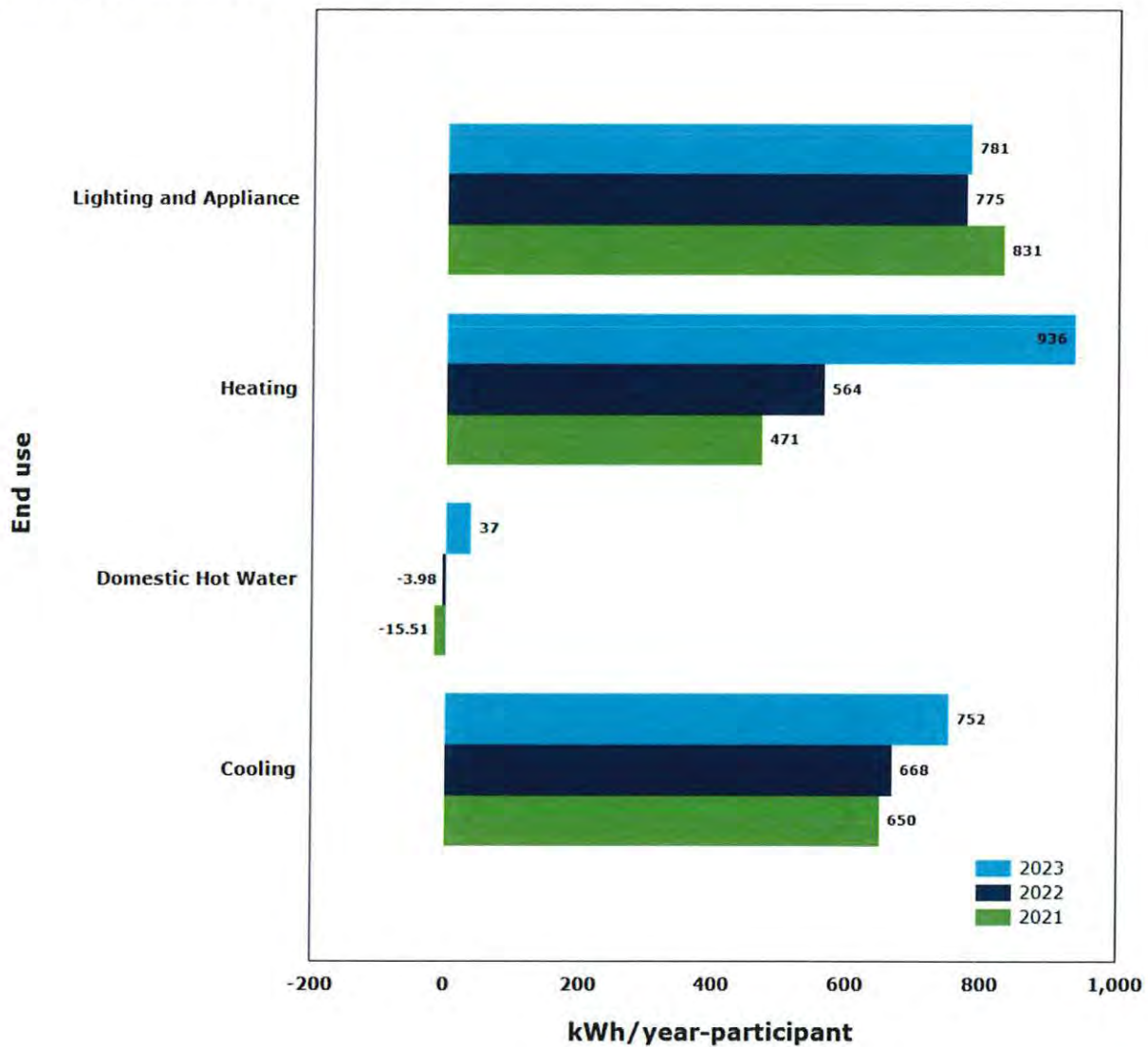
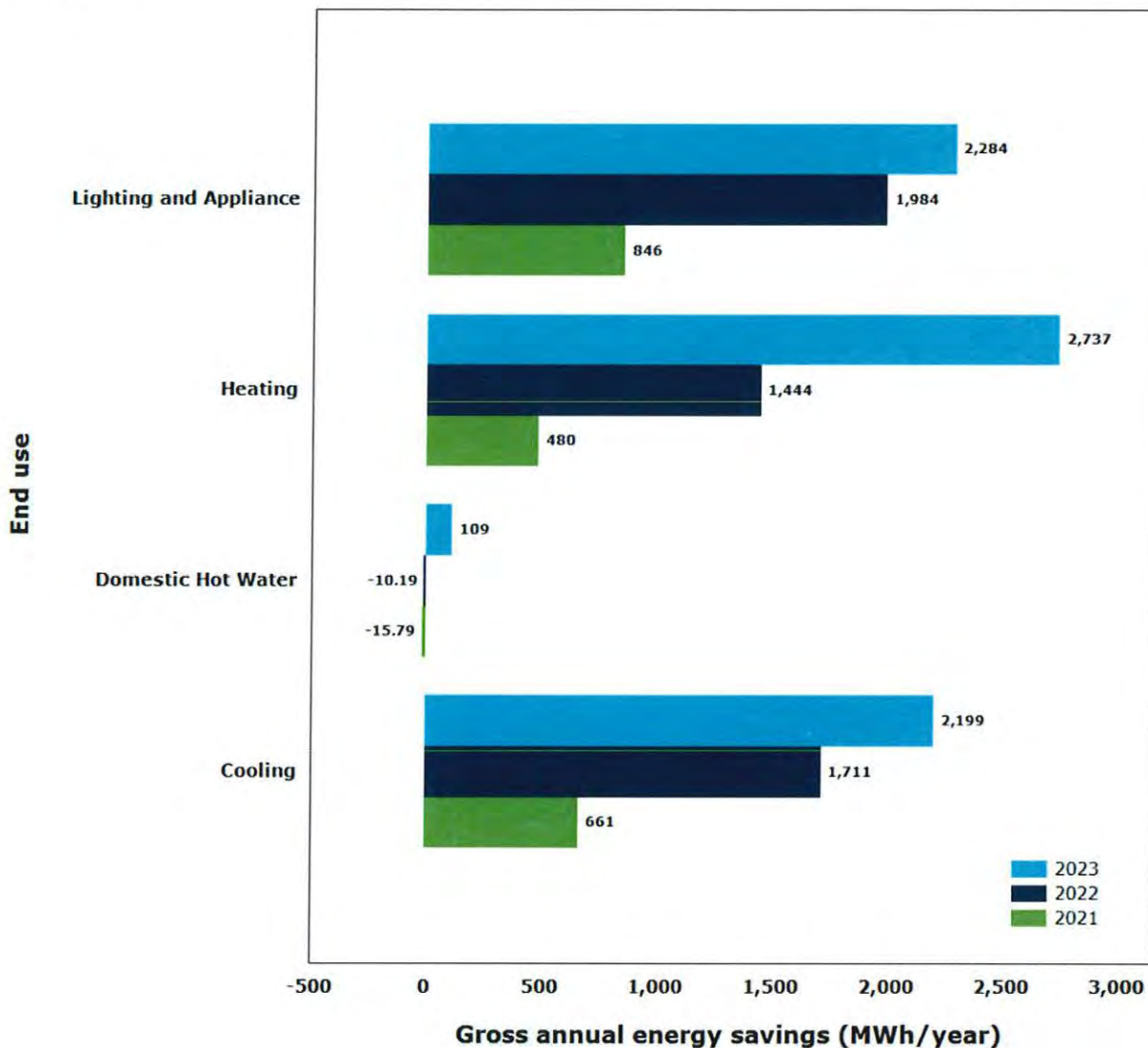




Figure 2-45. Virginia Residential New Construction Program gross annual energy savings (MWh/year) by end use and year



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## 2.11 Residential Thermostat Purchase and WeatherSmart – Virginia and North Carolina

### 2.11.1 Program description

The Residential Smart Thermostat Purchase and WeatherSmart Program<sup>SM</sup> has two components. The Residential Smart Thermostat Purchase component provides an incentive for purchasing and installing up to two ENERGY STAR<sup>®</sup> certified smart thermostats. An additional incentive is available for participation in “WeatherSmart,” a thermostat optimization program. The WeatherSmart component provides an annual incentive for customers who allow remote optimization of their



smart thermostat temperature setpoints and runtimes.

WeatherSmart customers also receive a monthly report with personalized energy-saving tips. Customers can participate in one of the two components, or both if eligible.

To participate in either component of this program, the customer must be a Dominion Energy Services residential customer residing in a single-family detached, attached, or manufactured home. The smart thermostat purchase component is limited to heat pump systems. Customers with either a heat pump or a central air-conditioner are eligible to participate in WeatherSmart.

The SCC approved this program as part of the DSM Phase VII programs on May 2, 2019 (Case No. PUR-2018-00168). Following additional review, the program was refiled in Virginia at the end of 2019 and re-approved on July 30, 2020, as part of the DSM Phase VIII programs (Case No. PUR-2019-00201). As a result, the planned implementation schedule was delayed a year.<sup>61</sup> The program officially launched on April 15, 2021. It was approved by the NCUC in North Carolina on February 9, 2019 (Docket No. E-22, SUB 594).<sup>62</sup>

### 2.11.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-30 and Table 2-31 outline Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Residential Smart Thermostat Purchase Program is the count of rebated thermostats. The definition of participants for the Residential Thermostat WeatherSmart Program is the count of unique account numbers.

**Table 2-30. Residential Smart Thermostat Purchase Program planning assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 80%                   |
| Measure life (years)   | 10                    |
| Gross average annual energy savings (kWh/year) per participant             | 538                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.05                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.13                  |

<sup>61</sup> [Virginia Residential Smart Thermostat Purchase Program Terms and Conditions.](#)

<sup>62</sup> [North Carolina Residential Smart Thermostat Purchase Program terms and Conditions.](#)



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| Assumption   | Value   |
|--|---------|
| Net average annual energy savings (kWh/year) per participant             | 430     |
| Net average summer coincident peak demand reduction (kW) per participant | 0.04    |
| Net average winter coincident peak demand reduction (kW) per participant | 0.10    |
| Average rebate (\$US) per participant                                    | \$50.00 |

Table 2-31. Residential Thermostat WeatherSmart Program planning assumptions

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 95%                   |
| Measure life (years)   | 1                     |
| Gross average annual energy savings (kWh/year) per participant             | 303                   |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.05                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.05                  |
| Net average annual energy savings (kWh/year) per participant               | 242                   |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.05                  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.05                  |
| Average annual rebate (\$US) per participant                               | \$10                  |

### 2.11.3 Assessment of program progress toward plan

The next subsections describe the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.11.3.1 Key Virginia program data

Table 2-32 provides performance indicator data from 2020 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. To maintain the portrait layout and improve readability, the tables include annual performance indicators for the most recent three years only. Therefore, program totals in the far-right column will not equal the sum of the three annual columns for programs that have been operating for more than three years. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-32. Virginia Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2020–2023)<sup>63</sup>

| Category                             | Item                            | 2021     | 2022     | 2023     | Program Total (2020–2023) |
|--------------------------------------|---------------------------------|----------|----------|----------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |          |          |          |                           |
|                                      | Direct Implementation           |          |          |          |                           |
|                                      | Direct EM&V                     |          |          |          |                           |
|                                      | Indirect Other (Administrative) | \$47,014 | \$47,874 | \$44,609 | \$143,750                 |

<sup>63</sup> The sum of the individual annual values may differ from the total value due to rounding.





| Category  | Item  | 2021        | 2022        | 2023        | Program Total (2020–2023) |
|---|---|-------------|-------------|-------------|---------------------------|
| <b>Total Costs (\$)</b>                                 | Total <sup>64</sup>                         | \$1,002,656 | \$1,146,575 | \$660,213   | \$2,909,116               |
|   | Planned                                     | \$1,176,343 | \$1,191,322 | \$1,230,064 | \$3,597,729               |
|   | Variance                                    | -\$173,686  | -\$44,747   | -\$569,850  | -\$688,613                |
|   | Annual % of Planned                         | 85%         | 96%         | 54%         | 81%                       |
| <b>Participants<sup>65</sup></b>                        | Total (Gross)                               | 5,321       | 7,638       | 6,377       | 19,336                    |
|   | Planned (Gross)                             | 4,791       | 9,233       | 8,487       | 22,511                    |
|   | Variance                                    | 530         | -1,595      | -2,110      | -3,175                    |
|   | Annual % of Planned (Gross)                 | 111%        | 83%         | 75%         | 86%                       |
| <b>Installed Energy Savings (kWh/year)<sup>66</sup></b> | Total Gross Deemed Savings                  | 1,436,716   | 1,926,560   | 1,381,802   | 4,745,079                 |
|   | Realization Rate                            | 100%        | 100%        | 100%        | 100%                      |
|   | Realization Rate Adjustment                 | 0           | 0           | 0           | 0                         |
|   | Adjusted Gross Savings                      | 1,436,716   | 1,926,560   | 1,381,802   | 4,745,079                 |
|   | Net-to-Gross Ratio <sup>67</sup>            | 82%         | 83%         | 86%         | 83%                       |
|   | Net-to-Gross Adjustment                     | -252,770    | -337,123    | -200,208    | -790,101                  |
|   | Net Adjusted Savings                        | 1,183,947   | 1,589,437   | 1,181,594   | 3,954,978                 |
|   | Planned Savings (Net)                       | 1,984,825   | 3,816,282   | 3,557,933   | 9,359,040                 |
|   | Annual Percent Toward Planned Savings (Net) | 60%         | 42%         | 33%         | 42%                       |
|   | Avg. Savings per Participant (Gross)        | 270         | 252         | 217         | 245                       |
|   | Avg. Savings per Participant (Net)          | 223         | 208         | 185         | 205                       |
| <b>Installed Summer Demand Reduction (kW)</b>           | Total Gross Demand Reduction <sup>68</sup>  | 225         | 305         | 556         | 1,086                     |
|   | Realization Rate                            | 100%        | 100%        | 100%        | 100%                      |
|   | Realization Rate Adjustment                 | 0           | 0           | 0           | 0                         |
|   | Adjusted Gross Demand Reduction             | 225         | 305         | 556         | 1,086                     |
|   | Net-to-Gross Ratio <sup>67</sup>            | 95%         | 95%         | 95%         | 95%                       |
|   | Net-to-Gross Adjustment                     | -11         | -15         | -28         | -54                       |
|   | Net Adjusted Demand Reduction               | 213.6       | 290.0       | 528.3       | 1,032.0                   |

<sup>64</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>65</sup> The method used to count participants in 2021 was changed in 2022. In 2021, participants were quantified at the account level, in 2022 participants were quantified at the measure, or thermostat level. Changes in total participants was also adjusted to account for the sub-group of enrolled customers, who unenrolled, and re-enrolled.

<sup>66</sup> The table reflects metrics for both the Residential Smart Thermostat Purchase and WeatherSmart components. For the Purchase component, 2021 savings were calculated at the thermostat level, rather than at the account (or household level), which overstated 2021 savings. As a result, in this June 15, 2023, report, the 2021 gross installed energy savings (kWh/year) for Purchase was adjusted.

<sup>67</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of all participants who responded (from program inception to the end of this reporting period), the implementation vendor has calculated that 81% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D for methodology

<sup>68</sup> In 2022 DNV corrected the summer demand reduction calculations for the WeatherSmart component of this program. These changes resulted in an increase in summer demand reduction.



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| Category                               | Item                                       | 2021   | 2022   | 2023   | Program Total (2020–2023) |
|--|--|--------|--------|--------|---------------------------|
|  | Planned Demand (Net)                       | 226    | 438    | 397    | 1,060                     |
|  | Annual % Toward Planned Demand (Net)       | 94%    | 66%    | 133%   | 97%                       |
|  | Avg. Peak Demand per Participant (Gross)   | 0.04   | 0.04   | 0.09   | 0.06                      |
|  | Avg. Demand per Participant (Net)          | 0.04   | 0.04   | 0.08   | 0.05                      |
| Installed Winter Demand Reduction (kW) | Total Gross Demand Reduction <sup>69</sup> | 42     | 60     | 76     | 178                       |
|  | Realization Rate                           | 100%   | 100%   | 100%   | 100%                      |
|  | Realization Rate Adjustment                | 0      | 0      | 0      | 0                         |
|  | Adjusted Gross Demand Reduction            | 41     | 60     | 76     | 178                       |
|  | Net-to-Gross Ratio <sup>67</sup>           | 95%    | 95%    | 95%    | 95%                       |
|  | Net-to-Gross Adjustment                    | -2     | -3     | -4     | -9                        |
|  | Net Adjusted Demand Reduction              | 40     | 58     | 72     | 170                       |
|  | Planned Demand (Net)                       | 345    | 660    | 635    | 1,639                     |
|  | Annual % Toward Planned Demand (Net)       | 12%    | 9%     | 11%    | 10%                       |
|  | Avg. Peak Demand per Participant (Gross)   | 0.01   | 0.01   | 0.01   | 0.01                      |
|  | Avg. Demand per Participant (Net)          | 0.01   | 0.01   | 0.01   | 0.01                      |
| Cumulative Annual Program Performance  | \$Admin. per Participant (Gross)           | \$10   | \$8    | \$7    | \$7                       |
|  | \$Admin. per kWh/year (Gross)              | \$0.04 | \$0.03 | \$0.03 | \$0.03                    |
|  | \$Admin. per kW (Gross)                    | \$228  | \$187  | \$132  | \$132                     |
|  | \$EM&V per Total Costs (\$)                | 15.3%  | 13.1%  | 13.9%  | 13.9%                     |
|  | \$Rebate per Participant (Gross)           | \$72   | \$68   | \$51   | \$51                      |

2.11.3.2 Key North Carolina program data

Table 2-33 provides performance indicator data from 2021 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-33. North Carolina Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2021–2023)<sup>63</sup>

| Category                             | Item                            | 2021            | 2022            | 2023            | Program Total (2021–2023) |
|--------------------------------------|---------------------------------|-----------------|-----------------|-----------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |                 |                 |                 |                           |
|                                      | Direct Implementation           |                 |                 |                 |                           |
|                                      | Direct EM&V                     |                 |                 |                 |                           |
|                                      | Indirect Other (Administrative) | \$900           | \$2,125         | \$2,108         | \$5,133                   |
| <b>Total Costs (\$)</b>              | <b>Total<sup>64</sup></b>       | <b>\$19,202</b> | <b>\$50,894</b> | <b>\$31,196</b> | <b>\$101,292</b>          |

<sup>69</sup> In 2022 DNV corrected the winter demand reduction calculations for the WeatherSmart component of this program. These changes resulted in an increase in winter demand reduction.



| Category  | Item  | 2021      | 2022      | 2023      | Program Total (2021-2023) |
|---|---|-----------|-----------|-----------|---------------------------|
|   | Planned                                     | \$73,197  | \$76,014  | \$75,566  | \$224,776                 |
|   | Variance                                    | -\$53,995 | -\$25,119 | -\$44,370 | -\$123,484                |
|   | Annual % of Planned                         | 26%       | 67%       | 41%       | 45%                       |
| <b>Participants<sup>65</sup></b>                        | Total (Gross)                               | 71        | 265       | 230       | 566                       |
|   | Planned (Gross)                             | 306       | 589       | 542       | 1,437                     |
|   | Variance                                    | -235      | -324      | -312      | -871                      |
|   | Annual % of Planned (Gross)                 | 23%       | 45%       | 42%       | 39%                       |
| <b>Installed Energy Savings (kWh/year)<sup>66</sup></b> | Total Gross Deemed Savings                  | 19,412    | 80,592    | 69,185    | 169,189                   |
|   | Realization Rate                            | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Savings                      | 19,412    | 80,592    | 69,185    | 169,189                   |
|   | Net-to-Gross Ratio <sup>67</sup>            | 85%       | 83%       | 87%       | 85%                       |
|   | Net-to-Gross Adjustment                     | -2,851    | -13,934   | -9,181    | -25,966                   |
|   | Net Adjusted Savings                        | 16,560    | 66,658    | 60,004    | 143,223                   |
|   | Planned Savings (Net)                       | 126,775   | 243,449   | 227,226   | 597,450                   |
|   | Annual Percent Toward Planned Savings (Net) | 13%       | 27%       | 26%       | 24%                       |
|   | Avg. Savings per Participant (Gross)        | 273       | 304       | 301       | 299                       |
|   | Avg. Savings per Participant (Net)          | 233       | 252       | 261       | 253                       |
| <b>Installed Summer Demand Reduction (kW)</b>           | Total Gross Demand Reduction <sup>68</sup>  | 9         | 40        | 40        | 65                        |
|   | Realization Rate                            | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand Reduction             | 8.8       | 16.4      | 39.5      | 64.6                      |
|   | Net-to-Gross Ratio <sup>67</sup>            | 95%       | 95%       | 95%       | 95%                       |
|   | Net-to-Gross Adjustment                     | -0.4      | -0.8      | -2.0      | -3.2                      |
|   | Net Adjusted Demand Reduction               | 8         | 16        | 38        | 61                        |
|   | Planned Demand (Net)                        | 15        | 28        | 25        | 68                        |
|   | Annual % Toward Planned Demand (Net)        | 56%       | 56%       | 148%      | 91%                       |
|   | Avg. Peak Demand per Participant (Gross)    | 0.1       | 0.06      | 0.2       | 0.1                       |
|   | Avg. Demand per Participant (Net)           | 0.1       | 0.06      | 0.2       | 0.1                       |
| <b>Installed Winter Demand Reduction (kW)</b>           | Total Gross Demand Reduction <sup>69</sup>  | 0.7       | 2.1       | 3.2       | 6.0                       |
|   | Realization Rate                            | 100%      | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment                 | 0         | 0         | 0         | 0                         |
|   | Adjusted Gross Demand Reduction             | 0.7       | 2.1       | 3.2       | 6.0                       |
|   | Net-to-Gross Ratio <sup>67</sup>            | 95%       | 95%       | 95%       | 95%                       |

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| Category                                     | Item                                     | 2021   | 2022   | 2023   | Program Total (2021-2023) |
|--|--|--------|--------|--------|---------------------------|
|  | Net-to-Gross Adjustment                  | 0      | -0.1   | -0.2   | -0.3                      |
|  | Net Adjusted Demand Reduction            | 0.7    | 2.0    | 3.0    | 5.7                       |
|  | Planned Demand (Net)                     | 23     | 42     | 41     | 104                       |
|  | Annual % Toward Planned Demand (Net)     | 3%     | 5%     | 7%     | 5%                        |
|  | Avg. Peak Demand per Participant (Gross) | 0.01   | 0.01   | 0.01   | 0.01                      |
|  | Avg. Demand per Participant (Net)        | 0.01   | 0.01   | 0.01   | 0.01                      |
| <b>Cumulative Annual Program Performance</b> | \$Admin. per Participant (Gross)         | \$13   | \$9    | \$9    | \$9                       |
|  | \$Admin. per kWh/year (Gross)            | \$0.05 | \$0.03 | \$0.03 | \$0.03                    |
|  | \$Admin. per kW (Gross)                  | \$103  | \$120  | \$79   | \$79                      |
|  | \$EM&V per Total Costs (\$)              | 10.5%  | 14.1%  | 16.3%  | 16.3%                     |
|  | \$Rebate per Participant (Gross)         | \$61   | \$69   | \$48   | \$48                      |

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### 2.11.3.3 Additional Virginia program data

Figure 2-46 and Figure 2-47 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-46. Virginia Residential Smart Thermostat Purchase and WeatherSmart<sup>SM</sup> participation by measure and year

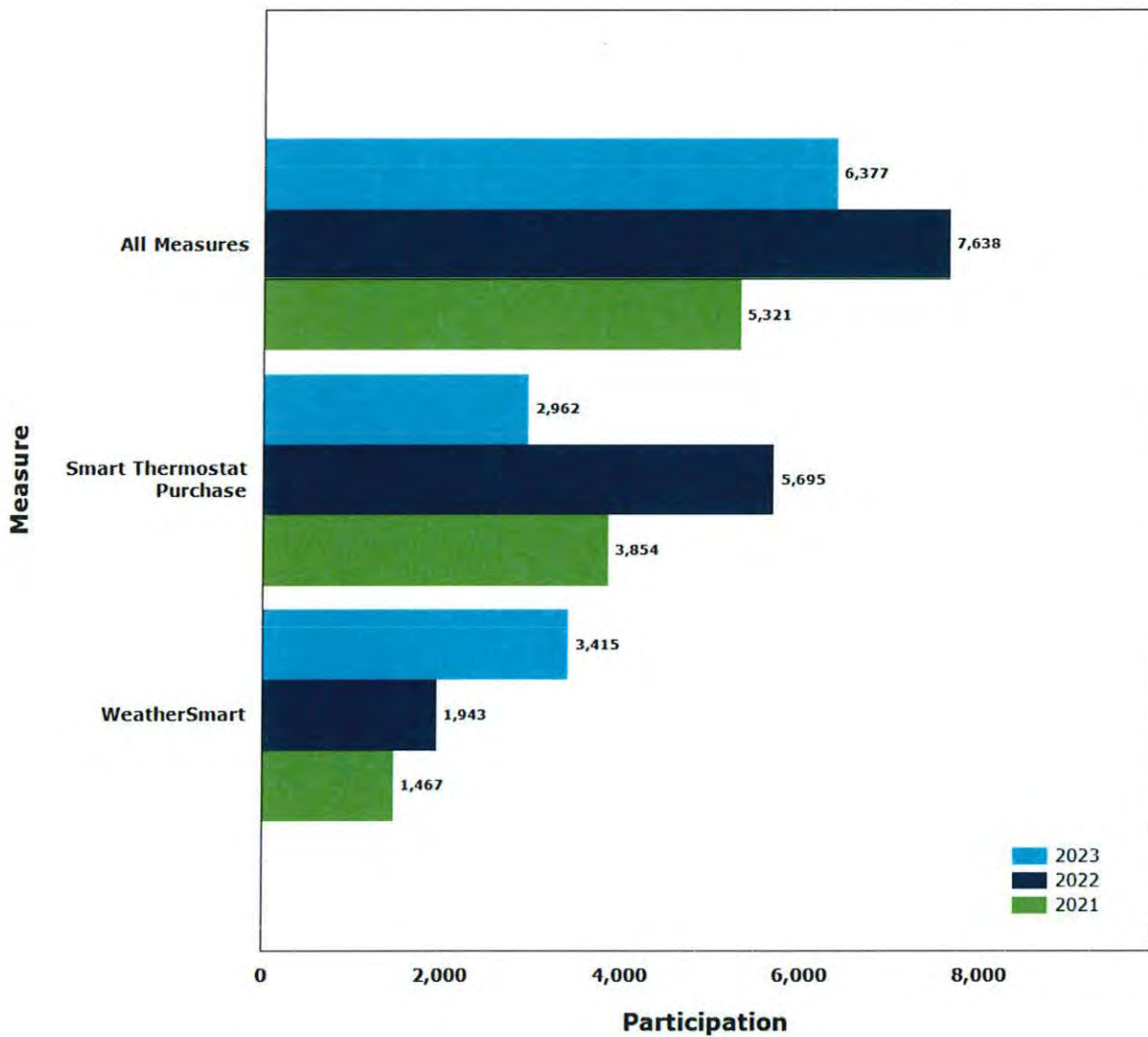




Figure 2-47. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program gross annual energy savings (MWh/year) by measure and year

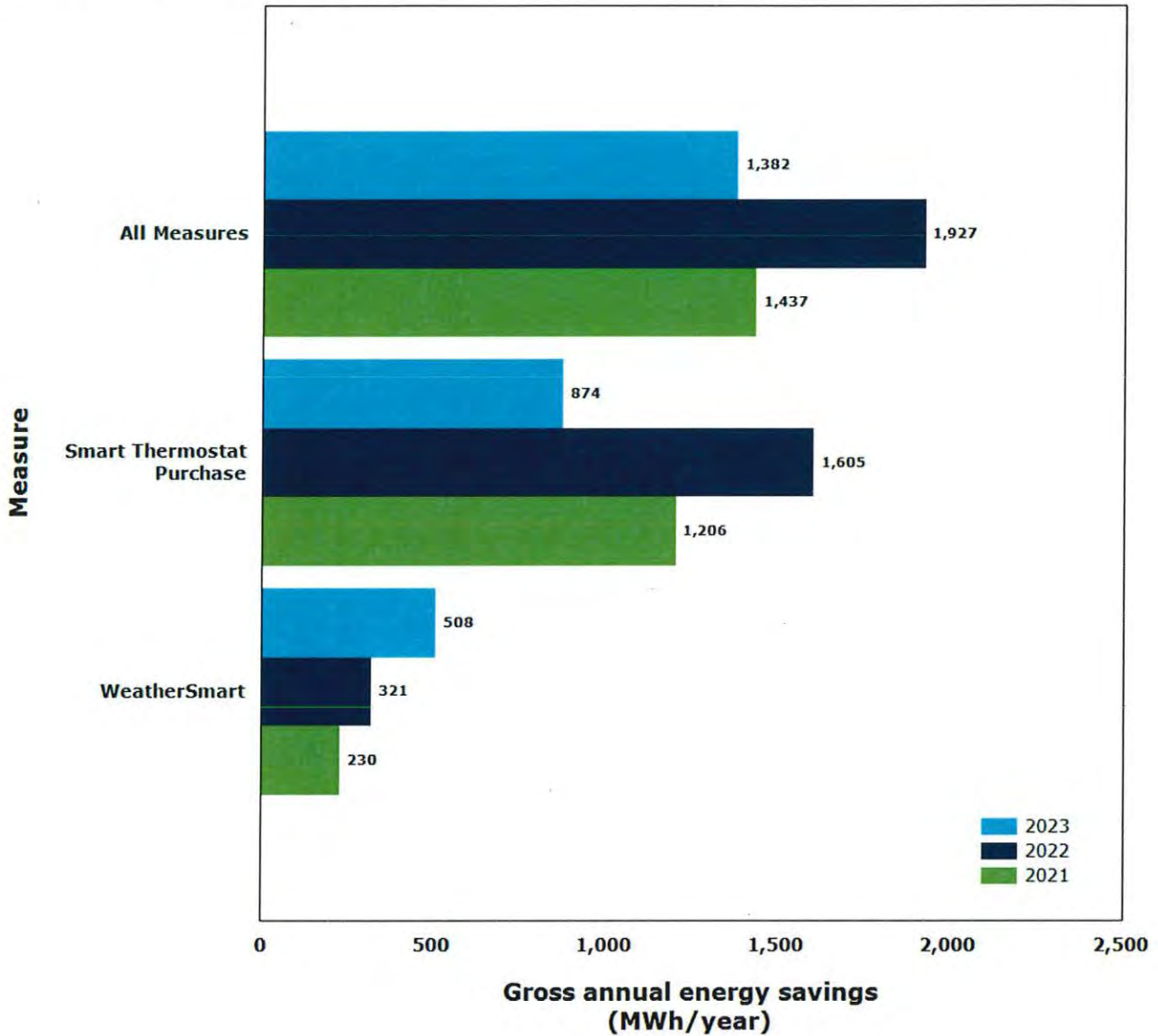




Figure 2-48 and Figure 2-49 show participation and gross annual energy savings by building type and year.

**Figure 2-48. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program participation by building type and year**

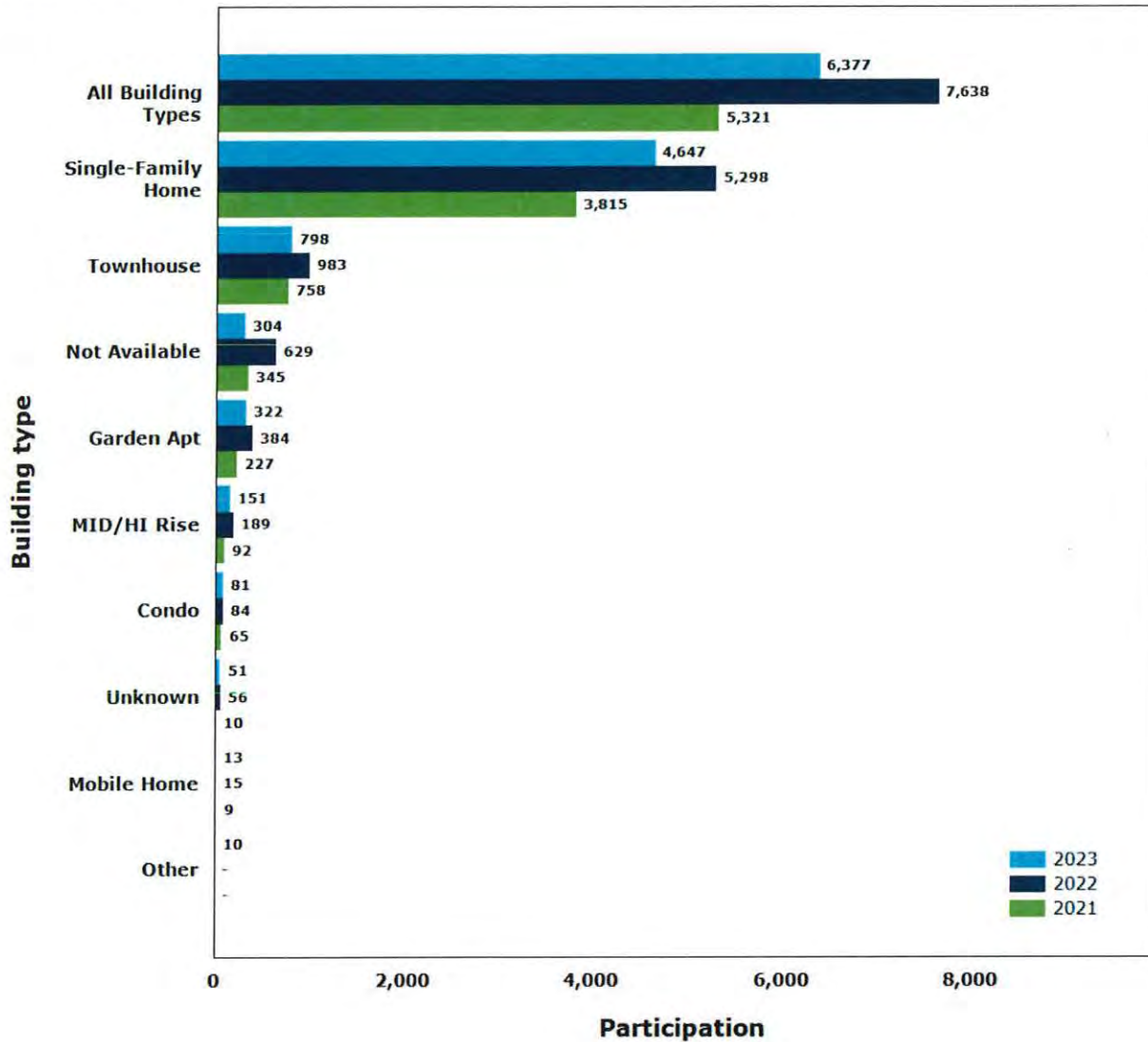
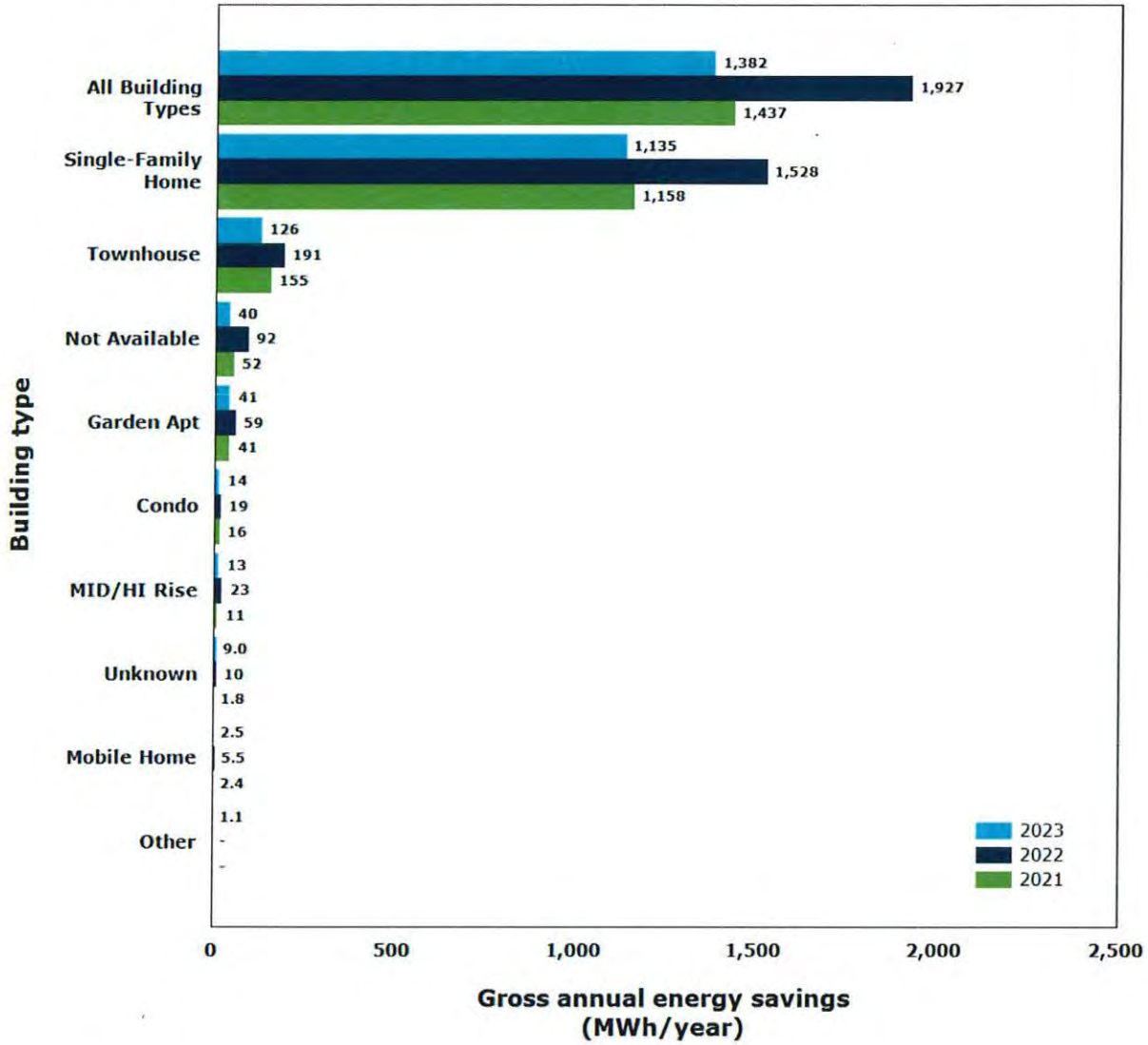




Figure 2-49. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program gross annual energy savings (MWh/year) by building type and year







**2.11.3.4 Additional North Carolina program data**

Figure 2-50 and Figure 2-51 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

**Figure 2-50. North Carolina Residential Smart Thermostat Purchase WeatherSmart participation by measure and year**

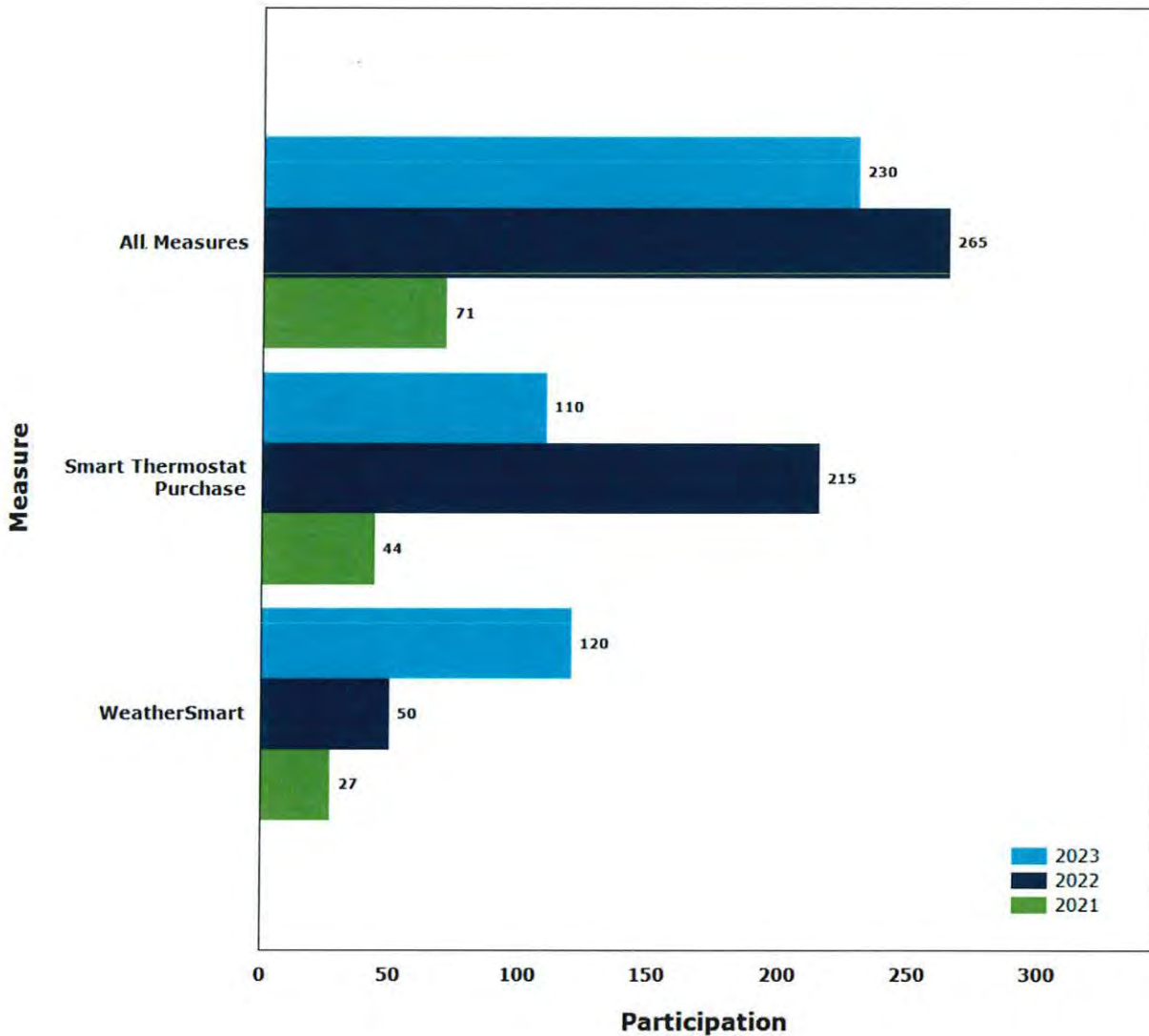
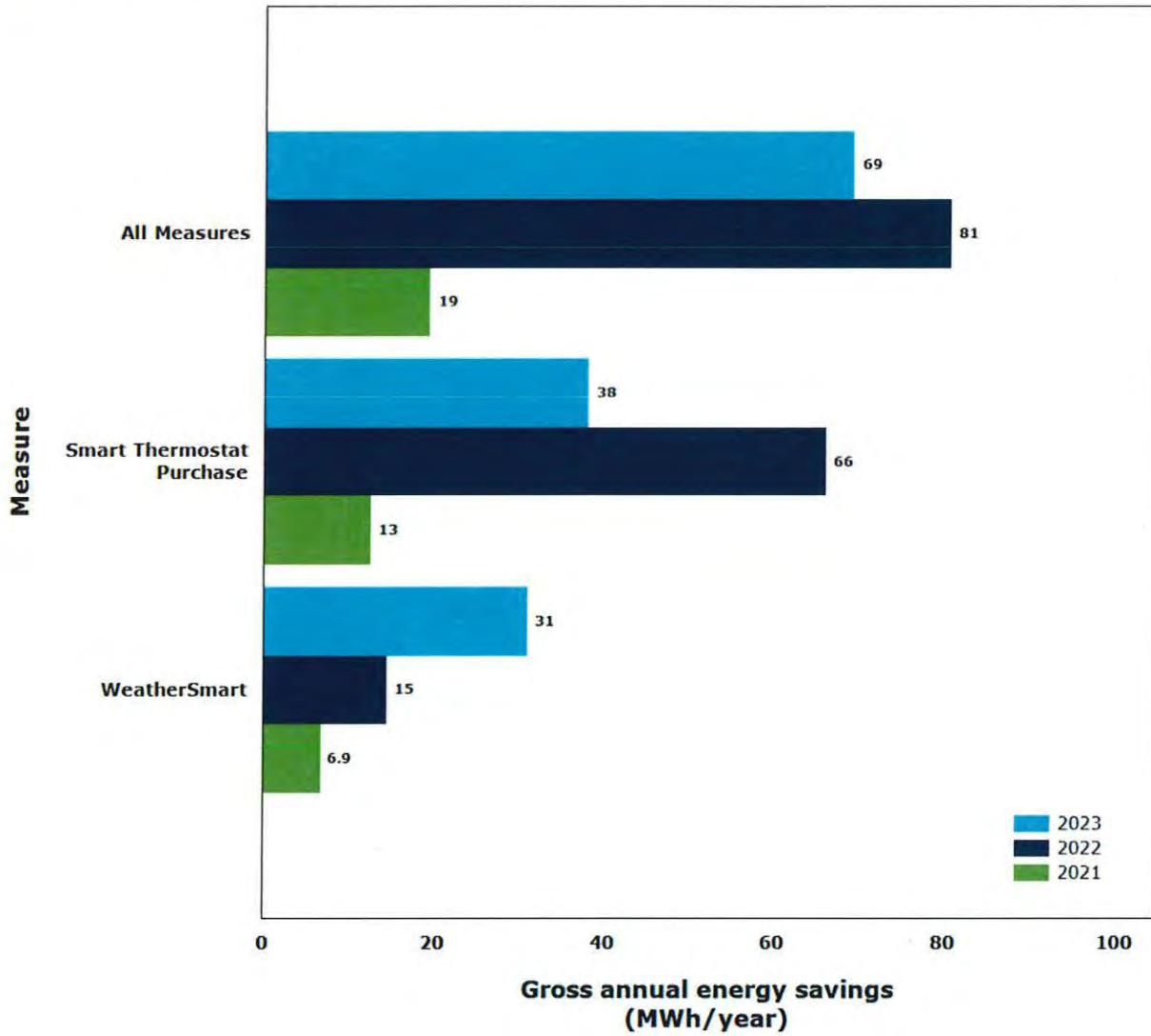




Figure 2-51. North Carolina Smart Thermostat Purchase and WeatherSmart gross annual energy savings (MWh/year) by measure and year



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Figure 2-61 and Figure 2-53 show the program's participation and gross annual and gross annual energy savings by building type. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

**Figure 2-52. North Carolina Smart Thermostat Purchase and WeatherSmart gross participation by building type and year**

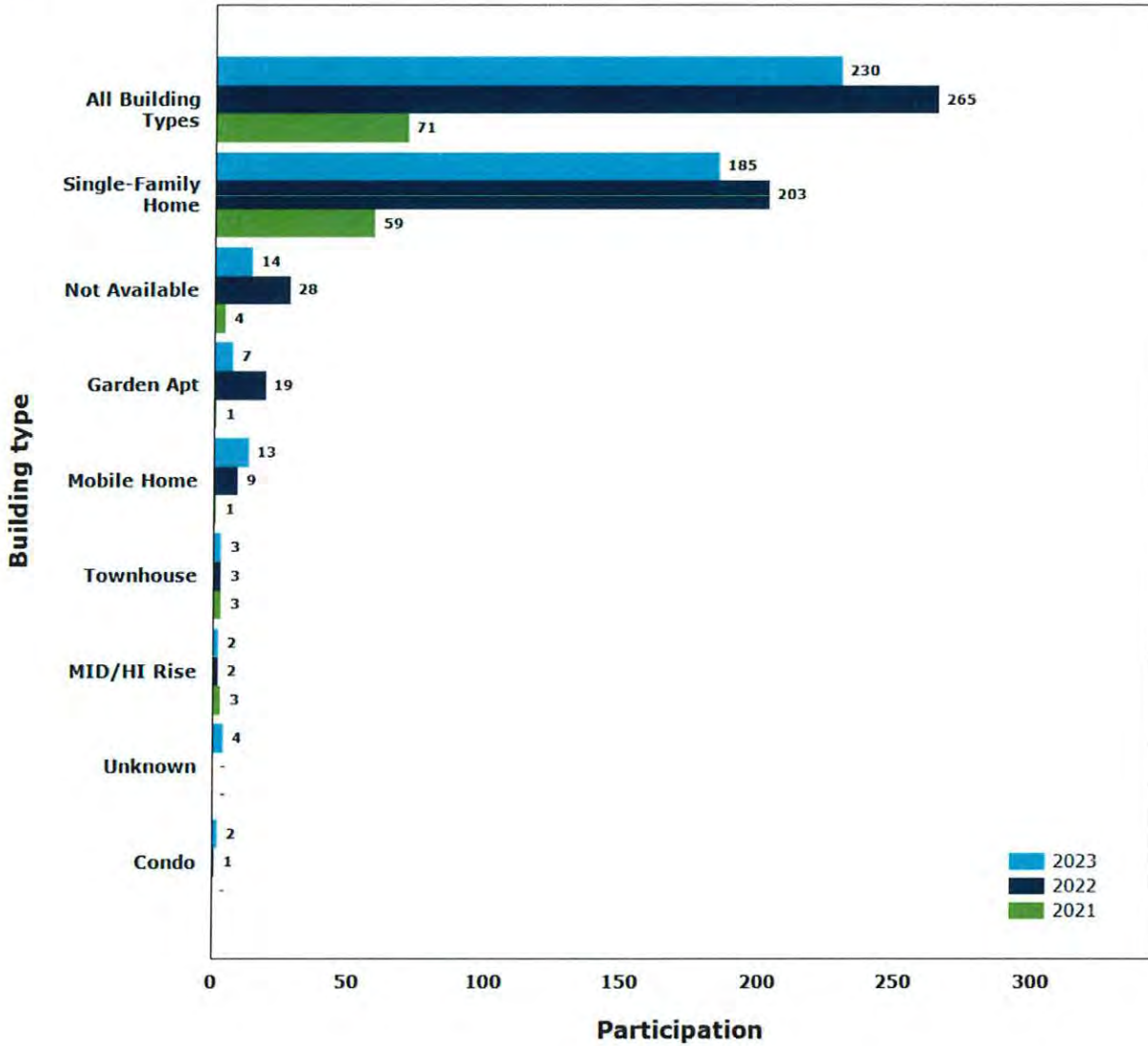
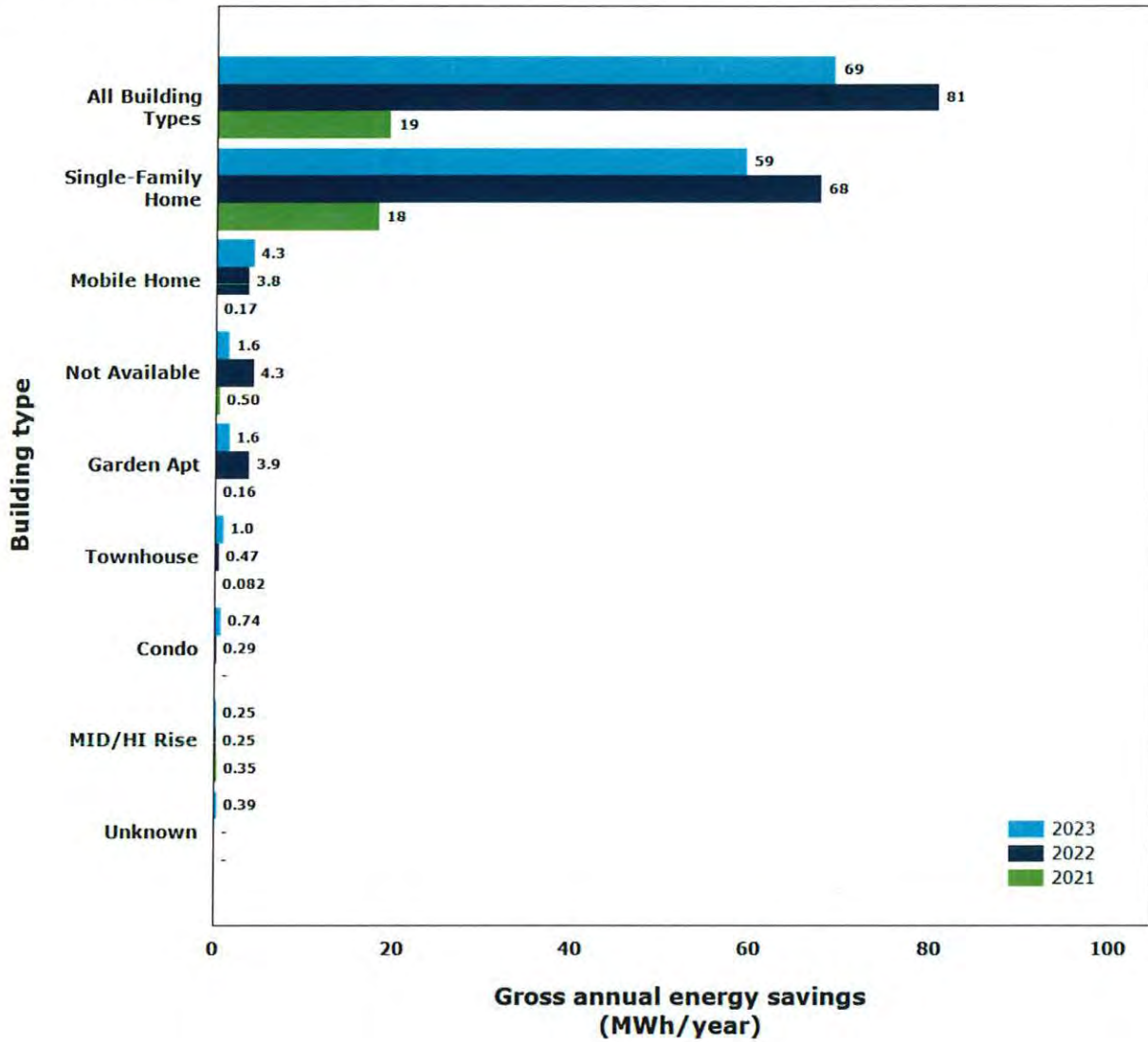




Figure 2-53. North Carolina Residential Smart Thermostat Purchase and WeatherSmart gross annual energy savings (MWh/year) by building type and year





## 2.12 Residential Smart Home – Virginia and North Carolina

### 2.12.1 Program description

The Smart Home Program connects residential customers with smart home technology to make their homes more convenient, personalized and energy efficient. For most of 2023 the smart home technologies were bundled into a convenient Smart Home kit. As of late 2023, customers have the option to build a custom kit that includes all eligible technologies (with a minimum of two technologies). The kits ensure that the customer benefits from a selection of fully integrated and compatible smart products.



Program participants must be Dominion Energy Services residential customers living in single-family detached or single-family attached residences (e.g., townhomes). To qualify for the Program, customers must also be the parties responsible for the electric bill and either own the home or otherwise be able to secure permission to complete measures. The eligible improvements include several options among the technologies listed below which vary by cost and available features.

- Smart plugs
- Motion Sensor
- Smart thermostats
- LED lamps
- Power strips
- Smart home hub
- Home energy monitor
- Home energy monitor with solar photovoltaic option

The Virginia SCC approved this program as part of the DSM Phase IX programs on September 7, 2021 (Case No. PUR-2020-00274) for a five-year period from January 1, 2022, through December 31, 2026. The Virginia program officially launched on January 1, 2022.<sup>70</sup> The North Carolina Utilities Commission approved this Program on March 18, 2022 (Docket No. E-22, SUB 618). The North Carolina program officially launched on August 1, 2022.<sup>71</sup> In 2023, both the Virginia and North Carolina programs achieved 1% of their planned participation levels.

### 2.12.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-34 outlines Dominion Energy's initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the Program is the count of unique account numbers.

<sup>70</sup> [Virginia Residential Smart Home Program - Terms and Conditions.](#)

<sup>71</sup> [North Carolina Smart Home Program - Terms and Conditions.](#)



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Table 2-34. Residential Smart Home Program planning assumptions

| Assumption   | Description           |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 85%                   |
| Measure life (years)   | 10.35                 |
| Gross average annual energy savings (kWh/year) per participant             | 1391                  |
| Gross average summer coincident peak demand reduction (kW) per participant | 0.34                  |
| Gross average winter coincident peak demand reduction (kW) per participant | 0.21                  |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.29                  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.18                  |
| Net average annual energy savings (kWh/year) per participant               | 1182                  |
| Average rebate (US\$) per participant                                      | 147                   |

### 2.12.3 Assessment of program progress toward plan

The next subsections describe the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.12.3.1 Key Virginia program data

Table 2-35 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-35. Virginia Residential Smart Home Program performance indicators (2021–2023)<sup>72</sup>

| Category                             | Item                            | 2021    | 2022         | 2023         | Program total (2021–2023) |
|--------------------------------------|---------------------------------|---------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                   |         |              |              |                           |
|                                      | Direct Implementation           |         |              |              |                           |
|                                      | Direct EM&V                     |         |              |              |                           |
|                                      | Indirect Other (Administrative) | \$425   | \$30,096     | \$39,596     | \$70,117                  |
| Total Costs (\$)                     | Total <sup>73</sup>             | \$9,058 | \$720,794    | \$586,023    | \$1,315,876               |
|                                      | Planned                         | \$0     | \$2,053,050  | \$2,329,743  | \$4,382,793               |
|                                      | Variance                        | \$9,058 | -\$1,332,256 | -\$1,743,719 | -\$3,066,917              |
|                                      | Annual % of Planned             | N/A     | 35%          | 25%          | 30%                       |
| Participants                         | Total (Gross)                   | N/A     | 15           | 47           | 62                        |
|                                      | Planned (Gross)                 | N/A     | 4,826        | 7,239        | 12,065                    |
|                                      | Variance                        | N/A     | -4,811       | -7,192       | -12,003                   |
|                                      | Annual % of Planned (Gross)     | N/A     | 0.3%         | 1%           | 1%                        |

<sup>72</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>73</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company’s margins.



| Category                                      | Item                                     | 2021 | 2022      | 2023      | Program total (2021–2023) |
|---|--|------|-----------|-----------|---------------------------|
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings               | N/A  | 8,087     | 22,616    | 30,703                    |
|   | Realization Rate                         | N/A  | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment              | N/A  | N/A       | N/A       | N/A                       |
|   | Adjusted Gross Savings                   | N/A  | 8,087     | 22,616    | 30,703                    |
|   | Net-to-Gross Ratio <sup>74</sup>         | N/A  | 85%       | 85%       | 85%                       |
|   | Net-to-Gross Adjustment                  | N/A  | -1,213    | -3,392    | -4,605                    |
|   | Net Adjusted Savings                     | N/A  | 6,874     | 19,224    | 26,098                    |
|   | Planned Savings (Net)                    | N/A  | 5,706,021 | 8,559,032 | 14,265,053                |
|   | Annual % Toward Planned Savings (Net)    | N/A  | 0.12%     | 0.22%     | 0.18%                     |
|   | Avg. Savings per Participant (Gross)     | N/A  | 539       | 481       | 495                       |
|   | Avg. Savings per Participant (Net)       | N/A  | 458       | 409       | 421                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand                | N/A  | 0.5       | 1.1       | 1.7                       |
|   | Realization Rate                         | N/A  | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment              | N/A  | N/A       | N/A       | N/A                       |
|   | Adjusted Gross Demand                    | N/A  | 0.5       | 1.1       | 1.7                       |
|   | Net-to-Gross Ratio <sup>74</sup>         | N/A  | 85%       | 85%       | 85%                       |
|   | Net-to-Gross Adjustment                  | N/A  | -0.1      | -0.2      | -0.3                      |
|   | Net Adjusted Demand                      | N/A  | 0.4       | 1.0       | 1.4                       |
|   | Planned Demand (Net)                     | N/A  | 1,398.4   | 2,097.7   | 3,496.1                   |
|   | Annual % Toward Planned Demand (Net)     | N/A  | 0.03%     | 0.05%     | 0.04%                     |
|   | Avg. Peak Demand per Participant (Gross) | N/A  | 0.04      | 0.02      | 0.03                      |
|   | Avg. Demand per Participant (Net)        | N/A  | 0.03      | 0.02      | 0.02                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand                | N/A  | 2.9       | 1.2       | 4.0                       |
|   | Realization Rate                         | N/A  | 100%      | 100%      | 100%                      |
|   | Realization Rate Adjustment              | N/A  | N/A       | N/A       | N/A                       |
|   | Adjusted Gross Demand                    | N/A  | 2.9       | 1.2       | 4.0                       |
|   | Net-to-Gross Ratio <sup>74</sup>         | N/A  | 85%       | 85%       | 85%                       |
|   | Net-to-Gross Adjustment                  | N/A  | -0.4      | -0.2      | -0.6                      |
|   | Net Adjusted Demand                      | N/A  | 2.4       | 1.0       | 3.4                       |
|   | Planned Demand (Net)                     | N/A  | 854       | 1,281     | 2,136                     |
|   | Annual % Toward Planned                  | N/A  | 0.29%     | 0.08%     | 0.16%                     |

<sup>74</sup> On the rebate application form the program implementation vendor included the question, “Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?” Of the participants who responded (from program inception to the end of this reporting period), 100% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



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| Category                                     | Item                                     | 2021  | 2022     | 2023     | Program total (2021–2023) |
|--|--|-------|----------|----------|---------------------------|
|  | Demand (Net)                             |       |          |          |                           |
|  | Avg. Peak Demand per Participant (Gross) | N/A   | 0.2      | 0.02     | 0.07                      |
|  | Avg. Demand per Participant (Net)        | N/A   | 0.2      | 0.02     | 0.06                      |
| <b>Cumulative Annual Program Performance</b> | \$Admin. per Participant (Gross)         | N/A   | \$2,035  | \$1,131  | \$1,131                   |
|  | \$Admin. per kWh/year (Gross)            | N/A   | \$4      | \$2      | \$2                       |
|  | \$Admin. per kW (Gross)                  | N/A   | \$57,960 | \$41,848 | \$41,848                  |
|  | \$EM&V per Total Costs (\$)              | 49.0% | 6.8%     | 6.5%     | 6.5%                      |
|  | \$Rebate per Participant (Gross)         | N/A   | \$57     | \$58     | \$58                      |

**2.12.3.2 Key North Carolina program data**

Table 2-36 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-36. North Carolina Residential Smart Home Program performance indicators (2022–2023)<sup>72</sup>**

| Category                                    | Item                             | 2022    | 2023       | Program total (2022–2023) |
|---|----------------------------------|---------|------------|---------------------------|
| <b>Operations and Management Costs (\$)</b> | Direct Rebate                    |         |            |                           |
|   | Direct Implementation            |         |            |                           |
|   | Direct EM&V                      |         |            |                           |
|   | Indirect Other (Administrative)  | 689     | \$2,409    | \$3,098                   |
| <b>Total Costs (\$)</b>                     | Total <sup>73</sup>              | 16,505  | \$35,651   | \$52,155                  |
|   | Planned                          | 52,623  | \$143,122  | \$195,745                 |
|   | Variance                         | -36,119 | -\$107,471 | -\$143,590                |
|   | Annual % of Planned              | 31%     | 25%        | 27%                       |
| <b>Participants</b>                         | Total (Gross)                    | 1       | 1          | 2                         |
|   | Planned (Gross)                  | 308     | 462        | 770                       |
|   | Variance                         | -307    | -461       | -768                      |
|   | Annual % of Planned (Gross)      | 0.3%    | 0.2%       | 0.3%                      |
| <b>Installed Energy Savings (kWh/year)</b>  | Total Gross Deemed Savings       | 383     | 295        | 679                       |
|   | Realization Rate                 | 100%    | 100%       | 100%                      |
|   | Realization Rate Adjustment      | 0       | 0          | 0                         |
|   | Adjusted Gross Savings           | 383     | 295        | 679                       |
|   | Net-to-Gross Ratio <sup>74</sup> | 85%     | 85%        | 85%                       |
|   | Net-to-Gross Adjustment          | -58     | -44        | -102                      |

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| Category                                      | Item                                     | 2022     | 2023     | Program total (2022–2023) |
|---|--|----------|----------|---------------------------|
|   | Net Adjusted Savings                     | 326      | 251      | 577                       |
|   | Planned Savings (Net)                    | 364,164  | 546,246  | 910,410                   |
|   | Annual % Toward Planned Savings (Net)    | 0.09%    | 0.05%    | 0.06%                     |
|   | Avg. Savings per Participant (Gross)     | 383      | 295      | 339                       |
|   | Avg. Savings per Participant (Net)       | 326      | 251      | 288                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand                | 0.03     | 0.02     | 0.05                      |
|   | Realization Rate                         | 100%     | 100%     | 100%                      |
|   | Realization Rate Adjustment              | 0        | 0.0      | 0.0                       |
|   | Adjusted Gross Demand                    | 0.03     | 0.02     | 0.05                      |
|   | Net-to-Gross Ratio <sup>74</sup>         | 85%      | 85%      | 85%                       |
|   | Net-to-Gross Adjustment                  | -0.0045  | -0.0030  | -0.0082                   |
|   | Net Adjusted Demand                      | 0.0255   | 0.0168   | 0.0465                    |
|   | Planned Demand (Net)                     | 89.3     | 133.9    | 223.1                     |
|   | Annual % Toward Planned Demand (Net)     | 0.03%    | 0.01%    | 0.02%                     |
|   | Avg. Peak Demand per Participant (Gross) | 0.03     | 0.02     | 0.03                      |
|   | Avg. Demand per Participant (Net)        | 0.03     | 0.02     | 0.02                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand                | 0.2      | 0.0      | 0.2                       |
|   | Realization Rate                         | 100%     | 100%     | 100%                      |
|   | Realization Rate Adjustment              | 0        | 0.0      | 0.0                       |
|   | Adjusted Gross Demand                    | 0.2      | 0.0      | 0.2                       |
|   | Net-to-Gross Ratio <sup>74</sup>         | 85%      | 85%      | 85%                       |
|   | Net-to-Gross Adjustment                  | -0.030   | -0.003   | -0.032                    |
|   | Net Adjusted Demand                      | 0.17     | 0.02     | 0.18                      |
|   | Planned Demand (Net)                     | 54.5     | 81.8     | 136.3                     |
|   | Annual % Toward Planned Demand (Net)     | 0.3%     | 0.0%     | 0.1%                      |
|   | Avg. Peak Demand per Participant (Gross) | 0.2      | 0.02     | 0.1                       |
|   | Avg. Demand per Participant (Net)        | 0.2      | 0.02     | 0.09                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)         | \$689    | \$1,549  | \$1,549                   |
|   | \$Admin. per kWh/year (Gross)            | \$2      | \$5      | \$5                       |
|   | \$Admin. per kW (Gross)                  | \$19,725 | \$56,638 | \$56,638                  |
|   | \$EM&V per Total Costs (\$)              | 9.1%     | 7.0%     | 7.0%                      |
|   | \$Rebate per Participant (Gross)         | \$25     | \$42     | \$42                      |

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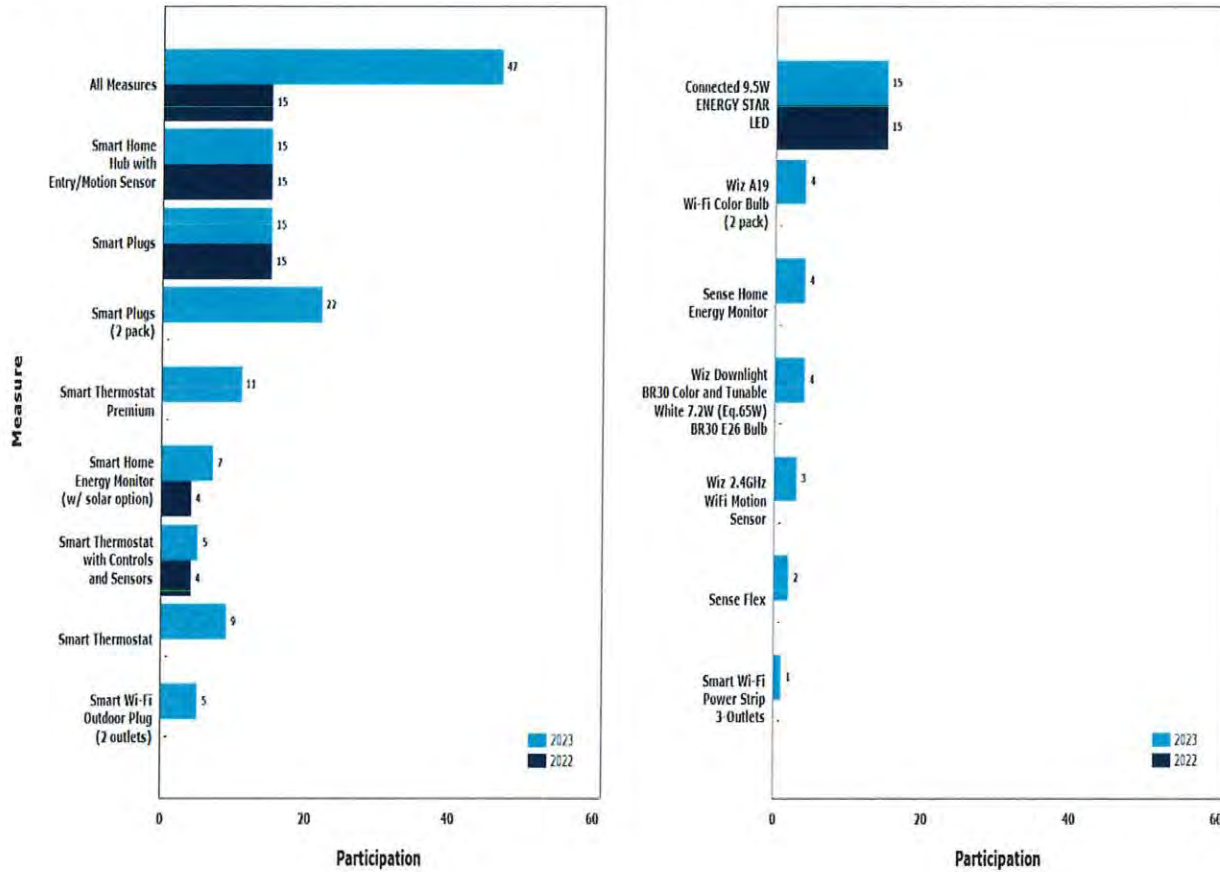


**2.12.3.3 Additional Virginia program data**

Figure 2-54 and Figure 2-55 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

Figure 2-54 shows that 43% of program participants installed smart plugs. Energy Star lamps and the smart home hub were the second most installed measures, adopted by 32% of participants.<sup>75</sup>

**Figure 2-54. Virginia Residential Smart Home Program participation by measure and year**

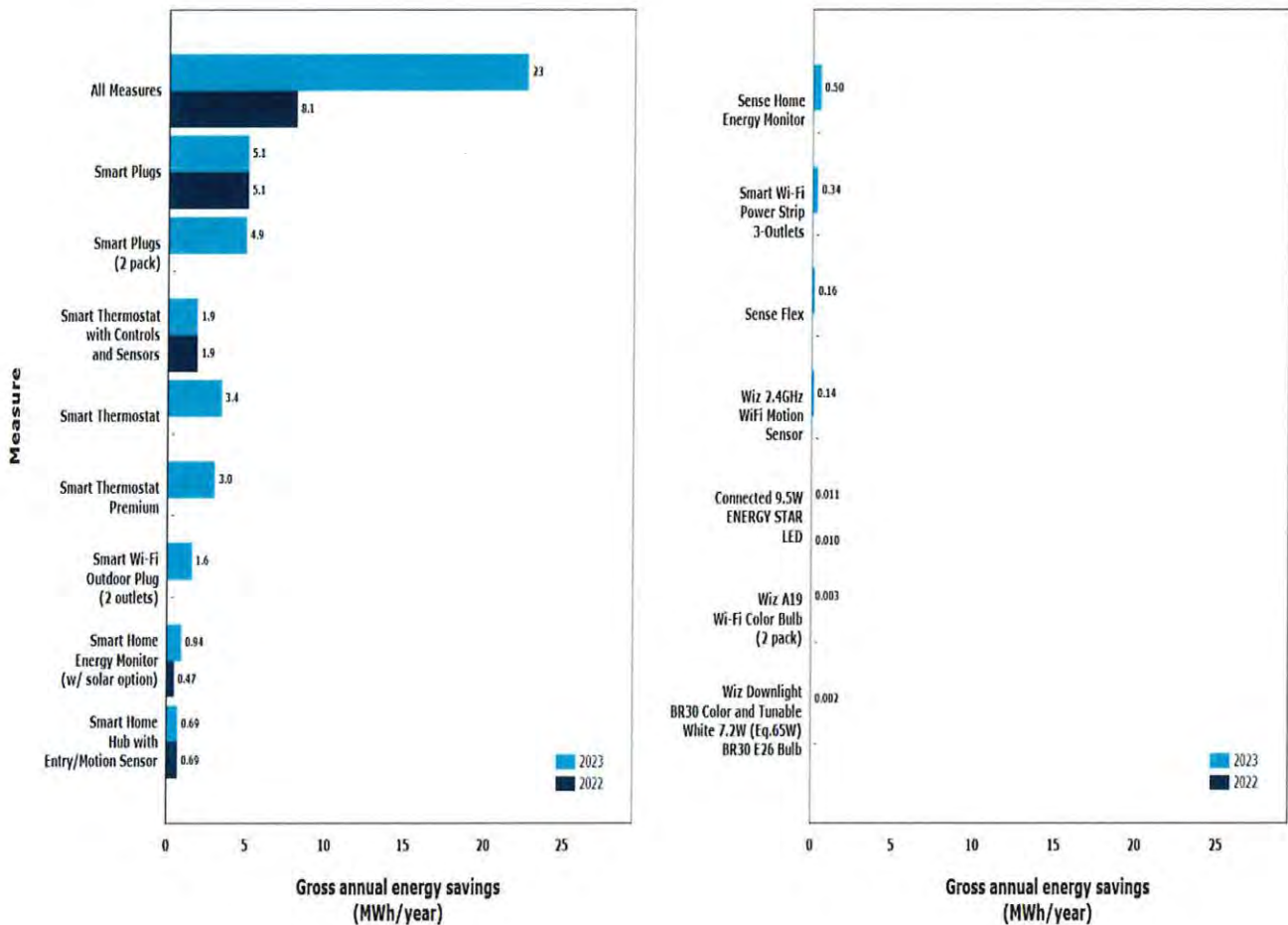


<sup>75</sup> Note that the participant counts in Figure 2-64 and Figure 2-65 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-35), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Figure 2-55 shows that smart plugs also produced the highest level of gross annual energy savings (43%). While program participants installed the ENERGY STAR lamps and smart home hub with motion sensor measures as at similar rates as the smart plugs, their contribution to savings do not follow the same pattern. Smart thermostats were the second largest contributors of gross annual energy savings, accounting for of 28% of the energy savings.

**Figure 2-55. Virginia Residential Smart Home Program gross annual energy savings by measure and year (MWh/year)**



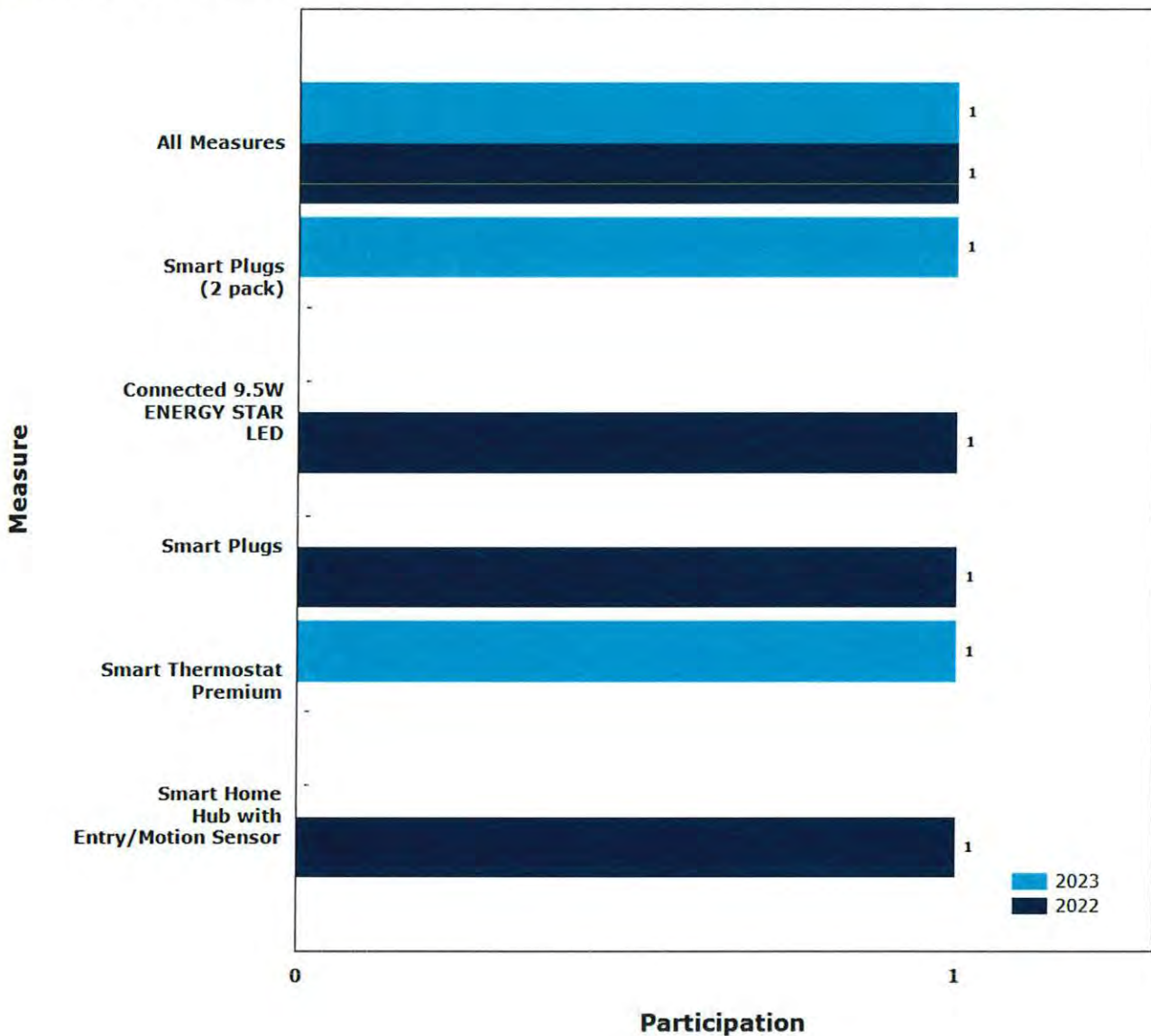


**2.12.3.4 Additional North Carolina program data**

Figure 2-56 and Figure 2-57 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 2-56 shows that 43% of program participants installed smart plugs. Energy Star lamps and the smart home hub were the second most installed measures, adopted by 32% of participants.<sup>76</sup>

**Figure 2-56. North Carolina Residential Smart Home Program participation by measure and year**

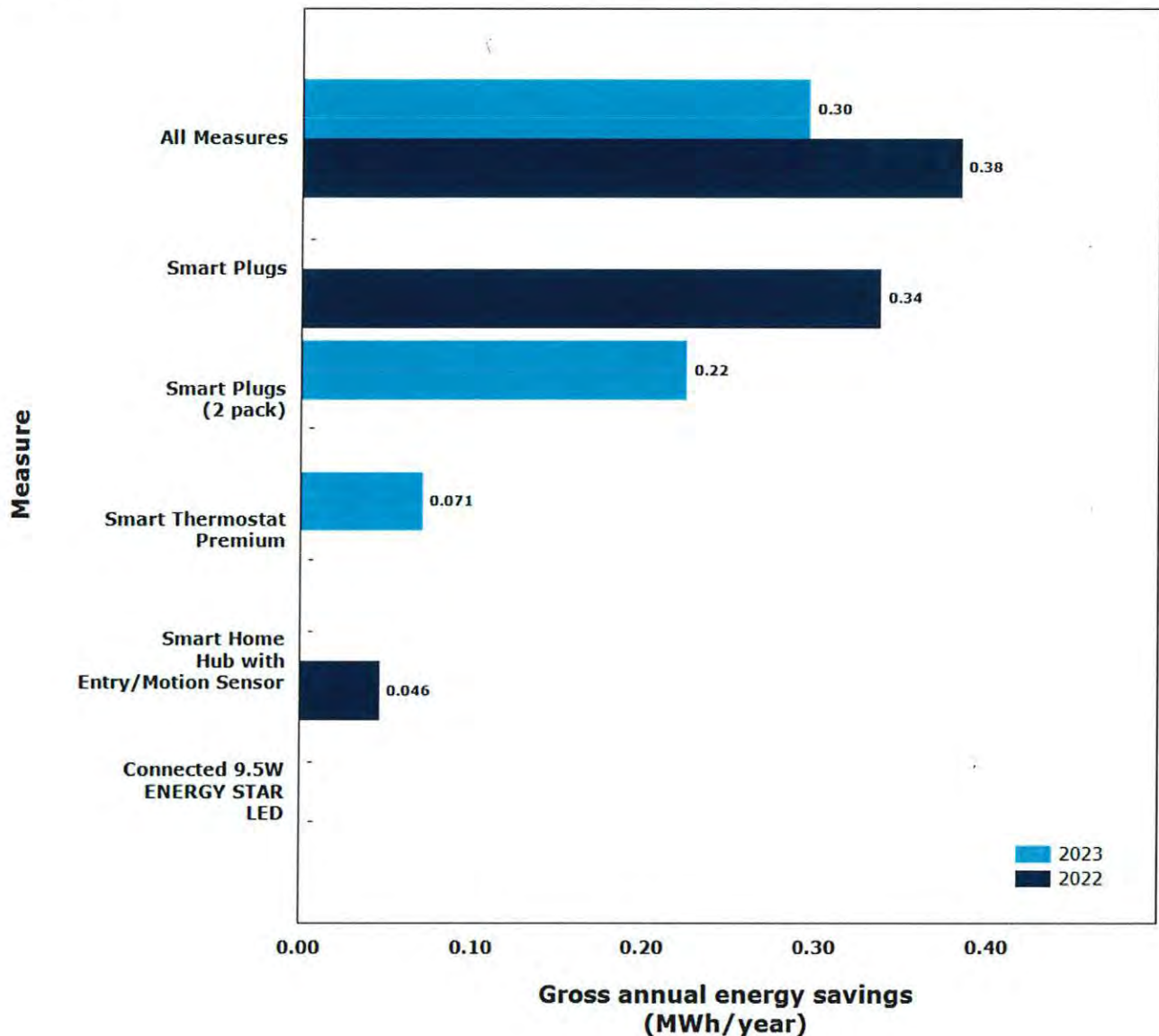


<sup>76</sup> Note that the participant counts in Figure 2-56 and Figure 2-58 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-35), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



Smart plugs measure accounted for the most gross annual energy savings for the Program in 2023, representing 89% of the total Program energy saved, as Figure 2-57 shows. The chart also shows that despite being installed as frequently as the smart plugs in 2023, the ENERGY STAR LED and smart home hub with motion sensor measures made only small contributions to total Program gross annual energy savings in 2023.

**Figure 2-57. North Carolina Residential Smart Home Program gross annual energy savings by measure and year (MWh/year)**





## 2.13 Residential Virtual Energy Audit – Virginia and North Carolina

### 2.13.1 Program description

The Residential Virtual Energy Audit Program offers residential customers in Virginia and North Carolina the opportunity to participate in an online, self-directed home energy assessment. The energy assessment is completed by the customer, with no trade ally intervention. Customers who complete the self-assessment may receive a no-cost kit containing energy-saving measures. The mix of measures in the kit is based on the customer’s responses to the assessment, is compatible with the existing equipment, and optimizes energy savings. Kit measures include low-flow showerheads, aerators, water heater pipe insulation, LED lamp upgrades, door and window weatherstripping, door sweeps, outlet/switch gaskets, and caulking.



The Virginia SCC approved this program as part of the DSM Phase IX programs on September 7, 2021 (Case No. PUR-2020-00274) for five years from January 1, 2022, through December 31, 2026. The North Carolina Utilities Commission approved this program on February 15, 2022 (Docket No. E-22, SUB 614 - 621). Program activity started in the summer of 2022 for Virginia and North Carolina.

### 2.13.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-37 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of unique account numbers.

**Table 2-37. Residential Virtual Audits initial program planning assumptions**

| Assumption   | Value                 |
|--|-----------------------|
| Target market  | Residential customers |
| NTG factor   | 60%                   |
| Measure life (years)   | 17                    |
| Gross average annual savings per participant (kWh/year)                    | 496                   |
| Gross average summer coincident peak demand reduction per participant (kW) | 0.17                  |
| gross average winter coincident peak demand reduction per participant (kW) | 0.11                  |
| Net average annual energy savings per participant (kWh/year)               | 317.4                 |
| Net average summer coincident peak demand reduction (kW) per participant   | 0.10                  |
| Net average winter coincident peak demand reduction (kW) per participant   | 0.07                  |
| Average rebate per participant (\$US)                                      | \$51                  |



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### 2.13.3 Assessment of program progress toward plan

This section describes the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.13.3.1 Key Virginia program data

Table 2-38 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

Table 2-38. Virginia Residential Virtual Audit Program performance indicators (2021–2023)<sup>77</sup>

| Category                             | Item                                  | 2021    | 2022         | 2023         | Program total (2021–2023) |
|--------------------------------------|---------------------------------------|---------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | Direct Rebate                         |         |              |              |                           |
|                                      | Direct Implementation                 |         |              |              |                           |
|                                      | Direct EM&V                           |         |              |              |                           |
|                                      | Indirect Other (Administrative)       | \$209   | \$27,770     | \$101,128    | \$129,108                 |
| Total Costs (\$)                     | Total <sup>78</sup>                   | \$4,465 | \$665,100    | \$1,496,704  | \$2,166,270               |
|                                      | Planned                               | \$0     | \$4,205,740  | \$3,338,016  | \$7,543,756               |
|                                      | Variance                              | \$4,465 | -\$3,540,640 | -\$1,841,311 | -\$5,377,486              |
|                                      | Annual % of Planned                   | N/A     | 16%          | 45%          | 29%                       |
| Participants                         | Total (Gross)                         | 0       | 2,149        | 8,044        | 10,193                    |
|                                      | Planned (Gross)                       | 0       | 56,400       | 47,000       | 103,400                   |
|                                      | Variance                              | 0       | -54,251      | -38,956      | -93,207                   |
|                                      | Annual % of Planned (Gross)           | N/A     | 4%           | 17%          | 10%                       |
| Installed Energy Savings (kWh/year)  | Total Gross Deemed Savings            | 0       | 1,972,641    | 5,958,568    | 7,931,209                 |
|                                      | Realization Rate                      | N/A     | 100%         | 100%         | 100%                      |
|                                      | Realization Rate Adjustment           | 0       | 0            | 0            | 0                         |
|                                      | Adjusted Gross Savings                | 0       | 1,972,641    | 5,958,568    | 7,931,209                 |
|                                      | Net-to-Gross Ratio                    | N/A     | 60%          | 60%          | 60%                       |
|                                      | Net-to-Gross Adjustment               | 0       | -789,056     | -2,383,427   | -3,172,483                |
|                                      | Net Adjusted Savings                  | 0       | 1,183,584    | 3,575,141    | 4,758,725                 |
|                                      | Planned Savings (Net)                 | 0       | 16,784,640   | 13,987,200   | 30,771,840                |
|                                      | Annual % Toward Planned Savings (Net) | N/A     | 7.05%        | 25.6%        | 15.5%                     |
|                                      | Avg. Savings per Participant (Gross)  | N/A     | 918          | 741          | 778                       |

<sup>77</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>78</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company’s margins.



| Category                                      | Item                                    | 2021 | 2022    | 2023    | Program total (2021–2023) |
|---|---|------|---------|---------|---------------------------|
|   | Avg. Savings per Participant (Net)      | N/A  | 551     | 444     | 467                       |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0    | 163.6   | 574.1   | 737.7                     |
|   | Realization Rate                        | N/A  | 100%    | 100%    | 100%                      |
|   | Realization Rate Adjustment             | 0    | 0       | 0       | 0                         |
|   | Adjusted Gross Demand                   | 0    | 163.6   | 574.1   | 737.7                     |
|   | Net-to-Gross Ratio                      | N/A  | 60%     | 60%     | 60%                       |
|   | Net-to-Gross Adjustment                 | 0    | -65.4   | -229.6  | -295.1                    |
|   | Net Adjusted Demand                     | 0    | 98.2    | 344.4   | 442.6                     |
|   | Planned Demand (Net)                    | 0    | 5,752.8 | 4,794.0 | 10,546.8                  |
|   | Annual % Toward Planned Reduction (Net) | N/A  | 1.71%   | 7.18%   | 4.20%                     |
|   | Avg. Demand per Participant (Gross)     | N/A  | 0.08    | 0.07    | 0.07                      |
|   | Avg. Demand per Participant (Net)       | N/A  | 0.05    | 0.04    | 0.04                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 0.0  | 269.3   | 942.2   | 1,211.5                   |
|   | Realization Rate                        | N/A  | 100%    | 100%    | 100%                      |
|   | Realization Rate Adjustment             | 0    | 0       | 0       | 0                         |
|   | Adjusted Gross Demand                   | 0    | 269.3   | 942.2   | 1,211.5                   |
|   | Net-to-Gross Ratio                      | N/A  | 60%     | 60%     | 60%                       |
|   | Net-to-Gross Adjustment                 | 0    | -107.7  | -376.9  | -484.6                    |
|   | Net Adjusted Demand                     | 0    | 161.6   | 565.3   | 726.9                     |
|   | Planned Demand (Net)                    | 0    | 3,722.4 | 3,102.0 | 6,824.4                   |
|   | Annual % Toward Planned Reduction (Net) | N/A  | 4.34%   | 18.2%   | 10.7%                     |
|   | Avg. Demand per Participant (Gross)     | N/A  | 0.1     | 0.1     | 0.1                       |
|   | Avg. Demand per Participant (Net)       | N/A  | 0.08    | 0.07    | 0.07                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | N/A  | \$13    | \$13    | \$13                      |
|   | \$Admin. per kWh/year (Gross)           | N/A  | \$0.01  | \$0.02  | \$0.02                    |
|   | \$Admin. per kW (Gross)                 | N/A  | \$171   | \$175   | \$175                     |
|   | \$EM&V per Total Costs (\$)             | 0.0% | 7.2%    | 7.5%    | 7.5%                      |
|   | \$Rebate per Participant (Gross)        | N/A  | \$119   | \$115   | \$115                     |





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2.13.3.2 Key North Carolina program data

Table 2-39 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L..

Table 2-39. North Carolina Residential Virtual Audit Program performance indicators (2022–2023)<sup>79</sup>

| Category                               | Item                                  | 2022      | 2023       | Program total (2022–2023) |
|--|---------------------------------------|-----------|------------|---------------------------|
| Operations and Management Costs (\$)   | Direct Rebate                         |           |            |                           |
|  | Direct Implementation                 |           |            |                           |
|  | Direct EM&V                           |           |            |                           |
|  | Indirect Other (Administrative)       | \$647     | \$5,778    | \$6,425                   |
| Total Costs (\$)                       | Total <sup>80</sup>                   | \$15,492  | \$85,520   | \$101,012                 |
|  | Planned                               | \$107,801 | \$205,063  | \$312,864                 |
|  | Variance                              | -\$92,308 | -\$119,543 | -\$211,851                |
|  | Annual % of Planned                   | 14%       | 42%        | 32%                       |
| Participants                           | Total (Gross)                         | 39        | 377        | 416                       |
|  | Planned (Gross)                       | 3,600     | 3,000      | 6,600                     |
|  | Variance                              | -3,561    | -2,623     | -6,184                    |
|  | Annual % of Planned (Gross)           | 1%        | 13%        | 6%                        |
| Installed Energy Savings (kWh/year)    | Total Gross Deemed Savings            | 40,749    | 355,820    | 396,569                   |
|  | Realization Rate                      | 100%      | 100%       | 100%                      |
|  | Realization Rate Adjustment           | 0         | 0          | 0                         |
|  | Adjusted Gross Savings                | 40,749    | 355,820    | 396,569                   |
|  | Net-to-Gross Ratio                    | 60%       | 60%        | 60%                       |
|  | Net-to-Gross Adjustment               | -16,300   | -142,328   | -158,628                  |
|  | Net Adjusted Savings                  | 24,450    | 213,492    | 237,941                   |
|  | Planned Savings (Net)                 | 1,071,360 | 892,800    | 1,964,160                 |
|  | Annual % Toward Planned Savings (Net) | 2.28%     | 23.9%      | 12.1%                     |
|  | Avg. Savings per Participant (Gross)  | 1,045     | 944        | 953                       |
|  | Avg. Savings per Participant (Net)    | 627       | 566        | 572                       |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand             | 3.5       | 33.7       | 37.2                      |
|  | Realization Rate                      | 100%      | 100%       | 100%                      |
|  | Realization Rate Adjustment           | 0         | 0          | 0                         |
|  | Adjusted Gross Demand                 | 3.5       | 33.7       | 37.2                      |

<sup>79</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>80</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.



| Category                                      | Item                                    | 2022   | 2023   | Program total (2022–2023) |
|---|---|--------|--------|---------------------------|
|   | Net-to-Gross Ratio                      | 60%    | 60%    | 60%                       |
|   | Net-to-Gross Adjustment                 | -1.4   | -13.5  | -14.9                     |
|   | Net Adjusted Demand                     | 2.1    | 20.2   | 22.3                      |
|   | Planned Demand (Net)                    | 367.2  | 306.0  | 673.2                     |
|   | Annual % Toward Planned Reduction (Net) | 0.57%  | 6.61%  | 3.31%                     |
|   | Avg. Demand per Participant (Gross)     | 0.09   | 0.09   | 0.09                      |
|   | Avg. Demand per Participant (Net)       | 0.05   | 0.05   | 0.05                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand               | 5.6    | 52.2   | 57.8                      |
|   | Realization Rate                        | 100%   | 100%   | 100%                      |
|   | Realization Rate Adjustment             | 0      | 0      | 0                         |
|   | Adjusted Gross Demand                   | 5.6    | 52.2   | 57.8                      |
|   | Net-to-Gross Ratio                      | 60%    | 60%    | 60%                       |
|   | Net-to-Gross Adjustment                 | -2.2   | -20.9  | -23.1                     |
|   | Net Adjusted Demand                     | 3.4    | 31.3   | 34.7                      |
|   | Planned Demand (Net)                    | 237.6  | 198.0  | 435.6                     |
|   | Annual % Toward Planned Reduction (Net) | 1.41%  | 15.8%  | 7.96%                     |
|   | Avg. Demand per Participant (Gross)     | 0.1    | 0.1    | 0.1                       |
|   | Avg. Demand per Participant (Net)       | 0.09   | 0.08   | 0.08                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)        | \$17   | \$15   | \$15                      |
|   | \$Admin. per kWh/year (Gross)           | \$0.02 | \$0.02 | \$0.02                    |
|   | \$Admin. per kW (Gross)                 | \$185  | \$173  | \$173                     |
|   | \$EM&V per Total Costs (\$)             | 11.0%  | 8.4%   | 8.4%                      |
|   | \$Rebate per Participant (Gross)        | \$127  | \$129  | \$129                     |

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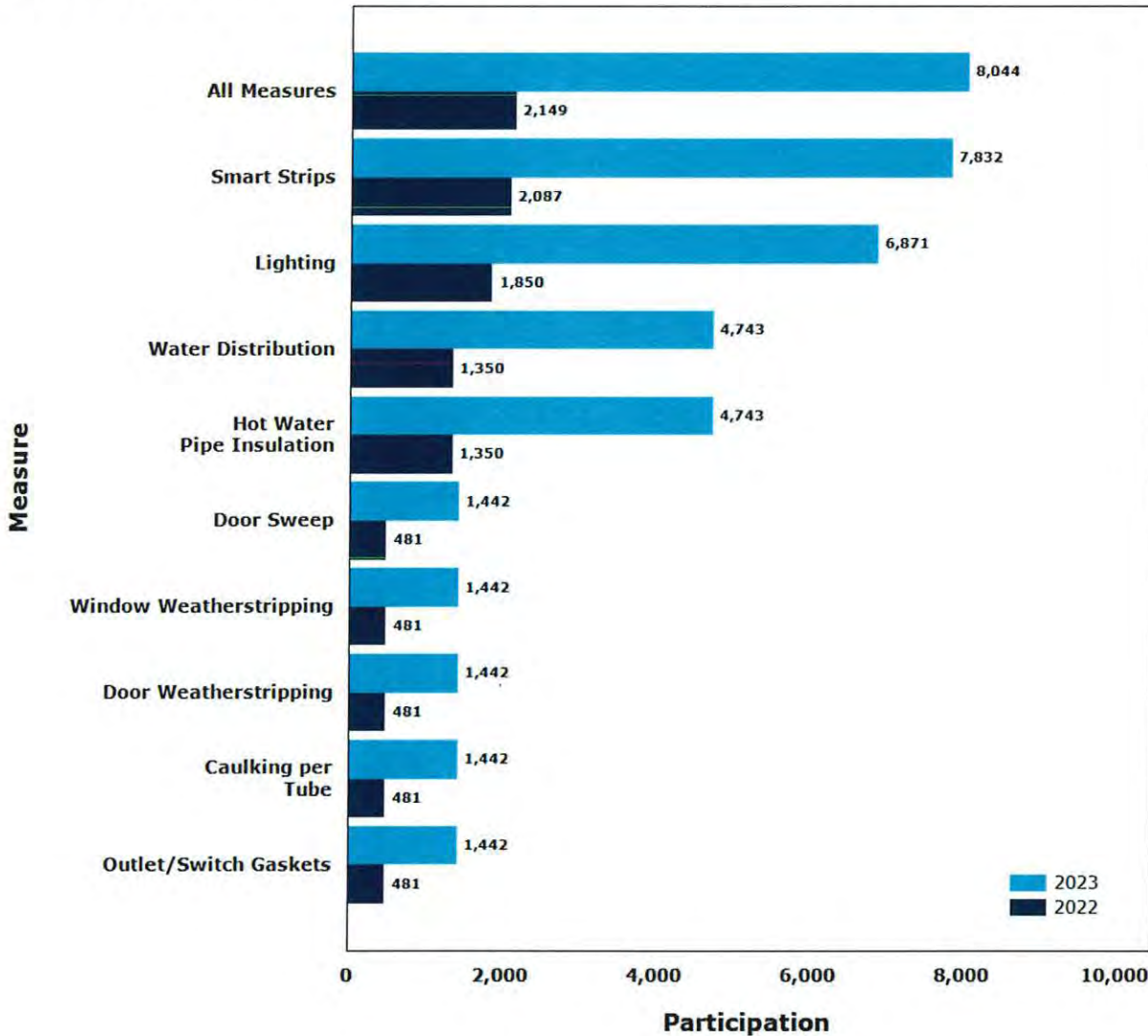


**2.13.3.3 Additional Virginia program data**

Figure 2-58 and Figure 2-59 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX J.

There were 8,044 participants in 2023. Smart strips were the most popular, followed by lighting, water distribution, hot water pipe insulation, and weatherization measures.<sup>81</sup>

**Figure 2-58. Virginia Residential Virtual Audit Program participation by measure and year**



<sup>81</sup> Note that the participant counts in Figure 2-58 and Figure 2-59 are the number of new unique customers in the “All Measures” category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-38), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The majority of the program’s gross annual energy savings can be attributed to the four most popular measures that participants received -- water distribution, followed by lighting, hot water pipe insulation and smart strips.

Figure 2-59. Virginia Residential Virtual Audit Program gross annual energy savings (MWh/year) by measure and year

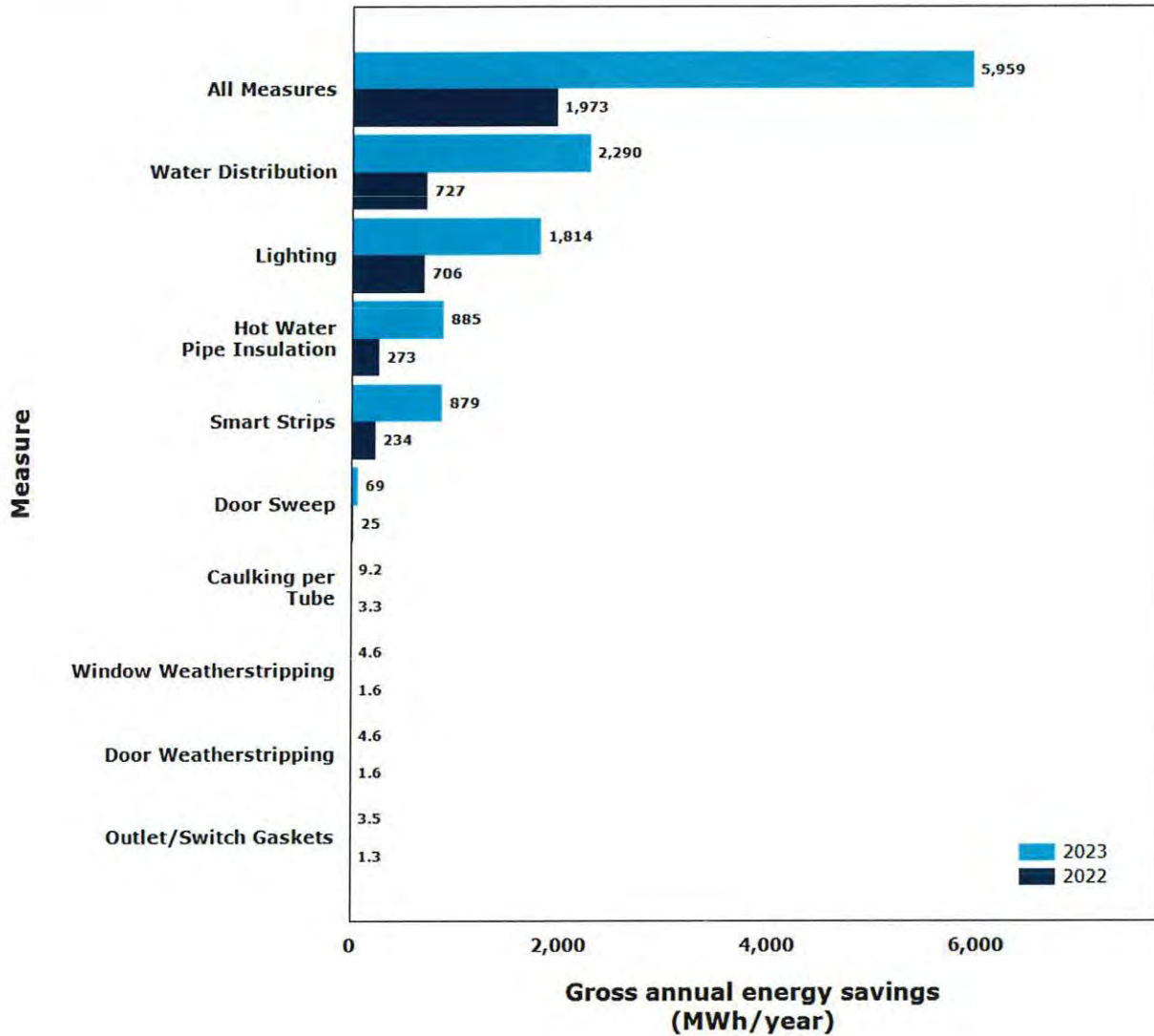




Figure 2-60 and Figure 2-61 show participation and gross annual energy savings by building type and year. In 2023, like in 2022, single-family detached homes had the most participants and gross annual energy savings.

Figure 2-60. Virginia Residential Virtual Audit Program participation by building type and year

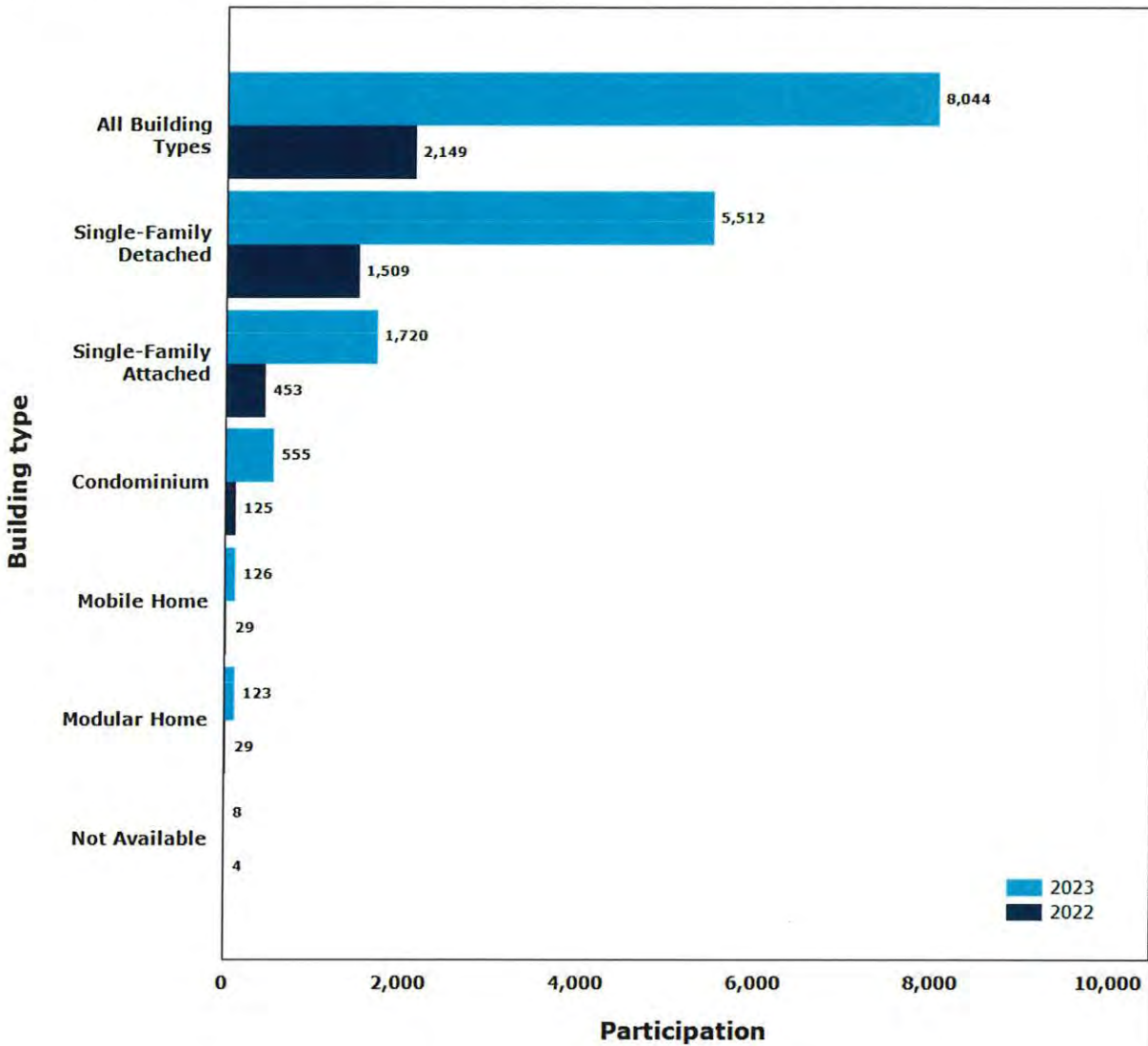
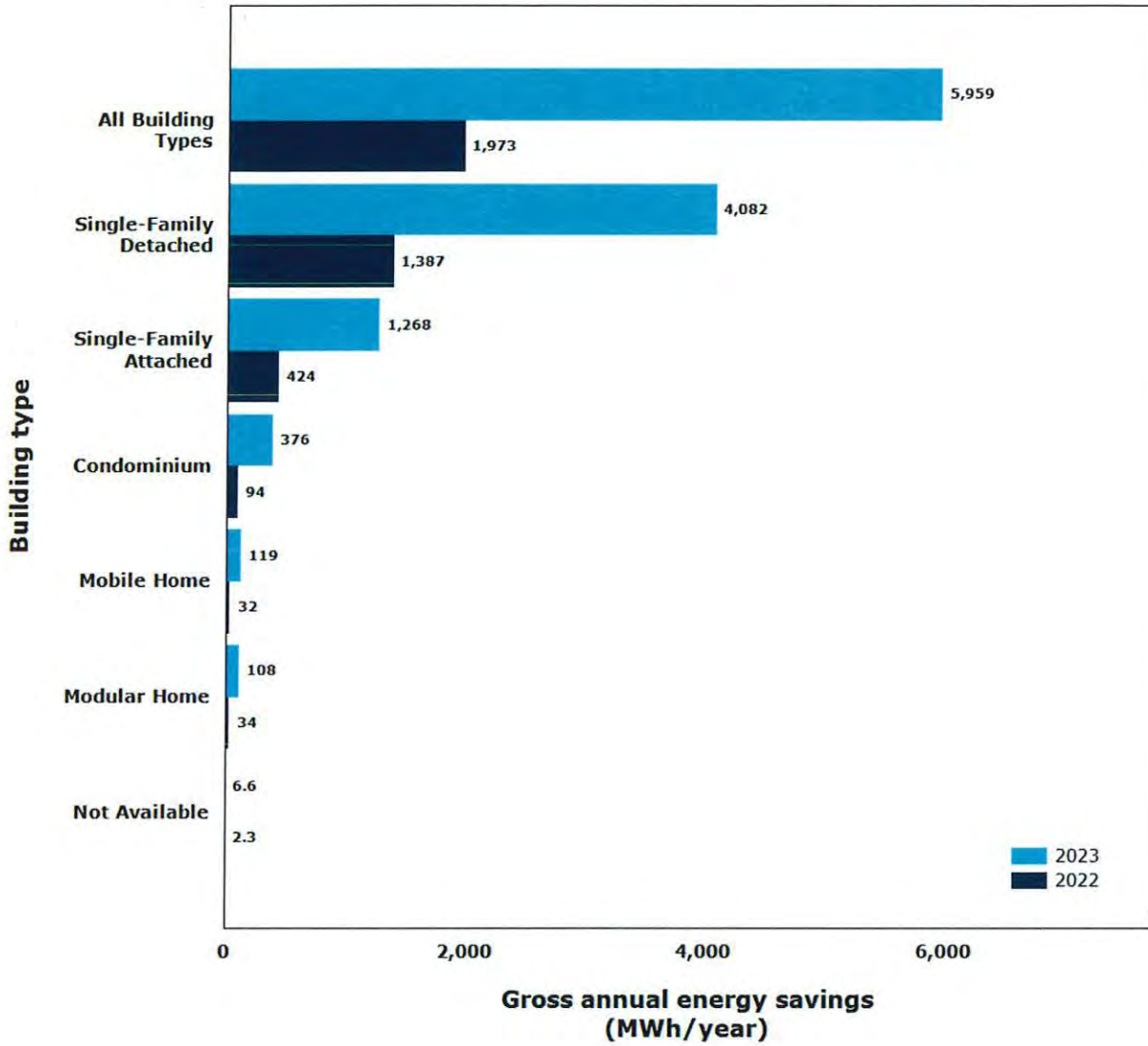




Figure 2-61. Virginia Residential Virtual Audit Program gross annual energy savings (MWh/year) by building type and year

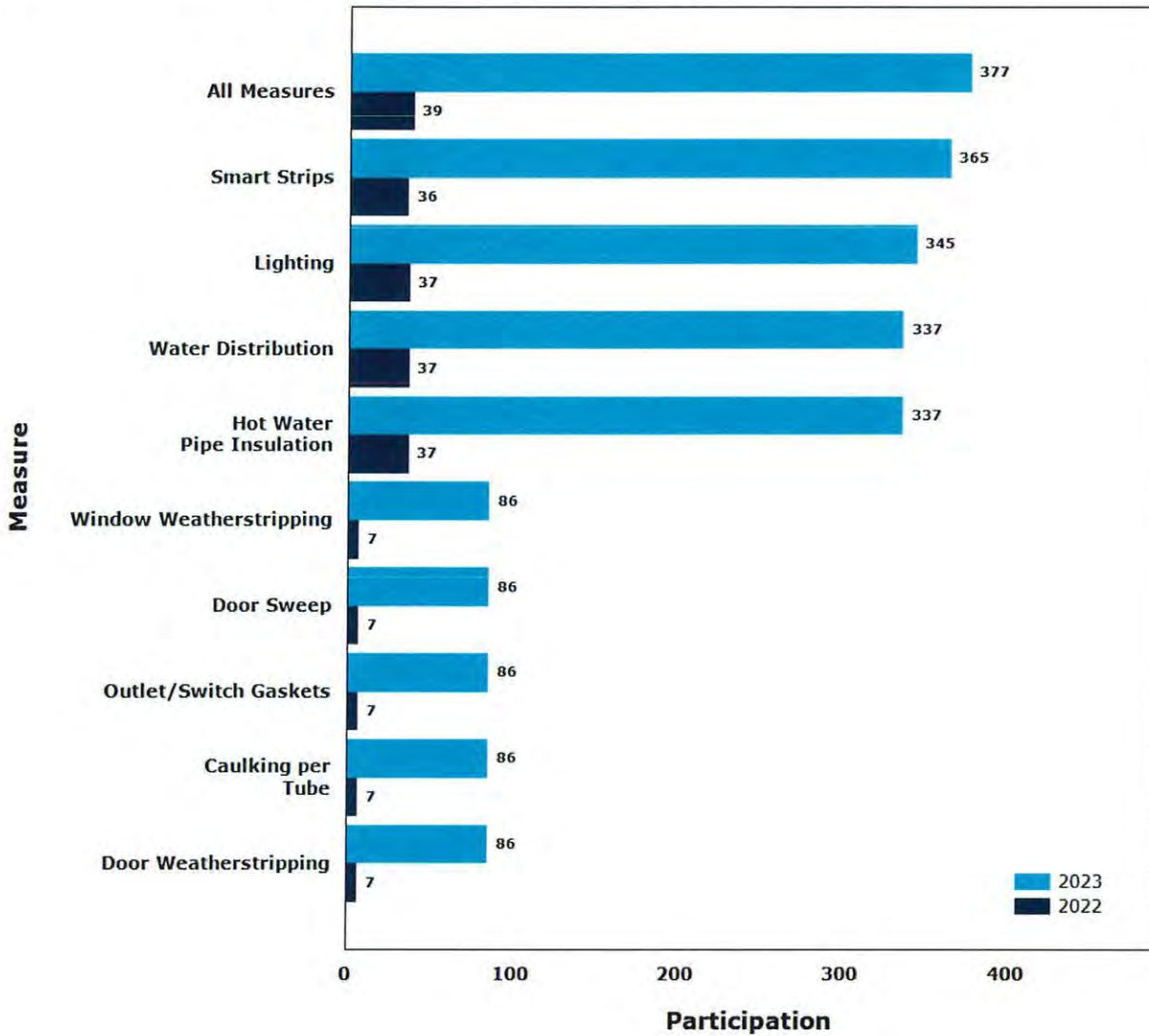




**2.13.3.4 Additional North Carolina program data**

Figure 2-62 and Figure 2-63 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.<sup>82</sup> 377 customers participated in North Carolina's program. After smart strips, the most popular measures were lighting, water distribution and hot water pipe insulation, and window weatherstripping.

**Figure 2-62. North Carolina Virtual Audit Program participation by measure and year**



<sup>82</sup> Note that the participant counts in Figure 2-62 and Figure 2-63 are the number of new unique customers in the "All Measures" category. The counts by specific measure names represent participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts presented in the Virginia program performance indicators (Table 2-39), where a participant is only counted the first time they receive a rebate. After the initial enrollment, future applications do not accrue as new participants, although their savings are included in the results.



The majority of the program's gross annual energy savings are attributed to water distribution, followed by lighting, hot water pipe insulation, and smart strips. The remainder of installed measures had relatively lower annual energy savings.

Figure 2-63. North Carolina Residential Virtual Audit Program gross annual energy savings (MWh/year) by measure and year

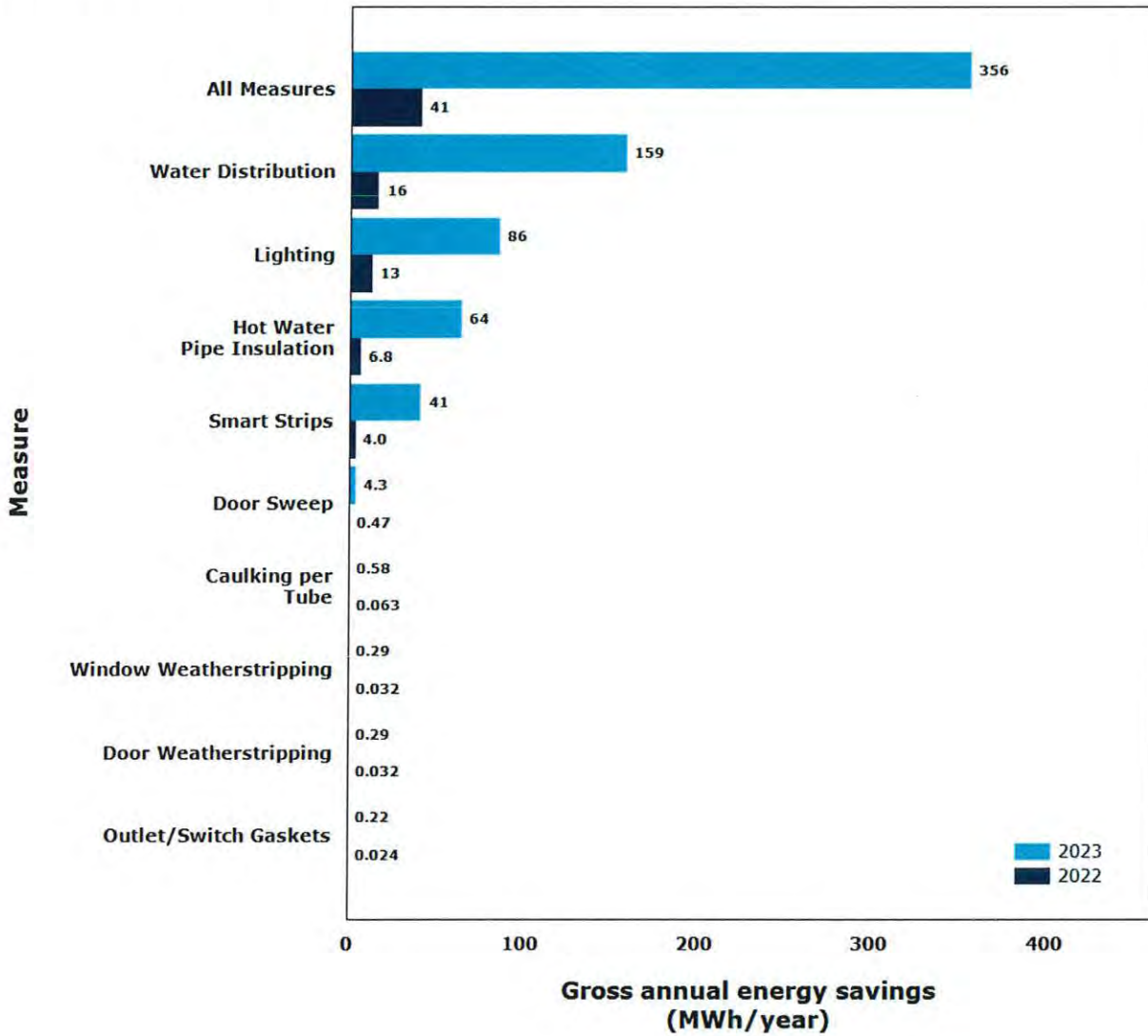






Figure 2-64 and Figure 2-65 show participation and gross annual energy savings by building type and year. In 2023, like in 2022, single-family detached homes had the most participants and gross annual energy savings.

Figure 2-64. North Carolina Residential Virtual Audit Program participation by building type and year

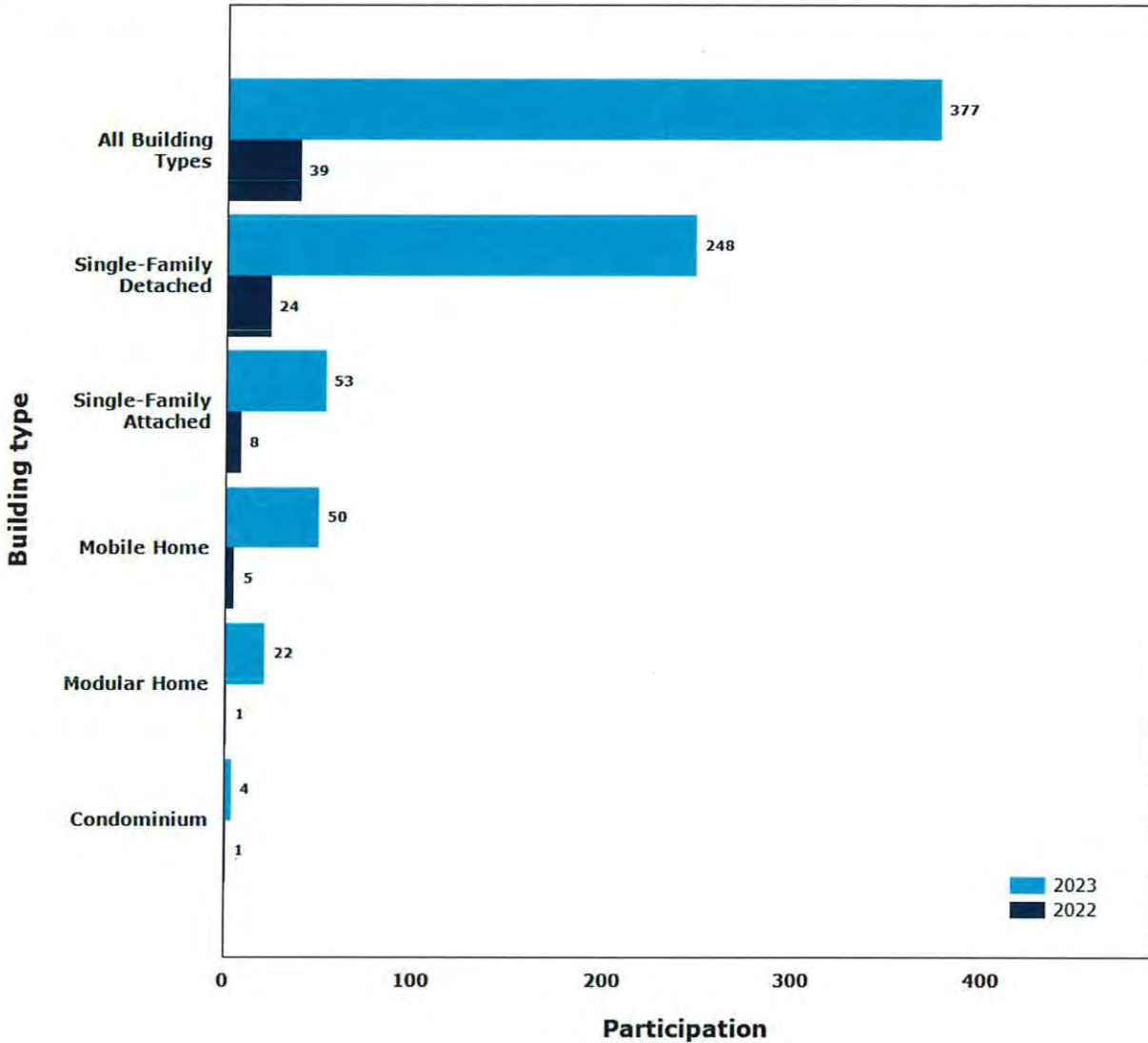
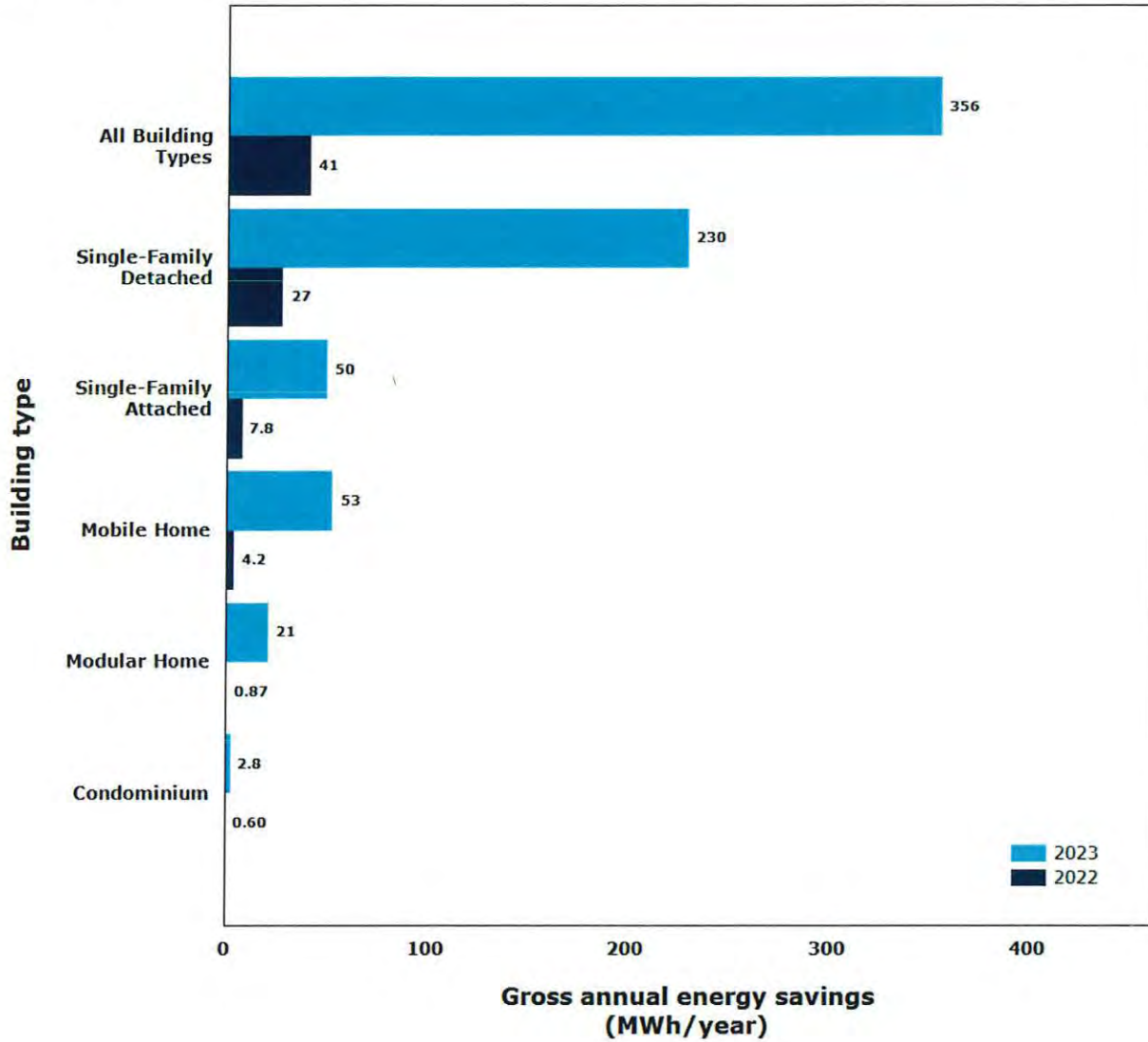




Figure 2-65. North Carolina Residential Virtual Audit Program gross annual energy savings (MWh/year) by building type and year





## 2.14 Residential Water Savings – Virginia and North Carolina

### 2.14.1 Program description

The Residential Water Energy Savings Program provides owners and occupants of single-family homes and townhomes rebates for the purchase of ENERGY STAR rated pool pumps and heat pump water heaters. Residential customers living in single-family residences or townhomes with existing heat pump electric heating and cooling are eligible for this program. To receive the rebate the rebate application must be submitted within 45 days of the equipment installation. The eligible equipment includes:

- Variable speed pool pump
- Domestic Heat pump water heater



The Virginia SCC approved this DSM Phase IX program on September 7, 2021 (Case No. PUR-2020-00274) for a five-year period from January 1, 2022, through December 31, 2026.<sup>15F83</sup> The North Carolina Utilities Commission approved this program on March 18, 2022 (Docket No. E-22, SUB 620).<sup>84</sup>

### 2.14.2 Methods and assumptions for the current reporting period

The EM&V Plan for this program is located in APPENDIX E. For the current period, the EM&V approach estimates net energy savings and demand reduction from the tracking data using methods described in the DE TRM calculations in APPENDIX F. Table 2-40 outlines Dominion Energy’s initial program planning assumptions. The savings calculations adopt the planned NTG factor until it is verified by an evaluation. The definition of participants for the program is the count of rebated heat pump water heaters and pool pumps.

**Table 2-40. Residential Water Saving Program planning assumptions**

| Assumption  | Description           |
|---|-----------------------|
| Target market   | Residential customers |
| NTG factor  | 90%                   |
| Measure life (years)  | 11.60                 |
| Gross average annual energy savings (kWh/year) per participant      | 2,187                 |
| Gross average coincident peak demand reduction (kW) per participant | 1                     |
| Net average annual energy savings (kWh/year) per participant        | 1,968                 |
| Net average coincident peak demand reduction (kW) per participant   | 1                     |
| Average rebate (\$US) per participant                               | \$356                 |

### 2.14.3 Assessment of program progress toward plan

The next subsections describe the program’s progress toward planned participants, energy savings, and demand reduction.

#### 2.14.3.1 Key Virginia program data

Table 2-41 provides performance indicator data from 2021 through 2023, in Virginia. Shaded cells are considered extraordinarily sensitive information. APPENDIX J shows performance indicators for all years and months by measure, a

<sup>83</sup> [Virginia Residential Water Saving Program Terms and Conditions.](#)

<sup>84</sup> [North Carolina Residential Water Saving Program Terms and Conditions.](#)



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comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-41. Virginia Residential Water Savings Program performance indicators (2021–2023)<sup>85</sup>**

| Category                                      | Item                                  | 2021     | 2022       | 2023        | Program total (2021–2023) |
|---|---------------------------------------|----------|------------|-------------|---------------------------|
| <b>Operations and Management Costs (\$)</b>   | Direct Rebate                         |          |            |             |                           |
|   | Direct Implementation                 |          |            |             |                           |
|   | Direct EM&V                           |          |            |             |                           |
|   | Indirect Other (Administrative)       | \$478    | \$10,722   | \$23,472    | \$34,672                  |
| <b>Total Costs (\$)</b>                       | Total <sup>86</sup>                   | \$10,197 | \$256,790  | \$347,383   | \$614,369                 |
|   | Planned                               | \$0      | \$794,394  | \$1,088,146 | \$1,882,541               |
|   | Variance                              | \$10,197 | -\$537,605 | -\$740,763  | -\$1,268,171              |
|   | Annual % of Planned                   | N/A      | 32%        | 32%         | 33%                       |
| <b>Participants</b>                           | Total (Gross)                         | 0        | 62         | 368         | 430                       |
|   | Planned (Gross)                       | 0        | 940        | 1,880       | 2,820                     |
|   | Variance                              | 0        | -878       | -1,512      | -2,390                    |
|   | Annual % of Planned (Gross)           | N/A      | 7%         | 20%         | 15%                       |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings            | 0        | 97,694     | 513,620     | 611,314                   |
|   | Realization Rate                      | N/A      | 100%       | 100%        | 100%                      |
|   | Realization Rate Adjustment           | 0        | 0          | 0           | 0                         |
|   | Adjusted Gross Savings                | 0        | 97,694     | 513,620     | 611,314                   |
|   | Net-to-Gross Ratio <sup>87</sup>      | N/A      | 90%        | 90%         | 90%                       |
|   | Net-to-Gross Adjustment               | 0        | -9,769     | -51,362     | -61,131                   |
|   | Net Adjusted Savings                  | 0        | 87,925     | 462,258     | 550,183                   |
|   | Planned Savings (Net)                 | 0        | 1,850,202  | 3,700,404   | 5,550,606                 |
|   | Annual % Toward Planned Savings (Net) | N/A      | 4.8%       | 12.5%       | 9.9%                      |
|   | Avg. Savings per Participant (Gross)  | N/A      | 1,576      | 1,396       | 1,422                     |
| Avg. Savings per Participant (Net)            | N/A                                   | 1,418    | 1,256      | 1,279       |                           |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand             | 0        | 12         | 89          | 101                       |
|   | Realization Rate                      | N/A      | 100%       | 100%        | 100%                      |
|   | Realization Rate Adjustment           | 0        | 0          | 0           | 0                         |
|   | Adjusted Gross Demand                 | 0        | 12         | 89          | 101                       |

<sup>85</sup> The sum of the individual annual values may differ from the total value due to rounding.

<sup>86</sup> Program expenditures include operations and maintenance, capital spending, and common costs. Operations and maintenance spending are separated by direct rebate, direct implementation, direct EM&V, other indirect or administrative spending. The expenditures reported in this document do not include the Company's margins.

<sup>87</sup> On the rebate application form the program implementation vendor included the question, "Did the rebate incentive offered by Dominion Energy have any influence in your decision to have the work performed?" Of the participants who responded (from program inception to the end of this reporting period), 84% answered yes at the time they filled out the rebate application. This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See APPENDIX D for methodology.



| Category                                      | Item                                     | 2021  | 2022  | 2023   | Program total (2021–2023) |
|---|--|-------|-------|--------|---------------------------|
|   | Net-to-Gross Ratio <sup>87</sup>         | N/A   | 90%   | 90%    | 90%                       |
|   | Net-to-Gross Adjustment                  | 0     | -1.2  | -8.9   | -10.1                     |
|   | Net Adjusted Demand                      | 0     | 11    | 80     | 91                        |
|   | Planned Demand (Net)                     | 0     | 441   | 881    | 1,322                     |
|   | Annual % Toward Planned Demand (Net)     | N/A   | 2.5%  | 9.0%   | 6.9%                      |
|   | Avg. Peak Demand per Participant (Gross) | N/A   | 0.20  | 0.20   | 0.20                      |
|   | Avg. Demand per Participant (Net)        | N/A   | 0.20  | 0.20   | 0.20                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand                | 0     | 16    | 103    | 118                       |
|   | Realization Rate                         | N/A   | 100%  | 100%   | 100%                      |
|   | Realization Rate Adjustment              | 0     | 0     | 0      | 0                         |
|   | Adjusted Gross Demand                    | 0     | 16    | 103    | 118                       |
|   | Net-to-Gross Ratio <sup>87</sup>         | N/A   | 90%   | 90%    | 90%                       |
|   | Net-to-Gross Adjustment                  | 0     | -1.60 | -10.30 | -11.80                    |
|   | Net Adjusted Demand                      | 0     | 14    | 92     | 107                       |
|   | Planned Demand (Net)                     | 0     | 0     | 0      | 0                         |
|   | Annual % Toward Planned Demand (Net)     | N/A   | N/A   | N/A    | N/A                       |
|   | Avg. Peak Demand per Participant (Gross) | N/A   | 0.30  | 0.30   | 0.30                      |
|   | Avg. Demand per Participant (Net)        | N/A   | 0.20  | 0.30   | 0.20                      |
| <b>Cumulative Annual Program Performance</b>  | \$Admin. per Participant (Gross)         | N/A   | \$181 | \$81   | \$81                      |
|   | \$Admin. per kWh/year (Gross)            | N/A   | \$0   | \$0.06 | \$0.06                    |
|   | \$Admin. per kW (Gross)                  | N/A   | \$914 | \$344  | \$344                     |
|   | \$EM&V per Total Costs (\$)              | 45.6% | 8.4%  | 9.0%   | 9.0%                      |
|   | \$Rebate per Participant (Gross)         | N/A   | \$307 | \$311  | \$311                     |

**2.14.3.2 Key North Carolina program data**

Table 2-42 provides performance indicator data from 2022 through 2023, in North Carolina. Shaded cells are considered extraordinarily sensitive information. APPENDIX K shows performance indicators for all years and months by measure, a comparison of program savings with usage by rate schedule, and program benefit cost scores. Cumulative gross and net savings are in APPENDIX L.

**Table 2-42. North Carolina Residential Water Savings Program performance indicators (2022–2023)<sup>85</sup>**

| Category                                    | Item                            | 2022    | 2023     | Program total (2022–2023) |
|---|---------------------------------|---------|----------|---------------------------|
| <b>Operations and Management Costs (\$)</b> | Direct Rebate                   |         |          |                           |
|   | Direct Implementation           |         |          |                           |
|   | Direct EM&V                     |         |          |                           |
|   | Indirect Other (Administrative) | \$211   | \$1,114  | \$1,324                   |
| <b>Total Costs (\$)</b>                     | <b>Total<sup>86</sup></b>       | \$5,048 | \$16,481 | \$21,529                  |



| Category                                      | Item                                     | 2022      | 2023      | Program total (2022–2023) |
|---|--|-----------|-----------|---------------------------|
|   | Planned                                  | \$20,362  | \$66,848  | \$87,209                  |
|   | Variance                                 | -\$15,314 | -\$50,367 | -\$65,681                 |
|   | Annual % of Planned                      | 25%       | 25%       | 25%                       |
| <b>Participants</b>                           | Total (Gross)                            | 0         | 11        | 11                        |
|   | Planned (Gross)                          | 60        | 120       | 180                       |
|   | Variance                                 | -60       | -109      | -169                      |
|   | Annual % of Planned (Gross)              | 0%        | 9%        | 6%                        |
| <b>Installed Energy Savings (kWh/year)</b>    | Total Gross Deemed Savings               | 0         | 14,129    | 14,129                    |
|   | Realization Rate                         | N/A       | 100%      | 100%                      |
|   | Realization Rate Adjustment              | 0         | 0         | 0                         |
|   | Adjusted Gross Savings                   | 0         | 14,129    | 14,129                    |
|   | Net-to-Gross Ratio <sup>87</sup>         | N/A       | 90%       | 90%                       |
|   | Net-to-Gross Adjustment                  | 0         | -1,413    | -1,413                    |
|   | Net Adjusted Savings                     | 0         | 12,716    | 12,716                    |
|   | Planned Savings (Net)                    | 118,098   | 236,196   | 354,294                   |
|   | Annual % Toward Planned Savings (Net)    | 0%        | 5.4%      | 3.6%                      |
|   | Avg. Savings per Participant (Gross)     | N/A       | 1,284     | 1,284                     |
|   | Avg. Savings per Participant (Net)       | N/A       | 1,156     | 1,156                     |
| <b>Installed Summer Demand Reduction (kW)</b> | Total Gross Deemed Demand                | 0         | 2.70      | 2.70                      |
|   | Realization Rate                         | N/A       | 100%      | 100%                      |
|   | Realization Rate Adjustment              | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                    | 0         | 2.7       | 2.7                       |
|   | Net-to-Gross Ratio <sup>87</sup>         | N/A       | 90%       | 90%                       |
|   | Net-to-Gross Adjustment                  | 0         | -0.30     | -0.30                     |
|   | Net Adjusted Demand                      | 0         | 2.50      | 2.50                      |
|   | Planned Demand (Net)                     | 28.1      | 56.20     | 84.40                     |
|   | Annual % Toward Planned Demand (Net)     | 0%        | 4.4%      | 3.0%                      |
|   | Avg. Peak Demand per Participant (Gross) | N/A       | 0.20      | 0.20                      |
|   | Avg. Demand per Participant (Net)        | N/A       | 0.20      | 0.20                      |
| <b>Installed Winter Demand Reduction (kW)</b> | Total Gross Deemed Demand                | 0         | 3.10      | 3.10                      |
|   | Realization Rate                         | N/A       | 100%      | 100%                      |
|   | Realization Rate Adjustment              | 0         | 0         | 0                         |
|   | Adjusted Gross Demand                    | 0         | 3.10      | 3.10                      |
|   | Net-to-Gross Ratio <sup>87</sup>         | N/A       | 90%       | 90%                       |



| Category                                     | Item                                     | 2022  | 2023   | Program total (2022–2023) |
|--|--|-------|--------|---------------------------|
|  | Net-to-Gross Adjustment                  | 0     | -0.30  | -0.30                     |
|  | Net Adjusted Demand                      | 0     | 2.80   | 2.80                      |
|  | Planned Demand (Net)                     | 0     | 0      | 0                         |
|  | Annual % Toward Planned Demand (Net)     | N/A   | N/A    | N/A                       |
|  | Avg. Peak Demand per Participant (Gross) | N/A   | 0.30   | 0.30                      |
|  | Avg. Demand per Participant (Net)        | N/A   | 0.30   | 0.30                      |
| <b>Cumulative Annual Program Performance</b> | \$Admin. per Participant (Gross)         | N/A   | \$120  | \$120                     |
|  | \$Admin. per kWh/year (Gross)            | N/A   | \$0.09 | \$0.09                    |
|  | \$Admin. per kW (Gross)                  | N/A   | \$485  | \$485                     |
|  | \$EM&V per Total Costs (\$)              | 10.1% | 11.4%  | 11.4%                     |
|  | \$Rebate per Participant (Gross)         | N/A   | \$295  | \$295                     |

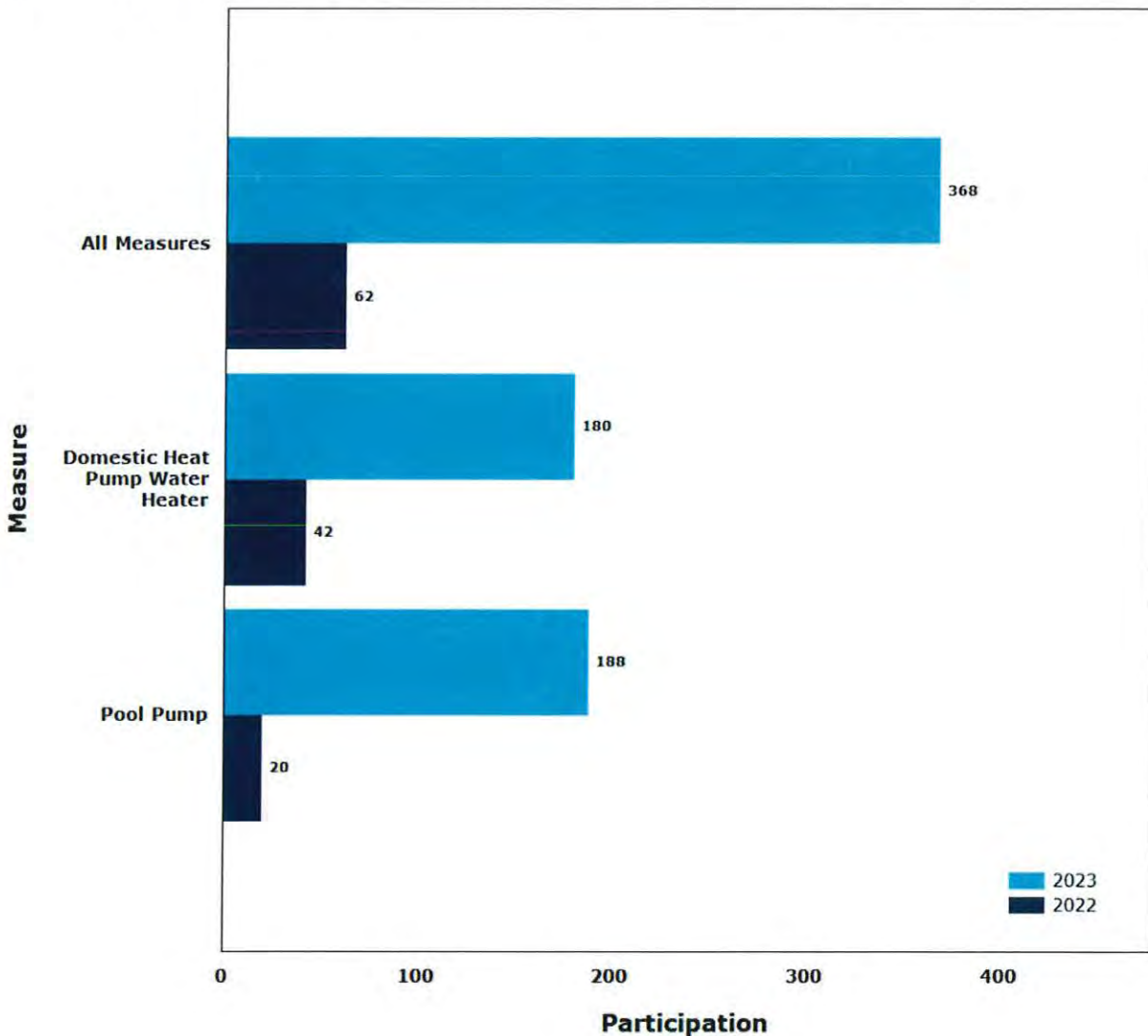


### 2.14.3.3 Additional Virginia program data

Figure 2-66 and Figure 2-67 show participation and gross annual energy savings by measure and year, in Virginia. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Figure 2-66 shows that a total of 368 heat pump water heaters and pool pumps were installed in 2023. The most frequently installed measure was variable speed pool pump, which 51% of the 2023 measures. There were 180 heat pump water heaters accounting for 49% of measures installed in 2023.

Figure 2-66. Virginia Residential Water Savings Program participation by measure and year







The pool pump measure accounted for a slightly higher portion of the gross annual energy savings in 2023, representing 56% of the total program energy saved, as shown in Figure 2-67.

Figure 2-67. Virginia Residential Water Savings Program gross annual energy savings (MWh/year) by measure and year

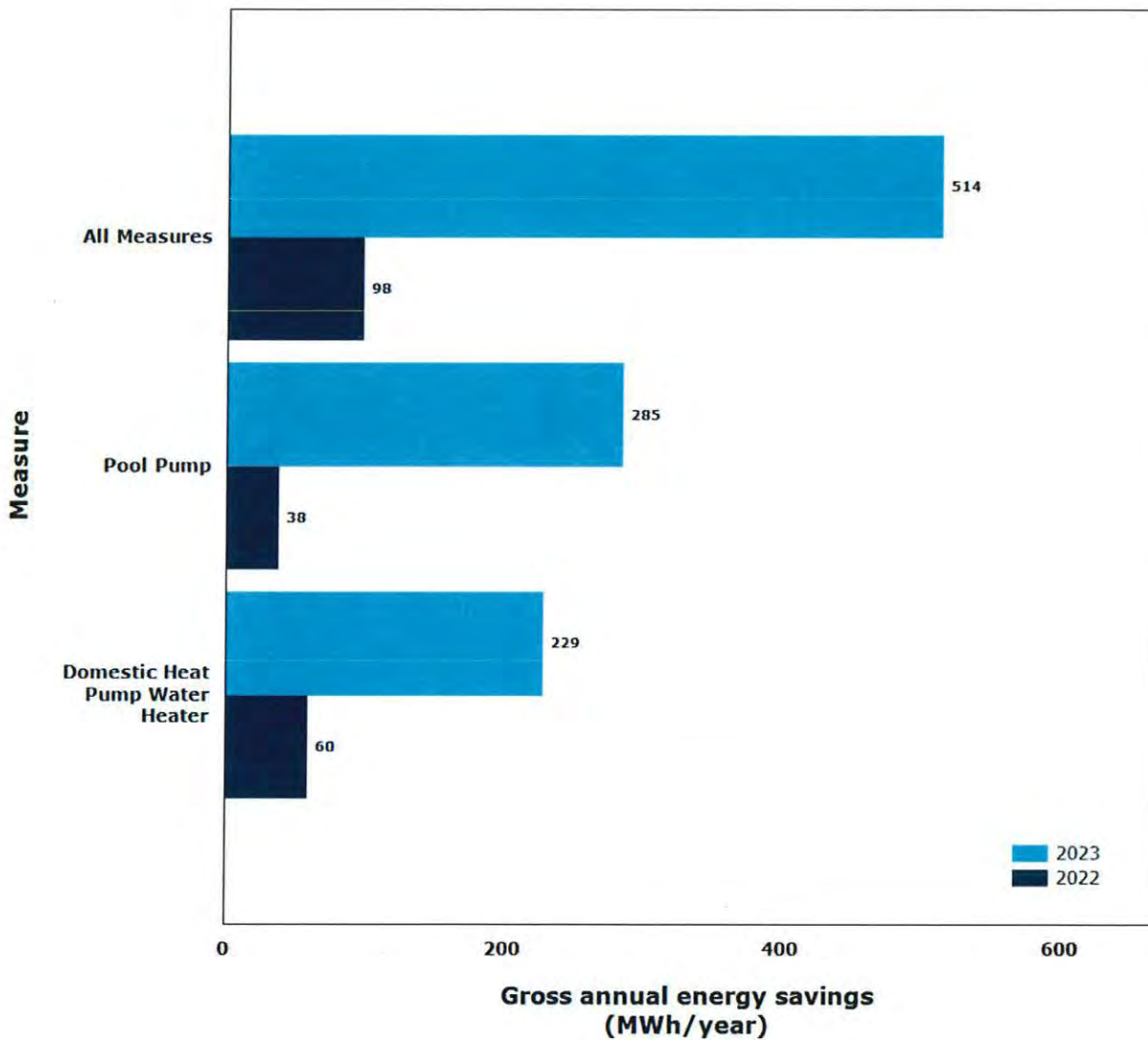
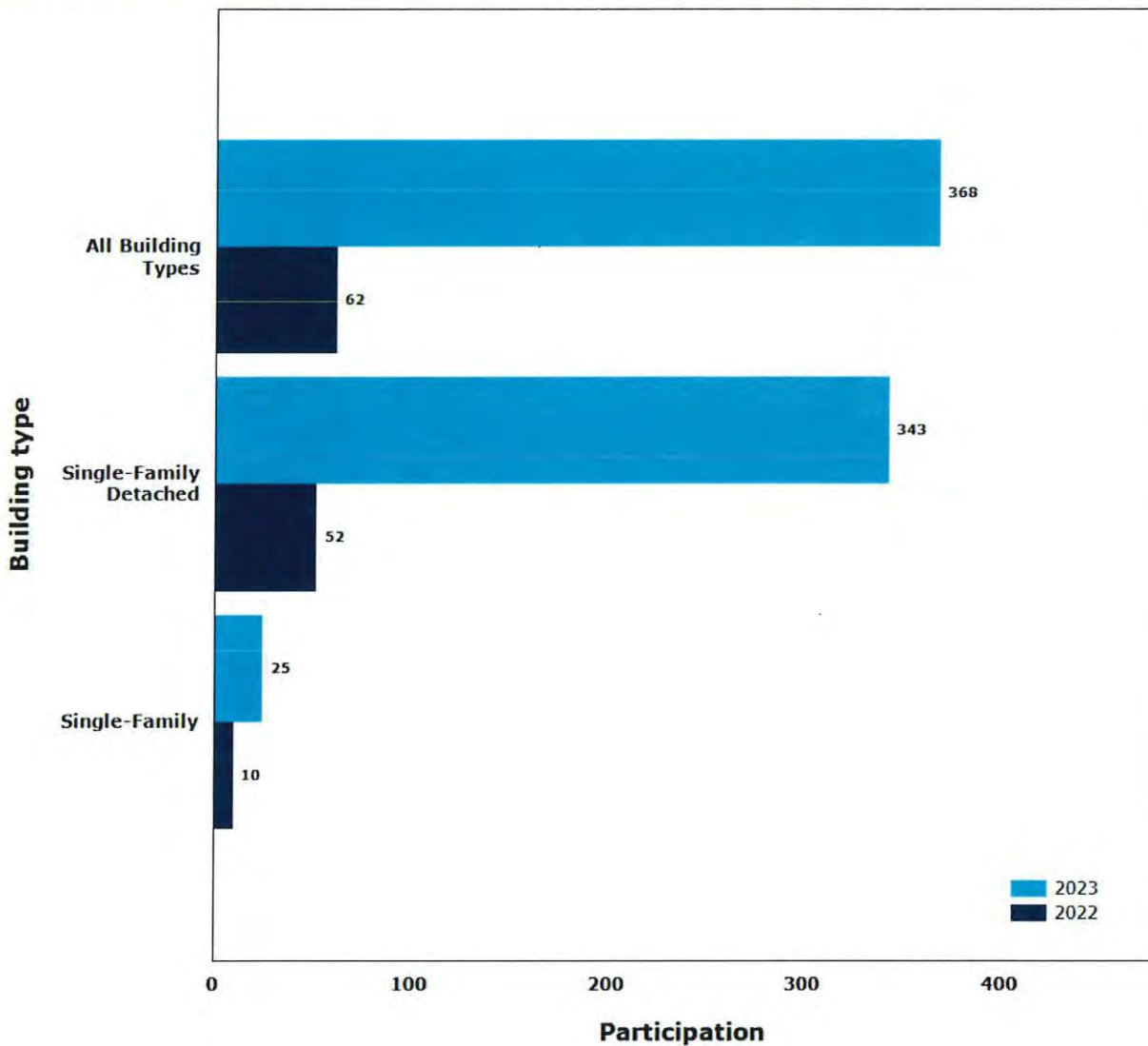




Figure 2-68 and Figure 2-69 show participation and gross annual energy savings by building type and year. As shown in Figure 2-68, the pool pumps and heat pump water heaters were installed primarily in single-family detached homes (93%) and other single-family homes (7%).

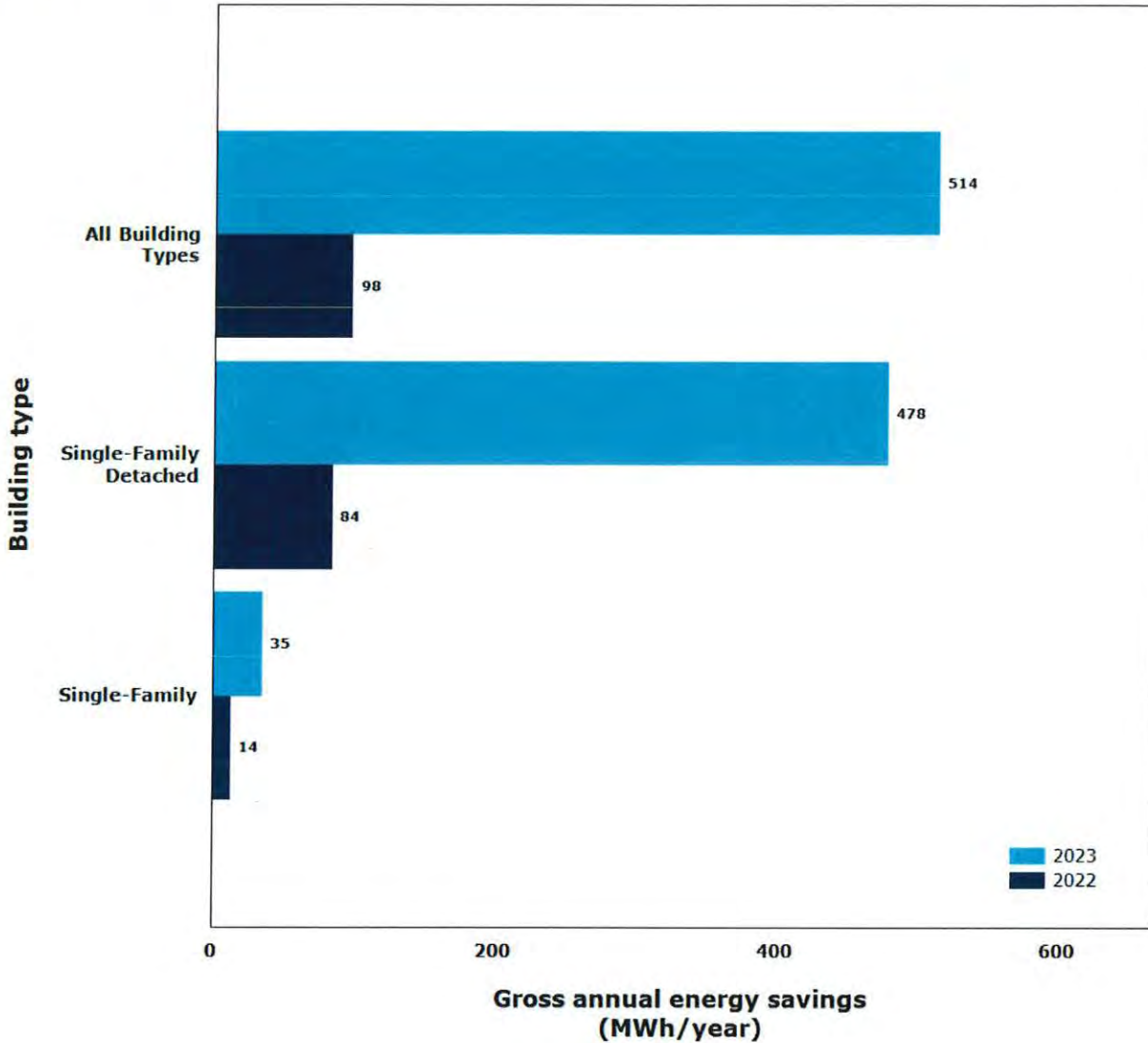
Figure 2-68. Virginia Residential Water Savings Program participation by building type and year





The majority of the 2023 gross annual energy savings were primarily from the installation of pool pumps and heat pump water heaters in single-family detached homes (93% of the total energy saved), as shown in Figure 2-69.

Figure 2-69. Virginia Residential Water Savings Program gross annual energy savings (MWh/year) by building type and year





### 2.14.3.4 Additional North Carolina program data

Figure 2-70 and Figure 2-71 show participation and gross annual energy savings by measure and year, in North Carolina. Other detailed program participation and savings at the measure level are provided in APPENDIX K.

Slightly over half of the measures that were installed were pool pumps (64%), representing over half (53%) of the gross annual energy savings. The remaining measures (36%) and gross annual energy savings (47%) were from heat pump water heaters. All of the pool pumps and heat pump water heaters were installed in single-family detached homes.

Figure 2-70. North Carolina Residential Water Savings Program participation by measure and year

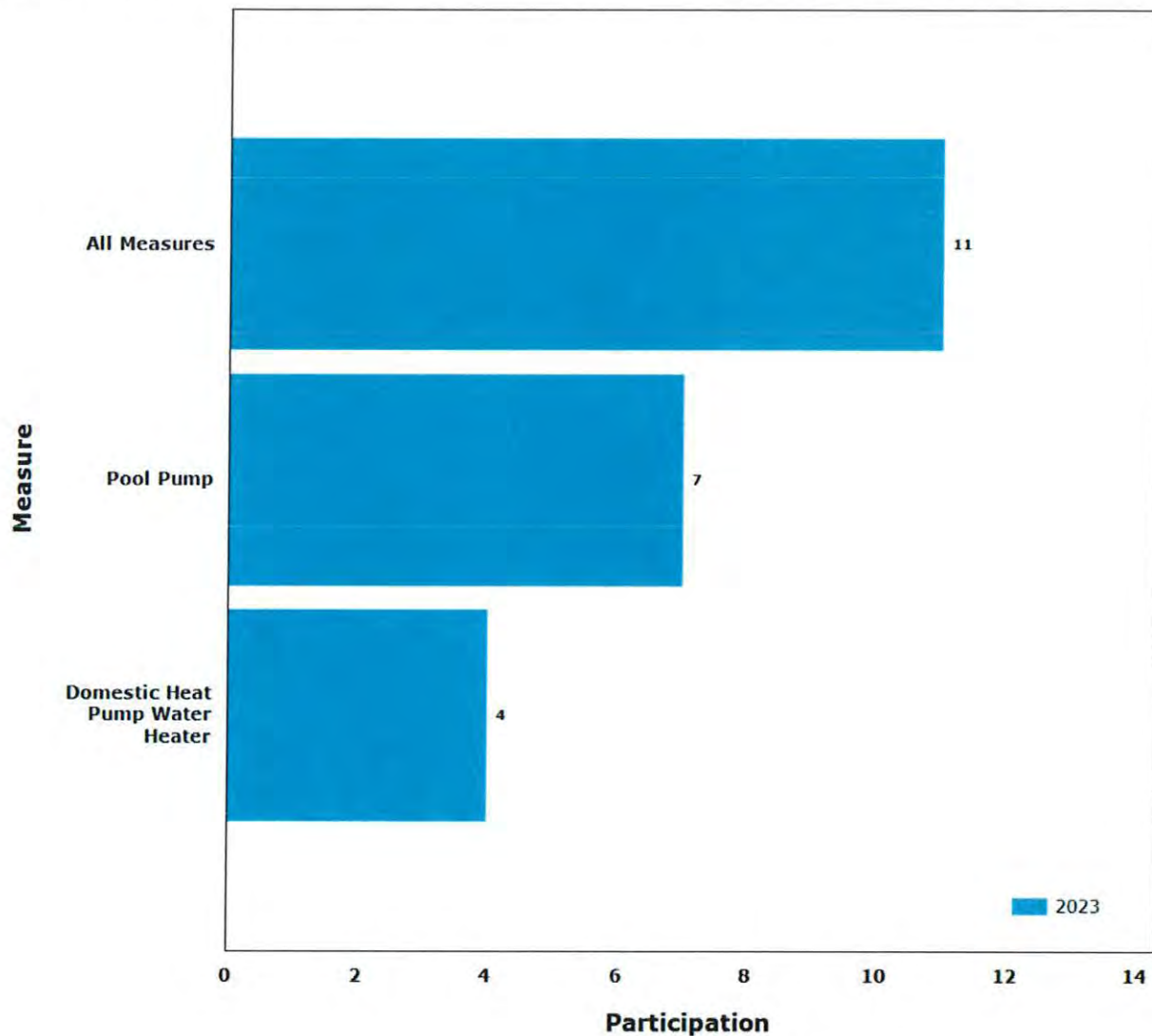




Figure 2-71. North Carolina Residential Water Savings Program gross annual energy savings (MWh/year) by measure and year

