



Evaluation, Measurement, and Verification Report for Virginia Electric and Power Company (Dominion Energy)

CASE NO. PUR-2021-00247 (VIRGINIA)
DOCKET NO. E-22, SUB 645 (NORTH CAROLINA)

PUBLIC VERSION
VOLUME 1 of 6

June 15, 2023
Prepared by DNV Energy Insights USA Inc. (DNV)





Table of contents

| | |
|---|----|
| EXECUTIVE SUMMARY | 1 |
| 1 INTRODUCTION..... | 26 |
| 1.1 Reporting compliance requirements in Virginia | 26 |
| 1.2 Reporting compliance requirements in North Carolina | 27 |
| 1.3 Study approach | 27 |
| 1.4 Report structure | 28 |
| 1.5 Programs covered in this report | 29 |
| 1.7 Adjustments and/or corrections to prior years' calculations | 42 |
| 2 ENERGY EFFICIENCY – RESIDENTIAL EFFICIENT PRODUCTS | 43 |
| 2.1 Residential Efficient Products Marketplace – Virginia and North Carolina | 45 |
| 2.2 Residential Electric Vehicle Energy Efficiency and Demand Response – Virginia | 47 |
| 2.3 Residential Kits – Virginia and North Carolina | 48 |
| 2.4 Residential Thermostat Purchase and WeatherSmart – Virginia and North Carolina | 50 |
| 2.5 Residential Smart Home – Virginia and North Carolina | 52 |
| 2.6 Residential Water Savings – Virginia and North Carolina | 54 |
| 3 ENERGY EFFICIENCY – RESIDENTIAL ENERGY SERVICES | 56 |
| 3.1 Residential Appliance Recycling – Virginia and North Carolina | 58 |
| 3.2 Residential Home Energy Assessment – Virginia and North Carolina | 60 |
| 3.3 Residential Customer Engagement – Virginia | 62 |
| 3.4 Residential Manufactured Housing – Virginia | 63 |
| 3.5 Residential Multifamily – Virginia | 64 |
| 3.6 Residential Home Retrofit – Virginia and North Carolina | 65 |
| 3.7 Residential Virtual Energy Audit – Virginia and North Carolina | 67 |
| 4 ENERGY EFFICIENCY – RESIDENTIAL NEW CONSTRUCTION | 69 |
| 4.1 Residential New Construction – Virginia | 71 |
| 5 ENERGY EFFICIENCY – INCOME AND AGE QUALIFYING..... | 72 |
| 5.1 Residential HVAC Health and Safety – Virginia | 74 |
| 5.2 Residential Income and Age Qualifying Energy Efficiency – Virginia and North Carolina | 75 |
| 5.3 Income and Age Qualifying Solar Program – Virginia | 77 |
| 6 ENERGY EFFICIENCY – NON-RESIDENTIAL GENERAL PRODUCTS & SERVICES..... | 78 |
| 6.1 Non-Residential Prescriptive – Virginia and North Carolina | 80 |
| 6.2 Non-Residential Prescriptive Enhanced – Virginia and North Carolina | 82 |
| 6.3 Non-Residential Heating and Cooling Efficiency – Virginia and North Carolina | 84 |
| 6.4 Non-Residential Lighting Systems & Controls – Virginia and North Carolina | 86 |
| 6.5 Non-Residential Small Manufacturing – Virginia and North Carolina | 88 |
| 6.6 Non-Residential Window Film – Virginia and North Carolina | 90 |
| 6.7 Non-Residential Midstream Energy Efficiency Products – Virginia | 92 |
| 7 ENERGY EFFICIENCY – NON-RESIDENTIAL TARGETED SECTORS | 93 |
| 7.1 Non-Residential Multifamily – Virginia | 96 |
| 7.2 Non-Residential New Construction – Virginia and North Carolina | 97 |



| | | |
|-------------|--|-----|
| 7.3 | Non-Residential Small Business Improvement Enhanced – Virginia and North Carolina | 99 |
| 7.4 | Non-Residential Agricultural Energy Efficiency – Virginia | 101 |
| 8 | ENERGY EFFICIENCY – NON-RESIDENTIAL AUTOMATION & CONTROLS | 102 |
| 8.1 | Non-Residential Office – Virginia and North Carolina | 104 |
| 8.2 | Non-Residential Building Automation System – Virginia and North Carolina | 106 |
| 8.3 | Non-Residential Building Optimization – Virginia and North Carolina | 108 |
| 8.4 | Non-Residential Engagement – Virginia and North Carolina | 110 |
| 9 | PEAK SHAVING | 112 |
| 9.1 | Residential Smart Cooling Rewards – Virginia and North Carolina | 114 |
| 9.2 | Non-Residential Distributed Generation – Virginia | 116 |
| 9.3 | Residential Electric Vehicle Rewards – Virginia | 117 |
| 9.4 | Residential Smart Thermostat Rewards – Virginia and North Carolina | 118 |
| APPENDIX A. | REGULATORY COMPLIANCE MATRIX..... | A-1 |
| APPENDIX B. | DETAILED EM&V REPORT | B-1 |
| APPENDIX C. | GLOSSARY OF TERMS..... | C-1 |
| APPENDIX D. | METHODOLOGIES AND DETAILED AVOIDED EMISSIONS, NON-ENERGY IMPACTS, AND BILL SAVINGS RESULTS | D-1 |
| APPENDIX E. | EVALUATION, MEASUREMENT, AND VERIFICATION PLANS | E-1 |
| APPENDIX F. | DOMINION ENERGY TECHNICAL REFERENCE MANUAL (FORMERLY STEP MANUAL) 2022 F-1 | |
| APPENDIX G. | RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE PROGRAM IMPACT EVALUATION..... | G-1 |
| APPENDIX H. | RESIDENTIAL HOME ENERGY ASSESSMENT PROGRAM IMPACT EVALUATION..... | H-1 |
| APPENDIX I. | RESIDENTIAL CUSTOMER ENGAGEMENT PROGRAM IMPACT EVALUATION..... | I-1 |
| APPENDIX J. | RESIDENTIAL NEW CONSTRUCTION PROGRAM BASELINE STUDY | J-1 |
| APPENDIX K. | NON-RESIDENTIAL LIGHTING END USE BASELINE, GROSS AND NET IMPACT, AND PERSISTENCE STUDY..... | K-1 |
| APPENDIX L. | RESIDENTIAL SMART COOLING REWARDS PROGRAM IMPACT EVALUATION | L-1 |
| APPENDIX M. | NON-RESIDENTIAL DISTRIBUTED GENERATION PROGRAM IMPACT EVALUATION | M-1 |
| APPENDIX N. | SMART THERMOSTAT REWARDS PROGRAM IMPACT EVALUATION..... | N-1 |
| APPENDIX O. | PROGRAM PERFORMANCE INDICATOR TABLES FOR VIRGINIA 2010 – 2022 | O-1 |
| APPENDIX P. | PROGRAM PERFORMANCE INDICATOR TABLES FOR NORTH CAROLINA 2010 – 2022..... | P-1 |
| APPENDIX Q. | GROSS AND NET PERSISTENT SAVINGS TABLES | Q-1 |



Data Reflective of 2023 EM&V report and actuals for 2022

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 | DSM %** |
|--------------|------|-----------------|---------------|------------|----------|-----------|-----------|------------|--------------|---------|
| | 2022 | 852,892 | 1.25% | 776,335 | 4,154 | - | - | - | 58,754 | 1.23% |
| | 2023 | 1,705,783 | 2.50% | 951,859 | 75,741 | 128,063 | - | - | 59,855 | 1.8% |
| | 2024 | 2,558,675 | 3.75% | 1,052,964 | 149,344 | 321,505 | 6,321 | - | 60,955 | 2.3% |
| | 2025 | 3,411,567 | 5.00% | 1,052,341 | 214,222 | 508,467 | 17,694 | 33,662 | 62,055 | 2.8% |

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 | DSM %** |
|----------------|------|-----------------|---------------|------------|----------|-----------|-----------|------------|--------------|---------|
| | 2022 | 852,892 | 1.25% | 1,220,054 | 4,781 | - | - | - | 58,754 | 1.9% |
| | 2023 | 1,705,783 | 2.50% | 1,414,902 | 87,751 | 154,418 | - | - | 59,855 | 2.5% |
| | 2024 | 2,558,675 | 3.75% | 1,518,443 | 176,763 | 372,158 | 6,321 | - | 60,955 | 3.1% |
| | 2025 | 3,411,567 | 5.00% | 1,516,260 | 255,015 | 570,460 | 17,694 | 40,228 | 62,055 | 3.6% |

** DSM Phase 12 assumes same forecast as DSM Phase 9 only additional years in the future All values exclude NC and non-Jurisdictional DSM reductions



DEV DSM Dashboard



2022 at a Glance

Total Programs

| | |
|--------------|----|
| Residential: | 20 |
| Business: | 15 |

**Note - Phase X Programs Launch '23*

Total Participants

| | |
|--------------------------------|-----------|
| Residential: | 333,301 |
| EE Products - Bulbs/Appliances | 5,163,385 |

| | |
|-----------|-------|
| Business: | 1,407 |
|-----------|-------|

kWh Saved - Portfolio

| | |
|--------|-------------|
| Net: | 149,325,787 |
| Gross: | 294,191,074 |

** Annualized Savings*

kW Saved - Portfolio

| | |
|--------|---------|
| Net: | 264,813 |
| Gross: | 404,780 |

Progress Towards \$870M GTSA Goal

\$712.9 M Proposed

Progress Towards VCEA Savings Targets

As a percentage of 2019 sales

| | | |
|----------------------------------|------------|--------|
| 2022 Net MWh | 780,508 | 1.23%* |
| 2022 Gross MWh | 1,224,868 | 1.9%* |
| 2019 VA Jurisdictional Sales MWh | 68,231,332 | |

**Includes 58,754 MWh for Opt Out Customers*

Annual Spend

Portfolio

\$65.2 M

Annual Spend

IAQ Programs

\$18.5 M

** Includes \$12.4M for HB2789 HVAC / Solar*

Total Customer Bill Savings

| | |
|--------------|--------------|
| Residential: | \$28,837,668 |
| Business: | \$5,689,109 |

DSM Related Emission

| | |
|--|---------|
| Reductions (Metric Tons CO ₂) | |
| Total | 460,589 |

Energy Saved Since Inception

Portfolio

| | |
|------------|-----------|
| Net MWh: | 5,592,994 |
| Gross MWh: | 8,192,582 |

EVALUATION, MEASUREMENT, AND VERIFICATION REPORT

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

Case No. PUR-2021-00247 (Virginia)

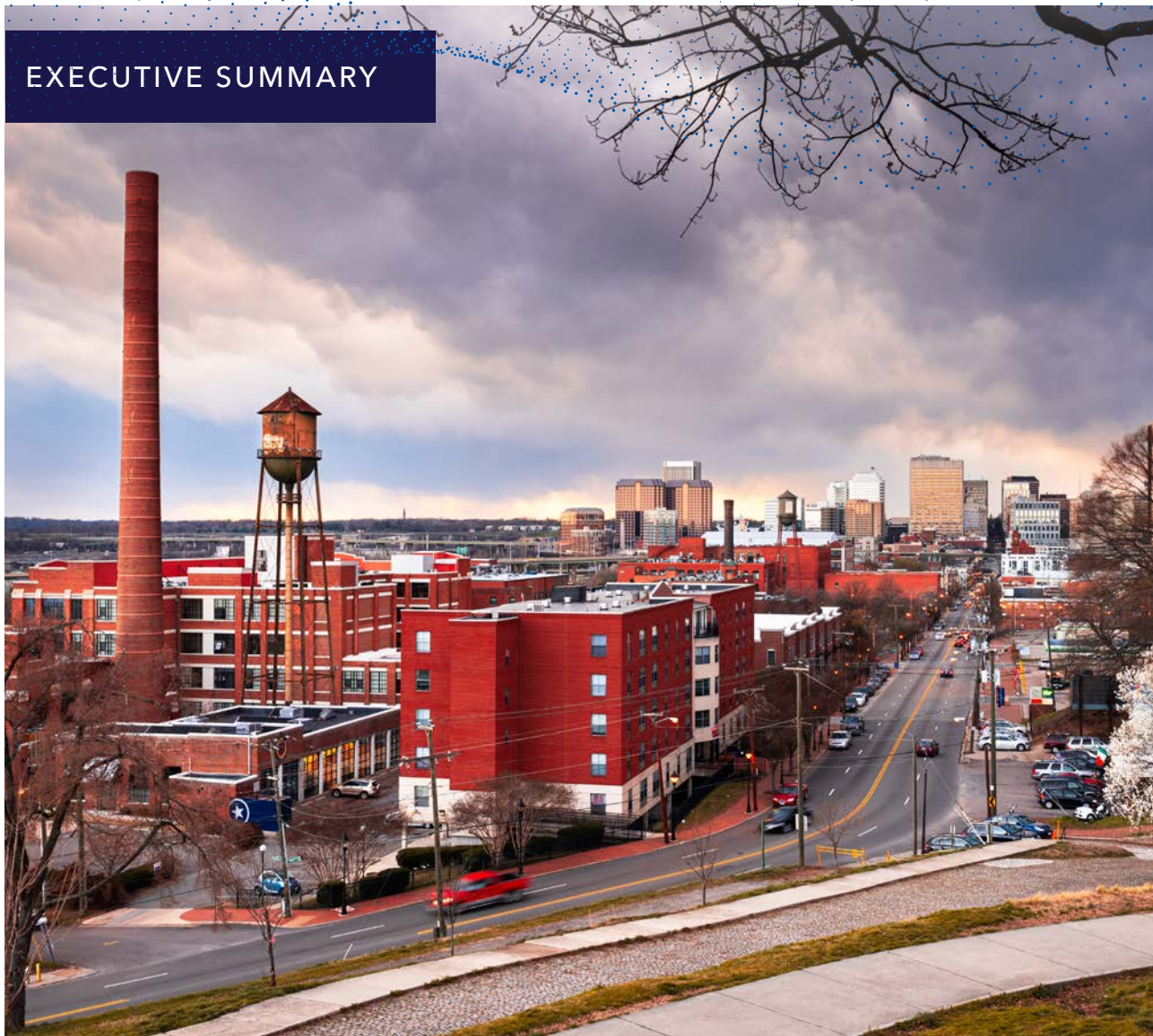
Docket No. E-22, Sub 645 (North Carolina)

Public version

June 15, 2023

Prepared by DNV Energy Insights USA Inc. (DNV)

EXECUTIVE SUMMARY



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),¹ presents the key performance indicators of the Company's Phases I-X demand-side management (DSM) programs in Virginia and North Carolina. It also reports DSM program impacts for 36 active energy efficiency and demand response programs through December 31, 2022.

The 2022 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.²

The number of DSM programs that Dominion Energy offers has more than tripled in the past five years since the passage of the Grid Transformation and Security Act and the Virginia Clean Economy Act. To validate the performance of this growth, the Company has rigorously studied the programs as required and requested by regulators and stakeholders.

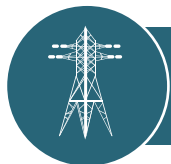
As a portfolio of programs, the Company's active Phases I-IX programs spent \$70 million in 2022.³ They achieved approximately 299 GWh/year of gross annual energy savings and 152 GWh/year of net annual energy savings in 2022 as a system, reaching more than 460,000 program participants and incentivizing more than 5.2 million LEDs through stores.



Gross energy savings toward Virginia Clean Economy Act (VCEA): **1,225 GWh**



Net energy savings toward VCEA: **781 GWh⁴**



Spending toward Grid Transformation and Security Act (GTSA) **\$199M⁵**



Projected spending toward GTSA: **\$713M⁶**



Spending toward VCEA income and age qualifying 15% target: **\$15M or 8% of the \$199M⁷**

¹ Hereinafter, Virginia Electric and Power Company will be referred to as "Dominion Energy" or "the Company" and may also include North Carolina operations depending on the context.

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

³ Expenditures are from 2022, and include O&M, capital spending, and common costs. O&M spending includes direct rebate, direct implementation, direct EM&V, and other indirect or administrative spending.

⁴ As of year end 2022.

⁵ As of year end 2022; includes O&M, capital spending, common costs, and margin.

⁶ Based on programs filed with or approved by SCC as of year end 2022; includes O&M, capital spending, common costs, and margin.

⁷ As of year end 2022; includes O&M, capital spending, common costs, and margin. The 15% target does not include House Bill 2789.



In 2022, Dominion Energy ran more than 36 energy efficiency and demand response programs in 8 Long-Term Plan segments:

- Residential Energy Services
- Residential Efficient Products
- Residential New Construction
- Income & Age Qualifying
- Non-Residential General Products & Services
- Non-Residential Targeted Sector
- Non-Residential Building Automation & Controls
- Demand Response

\$35M/year

in bill savings for customers

\$13M/year

in O&M NEI benefits for customers

461k
metric tons CO₂
avoided/year

45M gal/year
of water savings

10,404 GWh
of lifetime savings

DNV completed impact evaluations and in-depth studies for many of the portfolio's high-impact programs, including:

- Residential Efficient Products Marketplace Program impact evaluation
- Residential Home Energy Assessment impact evaluation
- Residential Customer Engagement impact evaluation
- Residential New Construction baseline study
- Residential AC Cycling impact evaluation
- Residential Thermostat Reward (Demand Response) impact evaluation
- Non-Residential Distributed Generation impact evaluation
- Non-residential lighting end-use baseline, impact, net-to-gross, and persistence studies for the following programs:
 - Non-Residential Lighting Systems & Controls (DSM Phase III)
 - Non-Residential Small Business Improvement (DSM Phase V)
 - Non-Residential Lighting Systems & Controls (DSM Phase VII)
 - Non-Residential Small Business Improvement Enhanced (DSM Phase VIII)

Key metrics

This report presents performance indicators for Dominion Energy’s DSM programs in Virginia and North Carolina in compliance with major legal requirements in both states. The key metrics summarized are:



OFFICIAL COPY

JUN 15 2023



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 the number of participants served by the program.



Savings

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) are reported for energy efficiency programs. 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. Its planning winter peak is assumed to be 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 at the Company’s planning condition.



VCEA indicators

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

Active programs

The Company's active programs (Phases I through IX) reported in the main body of this report are shown in Figure 1.



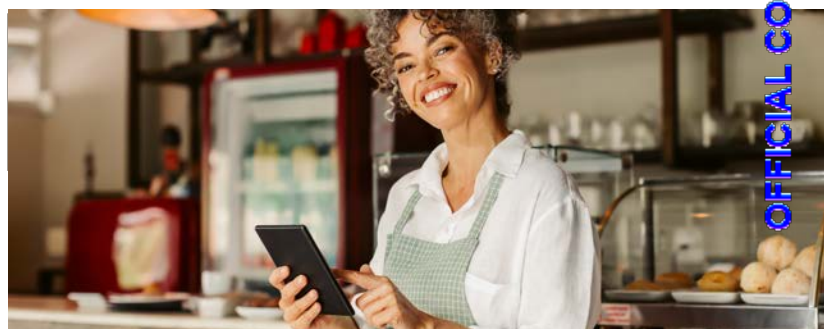
OFFICIAL COPY

JUN 15 2023

Figure 1. Active Phases I-IX demand-side management programs reported in 2022



Table 1 through Table 9 below summarize the key required metrics. The active programs are organized within the categories outlined in the Company's Long-Term Plan (LTP).⁸



OFFICIAL COPY

Table 1. Virginia program avoided costs in Program Year 2022

| Avoided Costs | | | Avoided T&D Demand Costs | | | | | |
|------------------|-----------------------|--|--|---------------------------------------|---------------------------------------|--|---------------------------------------|---------------------------------------|
| | | | Transmission | | | Distribution | | |
| Average (\$/kWh) | Capacity (\$/kW-year) | Reserve Margin Forecast Pool Requirement (FPR) (%) | 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 (%) |
| \$0.03 | \$31.94 | 10% | \$31.95 | 0% | 100% | \$18.14 | 50% | 50% |

JUN 15 2023

⁸The Company's LTP was filed in Case No. PUR-2021-00247 as part of Direct Testimony of the Company's Witness Terry Fry, Schedule 1. <https://scc.virginia.gov/DocketSearch#caseDocs/142611>.



Table 2. Virginia summary program metrics - participation and financial of residential and income and age qualified programs (cumulative through December 31, 2022)^{9, 10, 11, 12}

| Program | Program Operation Years | Participation | | Financial | | | | | |
|---|---|---------------------------|---------------------------|--------------------|-----------------------------------|--------------|-------------------------|------------------------------|-----------|
| | | Participants (in 1,000's) | No. Measures (in 1,000's) | Expenditures (\$M) | Administrative Expenditures (\$M) | Budget (\$M) | Spending as % of Budget | Program cost per participant | |
| Residential Energy Services | Appliance Recycling | 4 | 5.03 | 5.03 | \$1.78 | \$0.08 | \$6.52 | 27% | \$355 |
| | Home Energy Assessment | 4 | 19 | 1,039 | \$16 | \$0.73 | \$16 | 98% | \$835 |
| | Customer Engagement | 3 | 303 | 303 | \$3.93 | \$0.17 | \$3.84 | 102% | \$13 |
| | Manufactured Housing | 3 | 0.01 | 0.05 | \$1.32 | \$0.06 | \$2.86 | 46% | \$219,920 |
| | Multifamily | 3 | 1.64 | 10 | \$1.43 | \$0.06 | \$3.95 | 36% | \$869 |
| | Home Retrofit | 3 | 0.15 | 0.55 | \$1.78 | \$0.08 | \$3.18 | 56% | \$11,914 |
| | Virtual Energy Audit | 2 | 2.15 | 84 | \$0.67 | \$0.03 | \$4.21 | 16% | \$312 |
| Residential Efficient Products | Efficient Products Marketplace | 4 | 14,810 | 14,810 | \$31 | \$1.39 | \$30.57 | 102% | \$2.10 |
| | Electric Vehicle Energy Efficiency and Demand Response Kits | 3 | 0.30 | 0.30 | \$0.57 | \$0.03 | \$0.74 | 78% | \$1,920 |
| | Smart Home | 2 | 0.02 | 0.09 | \$0.73 | \$0.03 | \$2.05 | 36% | \$48,657 |
| | Water Savings | 2 | 0.06 | 0.06 | \$0.27 | \$0.01 | \$0.79 | 34% | \$4,306 |
| | Thermostat Purchase and WeatherSmart | 3 | 11 | 12 | \$2.25 | \$0.10 | \$2.37 | 95% | \$196 |
| | New Construction | 3 | 3.58 | 3.58 | \$3.92 | \$0.17 | \$8.78 | 45% | \$1,096 |
| Residential Sub-Total | | 15,212 | 16,376 | \$68.35 | \$3.05 | \$90 | 76% | \$4.49 | |
| Income & Age Qualifying | HVAC Health and Safety | 3 | 7.00 | 12 | \$21 | \$0.94 | \$22 | 98% | \$3,046 |
| | Income and Age Qualifying Energy Efficiency | 2 | 4.73 | 28 | \$5.87 | \$0.25 | \$7.43 | 79% | \$1,240 |
| | Income and Age Qualifying Solar | 2 | 0.01 | 0.01 | \$0.21 | \$0.01 | \$11 | 1.97% | \$29,589 |
| Income and Age Qualifying Home Improvement Sub-Total | | 12 | 40 | \$27 | \$1.19 | \$40 | 69% | \$2,334 | |

⁹ Participants represent enrollees from program inception through December 31, 2022, 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 Thermostat Purchase and WeatherSmart program is measured by thermostats purchased and households with controlled thermostats, respectively.

¹⁰ Number of measures represent the quantity of measures installed, serviced, or implemented at the units that incentives are issued from program inception through December 31, 2022 in thousands.

¹¹ Expenditures are from program inception through December 31, 2022 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.

¹² Administrative expenditures represent those from program inception through December 31, 2022.

Table 3. Virginia summary program metrics - participation and financial of non-residential programs (cumulative through December 31, 2022)

| Program | Program Operation Years | Participation | | Financial | | | | | |
|---|--------------------------------------|---------------------------|---------------------------|--------------------|-----------------------------------|---------------|-------------------------|------------------------------|-----------------|
| | | Participants (in 1,000's) | No. Measures (in 1,000's) | Expenditures (\$M) | Administrative Expenditures (\$M) | Budget (\$M) | Spending as % of Budget | Program cost per participant | |
| Non-Residential General Products & Services | Prescriptive | 6 | 2.84 | 522 | \$33 | \$1.68 | \$29 | 115% | \$11,712 |
| | Prescriptive Enhanced | 2 | 0.37 | 15 | \$5.69 | \$0.24 | \$4.23 | 134% | \$15,535 |
| | Heating and Cooling Efficiency | 4 | 0.13 | 1.75 | \$2.82 | \$0.13 | \$6.83 | 41% | \$22,574 |
| | Lighting Systems & Controls | 4 | 0.99 | 129 | \$11 | \$0.50 | \$8.95 | 121% | \$11,012 |
| | Small Manufacturing | 4 | 0.02 | 0.20 | \$1.68 | \$0.07 | \$4.57 | 37% | \$83,766 |
| | Window Film | 4 | 0.07 | 102 | \$1.15 | \$0.05 | \$1.64 | 70% | \$16,641 |
| | Midstream Energy Efficiency Products | 3 | 0.12 | 0.64 | \$1.38 | \$0.06 | \$3.79 | 36% | \$11,499 |
| Non-Residential Targeted Sector | Small Business Improvement Enhanced | 3 | 0.90 | 16 | \$5.95 | \$0.26 | \$7.22 | 82% | \$6,621 |
| | Agricultural Energy Efficiency | 2 | 0.00 | 15 | \$0.49 | \$0.02 | \$0.91 | 54% | \$163,950 |
| | New Construction | 3 | 0.00 | 0.00 | \$1.11 | \$0.05 | \$2.29 | 48% | N/A |
| Non-Residential Building Automation & Controls | Multifamily | 3 | 0.01 | 0.35 | \$0.40 | \$0.02 | \$0.90 | 45% | \$80,803 |
| | Office | 4 | 0.08 | 0.92 | \$2.10 | \$0.09 | \$4.28 | 49% | \$25,883 |
| | Building Optimization | 2 | 0.002 | 0.10 | \$0.51 | \$0.02 | \$1.10 | 46% | \$255,199 |
| | Building Automation System | 2 | 0.00 | 0.00 | \$0.43 | \$0.02 | \$0.96 | 45% | N/A |
| | Engagement | 2 | 0.00 | 0.00 | \$0.61 | \$0.03 | \$1.54 | 40% | N/A |
| Non-Residential Sub-Total | | | 5.51 | 803 | \$68 | \$3.24 | \$78 | 88% | \$12,408 |
| Total | | | 15,229 | 17,219 | \$164 | \$7.48 | \$208 | 79% | \$11 |



Table 4. Virginia summary program metrics - benefit cost ratios of residential and income and age qualified programs (cumulative through December 31, 2022)¹³

| Program | | Benefit Cost Ratios | | | | Filing Year |
|---------------------------------------|--|---------------------|---------|-------|------|-------------|
| | | Participant | Utility | TRC | RIM | |
| Residential | | | | | | |
| Residential Energy Services | Appliance Recycling | 19.22 | 0.98 | 0.90 | 0.22 | 2023 |
| | Home Energy Assessment | 25.06 | 8.46 | 5.94 | 0.35 | 2023 |
| | Customer Engagement | 12.87 | 1.80 | 1.41 | 0.40 | 2023 |
| | Manufactured Housing | 1.48 | 0.12 | 0.11 | 0.09 | 2023 |
| | Multifamily | 1.48 | 0.66 | 0.35 | 0.26 | 2023 |
| | Home Retrofit | 7.05 | 2.48 | 1.92 | 0.44 | 2023 |
| | Virtual Energy Audit | 61.15 | 4.07 | 8.08 | 0.26 | 2023 |
| Residential Efficient Products | Efficient Products Marketplace | ++ | 15.83 | 18.74 | 0.27 | 2023 |
| | Electric Vehicle Energy Efficiency and Demand Response | 0.66 | 0.11 | 0.06 | 0.08 | 2023 |
| | Kits | ++ | 0.45 | 2.03 | 0.17 | 2023 |
| | Smart Home | 1.54 | 0.35 | 0.21 | 0.15 | 2023 |
| | Water Savings | 4.98 | 1.22 | 1.04 | 0.25 | 2023 |
| | Thermostat Purchase and WeatherSmart | 3.72 | 1.34 | 0.89 | 0.38 | 2023 |
| Residential New Construction | New Construction | 3.33 | 2.09 | 1.21 | 0.40 | 2023 |
| Residential Demand Response | Smart Cooling Rewards | ++ | 0.42 | 1.00 | 0.42 | 2021 |
| | Electric Vehicle Rewards | 136.42 | 1.31 | 2.22 | 1.31 | 2019 |
| | Smart Thermostat Rewards | 9.37 | 0.47 | 0.59 | 0.46 | 2023 |
| | Water Savings Demand Response | 4.99 | 1.79 | 1.60 | 0.33 | 2020 |
| Income and Age Qualifying | | | | | | |
| Income & Age Qualifying | HVAC Health and Safety | 2.34 | 0.29 | 0.37 | 0.18 | 2023 |
| | Income and Age Qualifying Energy Efficiency | ++ | 0.73 | 0.73 | 0.27 | 2023 |
| | Income and Age Qualifying Solar | ++ | 0.20 | 0.20 | 0.13 | 2023 |

¹³ B/C ratios are forward-looking and incorporate the results from this EM&V report, with the exception of the Smart Cooling Rewards, Residential Electric Vehicle Reward, and Residential Water Savings Demand Response. 2022 was the last year that the Smart Cooling Rewards program was open to enrollment; therefore, it has no forward-looking B/C ratios. The Residential Electric Vehicle Reward and Residential Water Demand Response programs have not yet enrolled customers through year end 2022. The most recent B/C ratios for all three programs were presented in Case No. PUR-2022-00210. See Appendix O and Appendix P for a complete listing of each program's historic B/C scores since the initial program approval filings.



Table 5. Virginia summary program metrics - benefit cost ratios of non-residential programs (cumulative through December 31, 2022)¹⁴

| Program | Benefit Cost Ratios | | | | Filing Year | |
|---|--------------------------------------|---------|-------|-------|-------------|------|
| | Participant | Utility | TRC | RIM | | |
| Non-Residential | | | | | | |
| Non-Residential General Products & Services | Prescriptive | 1.08 | 0.20 | 0.15 | 0.14 | 2020 |
| | Prescriptive Enhanced | 4.88 | 2.21 | 2.21 | 0.62 | 2023 |
| | 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 |
| | Small Manufacturing | 20.59 | 6.16 | 5.76 | 0.48 | 2023 |
| | Window Film | 2.97 | 0.80 | 0.59 | 0.32 | 2023 |
| | Midstream Energy Efficiency Products | 1.62 | 3.92 | 1.68 | 1.11 | 2023 |
| Non-Residential Targeted Sector | Small Business Improvement Enhanced | 2.62 | 0.76 | 0.60 | 0.29 | 2023 |
| | Agricultural Energy Efficiency | 1.10 | 0.21 | 0.16 | 0.15 | 2023 |
| | New Construction | 2.84 | 1.21 | 1.20 | 0.50 | 2019 |
| | Multifamily | 4.76 | 1.77 | 1.39 | 0.41 | 2023 |
| Non-Residential Building Automation & Controls | Office | 10.55 | 1.46 | 1.56 | 0.30 | 2023 |
| | Building Optimization | 17.88 | 6.61 | 5.95 | 0.65 | 2023 |
| | Building Automation System | 7.91 | 5.83 | 4.92 | 1.27 | 2020 |
| | Engagement | ++ | 1.90 | 3.07 | 0.85 | 2020 |
| Non-Residential Demand Response | Distributed Generation | ++ | 0.86 | 2.56 | 0.82 | 2023 |

¹⁴ B/C ratios are forward-looking and incorporate the results from this EM&V report, with the exception of the Non-Residential New Construction, Non-Residential Building Automation, and Non-Residential Customer Engagement programs. All three programs had not enrolled customers as of year end 2022. Therefore, their most recent B/C ratios were presented in Case No. PUR-2022-00210. See Appendix O for a complete listing of each program’s historic B/C scores since the initial program approval filings.



Table 6. Virginia summary program metrics - energy impacts of residential and income and age qualified programs (cumulative through December 31, 2022)

| Program | Energy Impacts | | | | | | | | |
|---|--|---------------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|-------------|
| | Gross Impacts | | | | Net Impacts | | | | |
| | 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) | |
| Residential Energy Services | Appliance Recycling | 3,591 | 6,982 | 28,739 | 0.54 | 2,155 | 4,189 | 17,243 | 0.32 |
| | Home Energy Assessment | 40,230 | 53,204 | 502,980 | 2.85 | 11,357 | 13,253 | 141,991 | 0.83 |
| | Customer Engagement | 111,682 | 101,814 | 113,652 | 0.00 | 13,741 | 12,056 | 14,068 | 0.00 |
| | Manufactured Housing | 1.23 | 1.11 | 15 | 0.00 | 1.10 | 1.00 | 13 | 0.00 |
| | Multifamily | 429 | 324 | 10,962 | 0.11 | 386 | 291 | 9,866 | 0.10 |
| | Home Retrofit | 335 | 304 | 7,204 | 0.10 | 302 | 273 | 6,484 | 0.09 |
| | Virtual Energy Audit | 1,973 | 600 | 27,038 | 0.16 | 1,184 | 360 | 16,223 | 0.10 |
| Residential Efficient Products | Efficient Products Marketplace | 443,638 | 739,516 | 7,360,182 | 41 | 252,747 | 458,307 | 4,193,557 | 23 |
| | Electric Vehicle Energy Efficiency and Demand Response | 40 | 26 | 396 | 0.00 | 32 | 21 | 317 | 0.00 |
| | Kits | 6,883 | 5,880 | 41,391 | 0.60 | 4,130 | 3,528 | 24,835 | 0.36 |
| | Smart Home | 8.09 | 1.78 | 50 | 0.00 | 6.87 | 1.51 | 43 | 0.00 |
| | Water Savings | 98 | 14 | 1,156 | 0.01 | 88 | 13 | 1,041 | 0.01 |
| | Thermostat Purchase and WeatherSmart | 3,275 | 2,369 | 21,375 | 0.50 | 2,689 | 1,896 | 17,100 | 0.47 |
| Residential New Construction | New Construction | 7,101 | 4,996 | 161,789 | 3.17 | 6,178 | 4,346 | 140,756 | 2.76 |
| Residential Sub-Total | | 619,282 | 916,033 | 8,276,930 | 49 | 294,995 | 498,536 | 4,583,537 | 28 |
| Income & Age Qualifying | HVAC Health and Safety | 2,341 | 2,073 | 30,780 | 0.39 | 1,872 | 1,658 | 24,624 | 0.32 |
| | Income and Age Qualifying Energy Efficiency | 3,096 | 1,093 | 63,727 | 0.69 | 2,477 | 874 | 50,982 | 0.55 |
| | Income and Age Qualifying Solar | 35 | 2.29 | 763 | 0.01 | 28 | 1.83 | 610 | 0.01 |
| Income and Age Qualifying Home Improvement Sub-Total | | 5,471 | 3,168 | 95,270 | 1.10 | 4,377 | 2,534 | 76,216 | 0.88 |

OFFICIAL COPY

JUN 15 2023



Table 7. Virginia summary program metrics - energy impacts of non-residential programs (cumulative through December 31, 2022)

| Program | Energy Impacts | | | | | | | | |
|--|--|---------------------------------------|-------------------------------------|--|--|-------------------------------------|-----------------------------------|--|-----------|
| | Gross Impacts | | | | Net Impacts | | | | |
| | 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) | |
| Non-Residential General Products & Services | Prescriptive | 82,173 | 191,312 | 526,765 | 17 | 41,761 | 104,720 | 267,505 | 12 |
| | Prescriptive Enhanced | 8,848 | 932 | 86,689 | 5.60 | 7,963 | 839 | 78,020 | 5.04 |
| | Heating and Cooling Efficiency | 13,237 | 8,941 | 198,577 | 3.28 | 9,266 | 6,259 | 139,004 | 2.29 |
| | Lighting Systems & Controls | 68,319 | 111,966 | 695,668 | 9.80 | 38,122 | 62,477 | 388,183 | 4.50 |
| | Small Manufacturing | 4,998 | 1,396 | 61,644 | 0.61 | 4,498 | 1,256 | 55,479 | 0.54 |
| | Window Film | 510 | 813 | 5,104 | 0.08 | 408 | 650 | 4,084 | 0.06 |
| | Midstream Energy Efficiency Products | 1,690 | 438 | 32,751 | 2.04 | 1,521 | 394 | 29,476 | 1.83 |
| Non-Residential Targeted Sector | Small Business Improvement Enhanced | 7,549 | 6,130 | 77,044 | 1.53 | 6,622 | 5,373 | 67,597 | 1.19 |
| | Agricultural Energy Efficiency | 4,981 | 2,012 | 298,905 | 0.79 | 4,831 | 1,952 | 289,938 | 0.77 |
| | New Construction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Multifamily | 166 | 6.28 | 1,408 | 0.02 | 149 | 5.65 | 1,267 | 0.02 |
| Non-Residential Building Automation & Controls | Office | 5,552 | 3,050 | 38,875 | 0.07 | 4,997 | 2,745 | 34,987 | 0.06 |
| | Building Optimization | 1,798 | 129 | 8,994 | 0.05 | 1,618 | 116 | 8,095 | 0.04 |
| | Building Automation System | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Engagement | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Non-Residential Sub-Total | | 199,821 | 327,126 | 2,032,424 | 41 | 121,757 | 186,787 | 1,363,633 | 29 |
| Total | | 824,574 | 1,246,327 | 10,404,624 | 91 | 421,130 | 687,857 | 6,023,386 | 58 |



Table 8. Virginia summary program metrics - other impacts of residential and income and age qualified programs (cumulative through December 31, 2022)

| Program | Other Impacts | | | | |
|---|--|--|---------------------|---------------------------|-------------|
| | Bill Savings (\$M/year) | Carbon Emissions Avoided (Metric Tons CO ₂ /yr) | O&M NEIs (\$M/year) | Water Savings (Mgal/year) | |
| Residential Energy Services | Appliance Recycling | \$0.18 | 2,073 | \$0.00 | 0.00 |
| | Home Energy Assessment | \$1.58 | 23,405 | \$3.34 | 2.62 |
| | Customer Engagement | \$6.47 | 66,336 | \$0.00 | 0.00 |
| | Manufactured Housing | \$0.00 | 0.71 | \$0.00 | 0.00 |
| | Multifamily | \$0.05 | 247 | \$0.15 | 0.00 |
| | Home Retrofit | \$0.01 | 192 | \$0.00 | 0.01 |
| | Virtual Energy Audit | \$0.24 | 1,158 | \$0.32 | 6.57 |
| Residential Efficient Products | Efficient Products Marketplace | \$18 | 235,126 | \$8.32 | 30.52 |
| | Electric Vehicle Energy Efficiency and Demand Response | \$0.00 | 23 | \$0.00 | 0.00 |
| | Kits | \$0.43 | 4,158 | \$0.09 | 2.43 |
| | Smart Home | \$0.00 | 4.84 | \$0.00 | 0.00 |
| | Water Savings | \$0.01 | 57 | \$0.00 | 0.00 |
| | Thermostat Purchase and WeatherSmart | \$0.22 | 1,911 | \$0.00 | 0.00 |
| Residential New Construction | New Construction | \$0.65 | 4,158 | \$0.00 | 0.00 |
| Residential Sub-Total | | \$28 | 338,849 | \$12.22 | 42 |
| Income & Age Qualifying | HVAC Health and Safety | \$0.12 | 1,331 | -\$0.01 | 0.00 |
| | Income and Age Qualifying Energy Efficiency | \$0.39 | 1,801 | \$0.04 | 1.99 |
| | Income and Age Qualifying Solar | \$0.00 | 21 | \$0.00 | 0.00 |
| Income and Age Qualifying Home Improvement Sub-Total | | \$0.51 | 3,153 | \$0.04 | 1.99 |

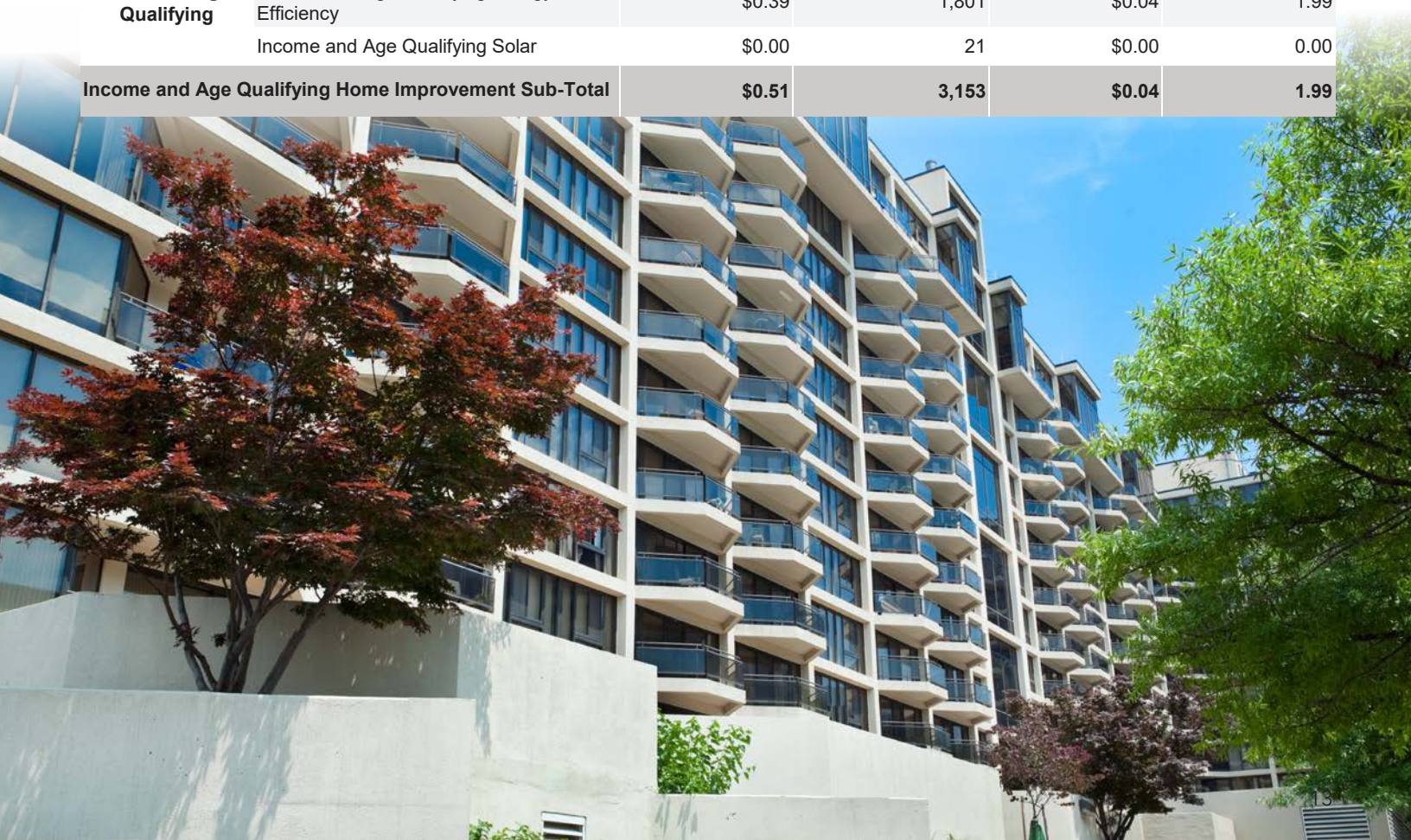


Table 9. Virginia summary program metrics - other impacts of non-residential programs (cumulative through December 31, 2022)

| Program | | Other Impacts | | | |
|--|--------------------------------------|-------------------------|--|---------------------|---------------------------|
| | | Bill Savings (\$M/year) | Carbon Emissions Avoided (Metric Tons CO ₂ /yr) | O&M NEIs (\$M/year) | Water Savings (Mgal/year) |
| Non-Residential General Products & Services | Prescriptive | \$0.03 | 49,337 | \$0.00 | 0.00 |
| | Prescriptive Enhanced | \$0.92 | 5,246 | \$0.00 | 0.00 |
| | Heating and Cooling Efficiency | \$0.63 | 7,612 | -\$0.47 | 0.00 |
| | Lighting Systems & Controls | \$1.85 | 40,422 | \$0.08 | 0.00 |
| | Small Manufacturing | \$0.41 | 2,864 | \$0.00 | 0.00 |
| | Window Film | \$0.01 | 309 | \$0.00 | 0.00 |
| | Midstream Energy Efficiency Products | N/A | 992 | -\$0.55 | 1.06 |
| Non-Residential Targeted Sector | Small Business Improvement Enhanced | \$0.61 | 4,661 | \$0.17 | 0.00 |
| | Agricultural Energy Efficiency | \$0.61 | 2,891 | \$1.28 | 0.00 |
| | New Construction | N/A | 0.00 | \$0.00 | 0.00 |
| | Multifamily | \$0.02 | 95.67 | \$0.00 | 0.00 |
| Non-Residential Building Automation & Controls | Office | \$0.49 | 3,155 | \$0.00 | 0.00 |
| | Building Optimization | \$0.10 | 1,003 | \$0.00 | 0.00 |
| | Building Automation System | N/A | 0.00 | \$0.00 | 0.00 |
| | Engagement | N/A | 0.00 | \$0.00 | 0.00 |
| Non-Residential Sub-Total | | \$5.69 | 118,588 | \$0.52 | 1.06 |
| Total | | \$34.53 | 460,589 | \$13 | 45 |

OFFICIAL COPY

Jun 15 2023



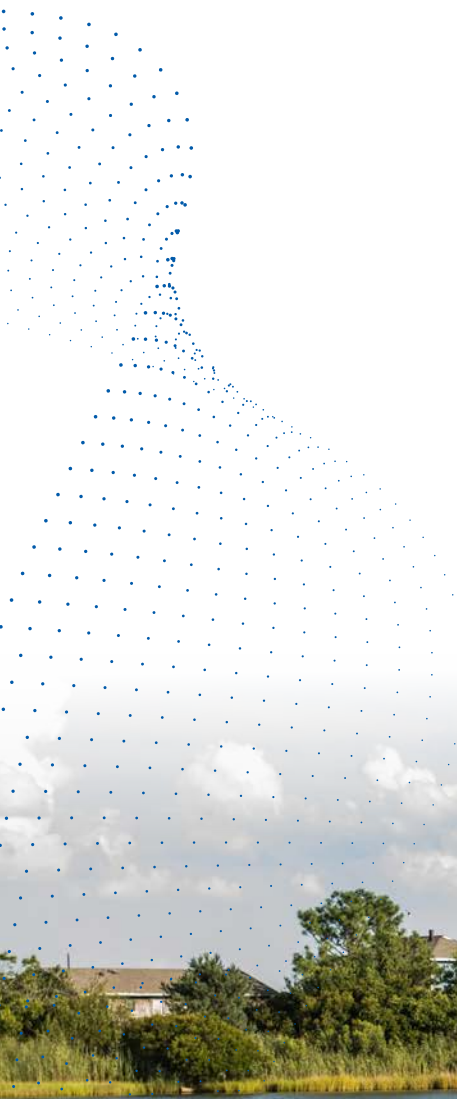
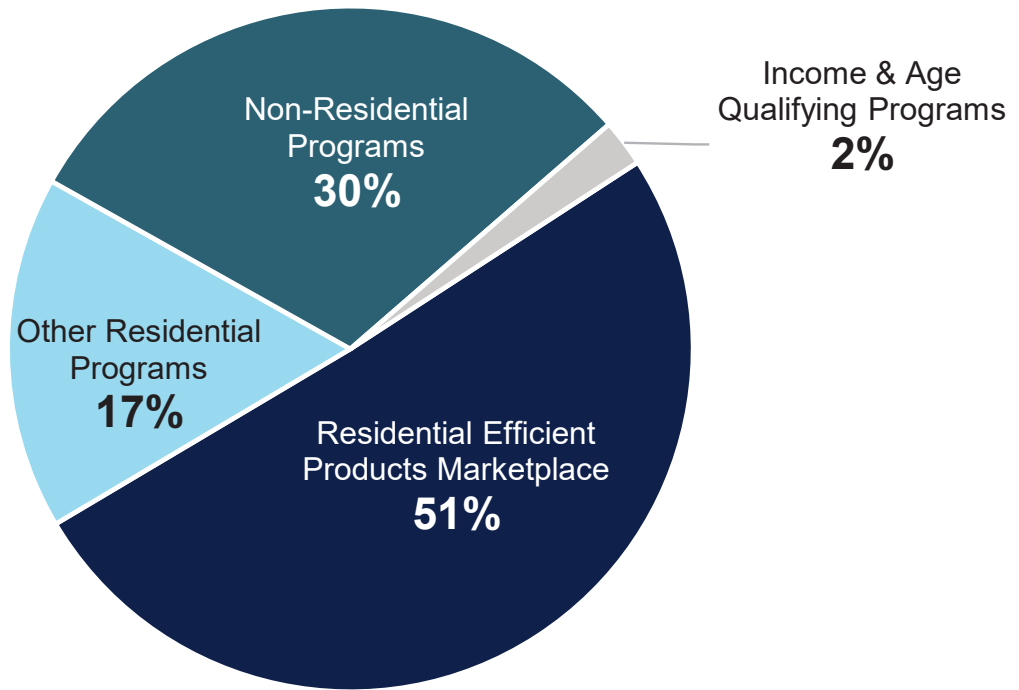
Summary of energy efficiency programs

This section summarizes the Company's energy efficiency program performance through 2022 in Virginia and North Carolina. In both states, the program with the highest savings impact is still the Residential Efficient Products Marketplace program, which predominantly comprises lighting measures. The revised definitions of various lamps under the Energy Independence and Security Act of 2007 (EISA) are enforced beginning January 2023. As a result, 2022 was the last year the Company will offer rebates for lighting measures that are affected by the EISA. The loss of this measure is an industry-wide risk that Dominion Energy has been preparing to mitigate by expanding and growing its portfolio of programs.

As mentioned above, the Company's 36 active programs now cover a diverse array of measures that can be leveraged by a variety of different customers across the service territory.

Figure 2 shows the percentage of installed net annualized energy savings in 2022 by energy efficiency program in Virginia. Almost half of the 2022 net savings came from the Residential Efficient Products Marketplace program. The remaining 30% were from all non-residential programs combined, 17% were from all other residential programs, and 2% were from the income and age qualifying (IAQ) programs. The IAQ programs provide necessary

Figure 2. Percentage of installed net annualized energy savings across the Virginia energy efficiency program portfolio in 2022

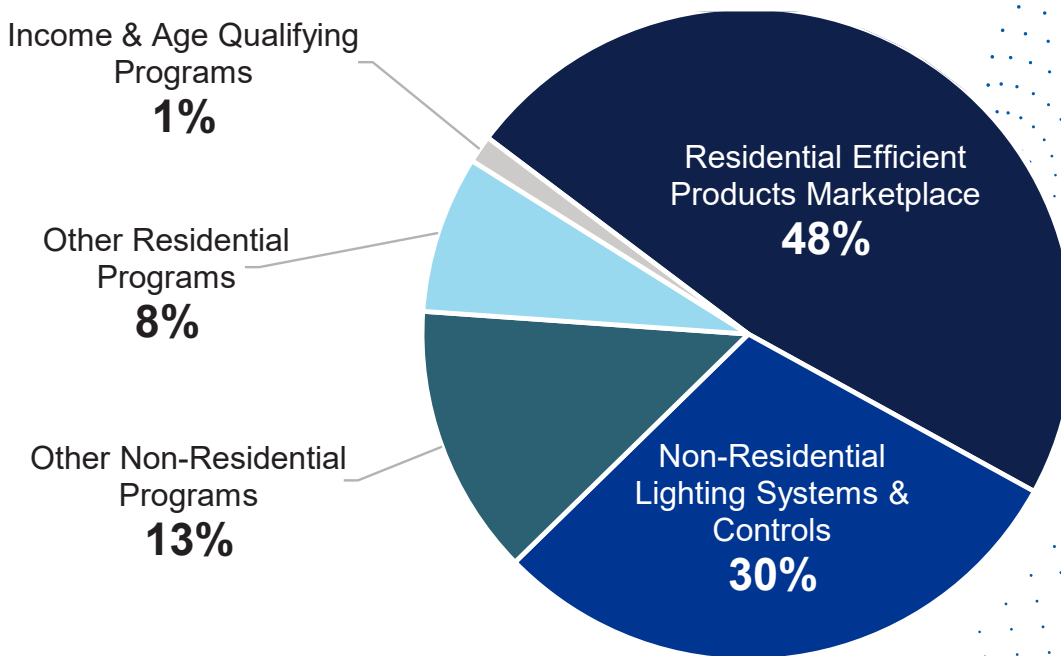


services to these underserved communities. These programs include measures and services beyond energy efficiency measures, such as health and safety procedures that must be conducted before energy efficiency measures can be installed. They also include additional financial support to contractors to defray administrative costs associated with accessing customers and providing necessary health and safety and energy efficiency measures in hard-to-reach areas.

efficiency program in North Carolina. The net annualized energy savings mix in North Carolina is different than in Virginia, since North Carolina has a slightly smaller set of program offerings. Lighting in both residential and non-residential sectors contributed to almost 80% of the net savings. The remaining (approximately 20%) were from a mix of the other residential, IAQ, and non-residential programs.

Figure 3 shows the percentage of installed net annualized energy savings in 2022 by energy

Figure 3. Percentage of installed net annualized energy savings across the North Carolina energy efficiency program portfolio in 2022



At the end of 2021, as planned, the Phase VI Non-Residential Prescriptive Program closed in both states, and had lingering applications spanning into the first quarter of 2022. All the services and measures offered in this program are also offered in the next iteration (enhanced) of the same programs, the Phase IX Non-Residential Prescriptive Enhanced Program.

Apart from those closed programs, the most mature and active programs in 2022 were the eight active Phase VII programs that were in their third full year of implementation. The energy efficiency Phase VII programs spent \$69M or roughly 83% of planned expenditures through the end of 2022. Participation for the same programs was more than 132% of planned through the end of 2022, and net annualized savings were 329 GWh/year, or roughly 72% of planned energy savings.

In the residential sector, the Appliance Recycling Program was re-launched by a new program implementer. It saw increased activity through 2022 after a long pause in 2021 due to COVID-19 and supply chain impacts beyond the program's control (such as labor and truck shortages).

As discussed briefly above, the most successful of these programs continues to be the Residential Efficient Products Marketplace program, which has contributed the most gross and net savings to the portfolio since its inception. This program has undergone two rounds of evaluations; the most recent was conducted in 2022 (details of the approach and results can be found in Appendix G).

From program launch through late 2021, the Home Energy Assessment program incentivized large quantities of lighting measures per home. In 2022, the Home Energy Assessment impact evaluation validated the Company's internal process improvement findings that these large quantities of incentivized lighting measures were not realizing the intended savings. It also found that the baseline technologies installed were possibly more efficient than assumed in the Dominion Energy Technical Reference Manual (the detailed impact evaluation can be found in Appendix H). After conducting rigorous quality checks, in late 2022, Dominion Energy implemented program design changes in the program's second year by limiting the number of installed lamps to 70 per household.¹⁵

¹⁵ Dominion Energy Home Assessment program rebate application. <https://domsavings.com/wp-content/uploads/2023/01/DSM-VII-DEV-Res-Home-Energy-Assessment-Measures-Chart-Final-01242023.pdf>. Accessed April 3, 2023.



In the non-residential sector, the Small Manufacturing Program has seen an increase in program participation and energy savings with the removal of the eligibility requirement limiting participants to those using no more than 500 kW. The Lighting System & Controls Program has continued to see great success, achieving approximately 111% of its net annualized energy savings plans thus far. These net savings have been validated through an evaluation of the gross savings and net-to-gross impacts, and include both free riders and spillover effects. Appendix K is the report of the impact evaluation, persistence study, and baseline study of the non-residential lighting measures offered through the Non-Residential Lighting Systems & Controls (Phase VII) and the Small Business Improvement Enhanced (Phase VIII) programs.

Despite the increased participation in the Small Manufacturing Program, it and the Cooling and Heating Efficiency, Window Film, and Office programs have continued to have much lower-than-planned participation and savings. In line with the Long-Term Plan recommendations to consolidate and simplify its program offerings, the Company has filed to bundle these three programs under the DSM Phase XI Non-

Residential Prescriptive Enhanced program and consolidate the Office program under the Phase IX Building Optimization program. This approach allows the Company to continue to offer these programs' measures to customers while also reducing the costs of operating them as stand-alone programs.¹⁶

The Phase VIII programs launched in spring 2021 and have been running for over a year as of this report's publication. The most successful of these programs continues to be the Residential Efficient Products Marketplace program, which has contributed the most gross and net savings to the portfolio since its inception. This program has undergone two rounds of evaluations; the most recent was conducted in 2022 (details of the approach and results can be found in Appendix G). The Residential New Construction baseline study (report in Appendix J) found that this program is pushing to expand the ENERGY STAR-certified homes market, while the Virginia new construction building codes are starting to catch up to the minimum ENERGY STAR requirements. Many of the programs targeting specific sectors continue to encounter the same challenges they faced in 2021. The Manufacturing Housing Program and Retrofit Program continue to lack a strong network of Building

¹⁶ SCC Case No. PUR-2022-00210. <https://scc.virginia.gov/docketsearch#/caseDetails/143710>. Accessed April 3, 2023.



Performance Institute (BPI)-certified professionals. Many of the Phase VIII Residential Energy Services Programs (i.e., Manufactured Housing, Home Retrofit, and Virtual Energy Audit) are far from meeting their program planned participation and energy savings targets through year end 2022. The impact evaluation of Customer Engagement found that the program as implemented in 2021 and 2022 realized very little savings. The details of the impact evaluation can be found in Appendix I.

The non-residential Phase VIII programs are continuing their ramp-up in participation and savings. The Midstream Energy Efficiency Products program is building its place in the market as it expands the enrollment of HVAC distributors and suppliers. The Non-Residential New Construction program was always expected to be a program needing a longer lead time to develop relationships with project designers and see projects through to construction phases. The Company has numerous Non-Residential New Construction projects in its pipeline for 2023.

As with all first-year programs, the Phase IX programs (approved by the SCC in fall 2021) underwent a series of administrative and program launch activities in 2022. The most successful was the Income and Age Qualifying Enhanced Program, a continuation of a previous iteration, which exceeded energy savings plans through year end 2022.

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.

When reviewing the North Carolina results, it is helpful to note that the North Carolina programs are operated under a cost allocation formula as a subset of the overall system-level program budget. The allocation is approximately 6% in North Carolina and 94% in Virginia.

In aggregate, the portfolio has spent almost 80% of its budget through 2022 in Virginia and slightly



more than half (54%) of its budget in North Carolina. It has reached approximately three-quarters of its planned participation in Virginia and a small portion of its North Carolina planned participation (1%). This equated to 54% and almost 6% of planned net energy savings in Virginia and North Carolina, respectively.

In Virginia, while the spending across the three sectors—residential, IAQ, and non-residential—has been similar (between 69% and 88% of planned), the residential sector is leading in percentage of planned participation at 74% of planned, compared to 42% in the IAQ sector and 45% in the non-residential sector. In terms of net energy savings achieved as a percentage of the plan across the three sectors, residential achieved 56% of planned, IAQ achieved 31%, and non-residential achieved 50% in Virginia.

In North Carolina, the non-residential sector leads in spending, participation, and net energy savings compared to plan. As in Virginia, spending is similar across the three sectors (between 46% and 61% of planned spending), participation is at 35% of planned, and energy savings is at 24% of planned for the non-residential sector.

More granular details of each program's performance by month can be found 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. The following sections highlight energy efficiency programs in Virginia and North Carolina.



Table 10. Annualized program progress for Residential Energy Services and Residential Efficient Products energy efficiency programs (cumulative from program start through December 31, 2022) in Virginia and North Carolina (active programs)^{17, 18, 19, 20, 21, 22}

| 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) |
| Residential Energy Services | | | | | | | |
| Appliance Recycling | Actual | \$1.78 | 5.03 | 2,155 | \$0.05 | 0.02 | 9 |
| | Planned | \$6.52 | 32 | 15,064 | \$0.34 | 1.71 | 805 |
| | % of Plan | 27% | 16% | 14% | 16% | 1.11% | 1.06% |
| Home Energy Assessment | Actual | \$16 | 19 | 11,357 | \$0.33 | 0.07 | 32 |
| | Planned | \$16 | 104 | 37,308 | \$0.88 | 5.97 | 2,051 |
| | % of Plan | 98% | 18% | 30% | 37% | 1.12% | 1.56% |
| Customer Engagement | Actual | \$3.93 | 550 | 13,741 | | | |
| | Planned | \$3.84 | 565 | 94,903 | | | |
| | % of Plan | 102% | 97% | 14% | | | |
| Manufactured Housing | Actual | \$1.32 | 0.01 | 1.10 | | | |
| | Planned | \$2.86 | 3.20 | 5,674 | | | |
| | % of Plan | 46% | 0.19% | 0.02% | | | |
| Multifamily | Actual | \$1.43 | 1.64 | 386 | | | |
| | Planned | \$3.95 | 23 | 20,384 | | | |
| | % of Plan | 36% | 7.14% | 1.89% | | | |
| Home Retrofit | Actual | \$1.78 | 0.15 | 302 | 0.08 | 0.00 | 0.00 |
| | Planned | \$3.18 | 2.73 | 5,303 | 0.20 | 0.17 | 338,460 |
| | % of Plan | 56% | 5.5% | 5.7% | 42% | 0% | 0% |
| Virtual Energy Audit | Actual | \$0.67 | 2.15 | 1,184 | 0.02 | 0.04 | 24,450 |
| | Planned | \$4.21 | 56 | 16,785 | \$0.11 | 3.60 | 1,071,360 |
| | % of Plan | 16% | 3.8% | 7.1% | 14% | 1.08% | 2.28% |
| Residential Efficient Products | | | | | | | |
| Efficient Products Marketplace | Actual | \$31.1 | 14,810 | 252,747 | \$0.93 | 287 | 4,800 |
| | Planned | \$30.6 | 10,405 | 288,104 | \$1.50 | 474 | 13,726 |
| | % of Plan | 102% | 142% | 88% | 62% | 61% | 35% |
| Electric Vehicle Energy Efficiency and Demand Response | Actual | \$0.57 | 0.30 | 32 | | | |
| | Planned | \$0.74 | 1.30 | 487 | | | |
| | % of Plan | 78% | 23% | 6.5% | | | |
| Kits | Actual | \$2.59 | 55 | 4,130 | \$0.13 | 2.72 | 205 |
| | Planned | \$3.88 | 56 | 14,919 | \$0.24 | 3.60 | 952 |
| | % of Plan | 67% | 97% | 28% | 52% | 75% | 22% |
| Smart Home | Actual | \$0.73 | 0.02 | 6.87 | \$0.02 | 0.001 | 0.33 |
| | Planned | \$2.05 | 4.83 | 5,706 | \$0.05 | 0.31 | 364 |
| | % of Plan | 36% | 0.31% | 0.12% | 31% | 0.32% | 0.09% |
| Water Savings | Actual | \$0.27 | 0.06 | 88 | \$0.01 | 0.00 | 0.00 |
| | Planned | \$0.79 | 0.94 | 1,850 | \$0.02 | 0.06 | 118 |
| | % of Plan | 34% | 6.6% | 4.8% | 25% | 0% | 0% |
| Thermostat Purchase and WeatherSmart SM | Actual | \$2.25 | 10 | 2,689 | \$0.07 | 0.26 | 78,055 |
| | Planned | \$2.37 | 14 | 5,300 | \$0.15 | 0.90 | 338,242 |
| | % of Plan | 95% | 68% | 51% | 47% | 29% | 23% |

¹⁷ Participation in the Residential Appliance Recycling Program is measured by units recycled.

¹⁸ Participation in the Residential Efficient Products Marketplace Program is measured by incentivized unit, i.e., lamp, fixture, or appliance.

¹⁹ 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.

²⁰ 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.

²¹ Participation in the Non-Residential Window Film Program is reported in square feet rather than number of participants.

²² 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.

Table 11. Annualized program progress for active Residential New Construction, Income and Age Qualifying, and Non-Residential General Products & Services energy efficiency programs (cumulative through December 31, 2022) in Virginia and North Carolina

| Program | | 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) |
| Residential New Construction | | | | | | | |
| New Construction | Actual | \$3.92 | 3.58 | 6,178 | | | |
| | Planned | \$8.78 | 8.80 | 12,268 | | | |
| | % of Plan | 45% | 41% | 50% | | | |
| Income and Age Qualifying | | | | | | | |
| HVAC Health and Safety | Actual | \$21 | 7.02 | 1,872 | | | |
| | Planned | \$22 | 18 | 11,604 | | | |
| | % of Plan | 98% | 40% | 16% | | | |
| Income and Age Qualifying Energy Efficiency | Actual | \$5.87 | 4.78 | 2,477 | \$0.14 | 0.03 | 38 |
| | Planned | \$7.43 | 10 | 513 | \$0.31 | 0.62 | 33 |
| | % of Plan | 79% | 49% | 482% | 46% | 4.2% | 115% |
| Income and Age Qualifying Solar | Actual | \$0.21 | 0.01 | 28 | | | |
| | Planned | \$10.52 | 0.56 | 2,038 | | | |
| | % of Plan | 2.0% | 1.3% | 1.4% | | | |
| Non-Residential General Products & Services | | | | | | | |
| Prescriptive | Actual | \$33 | 2.84 | 41,761 | \$1.22 | 0.12 | 1,609 |
| | Planned | \$29 | 1.98 | 87,045 | \$1.59 | 0.11 | 5,213 |
| | % of Plan | 115% | 143% | 48% | 77% | 105% | 31% |
| Prescriptive Enhanced | Actual | \$5.69 | 0.37 | 7,963 | \$0.02 | 0.00 | 0.00 |
| | Planned | \$4.23 | 0.56 | 15,227 | \$0.11 | 0.04 | 972 |
| | % of Plan | 134% | 65% | 52% | 20% | 0% | 0% |
| Heating and Cooling Efficiency | Actual | \$2.82 | 0.13 | 9,266 | \$0.11 | 0.002 | 100 |
| | Planned | \$6.83 | 2.32 | 28,893 | \$0.36 | 0.13 | 1,567 |
| | % of Plan | \$0.41 | 5.4% | 32% | 30% | 1.59% | 6.4% |
| Lighting Systems & Controls | Actual | \$11 | 0.99 | 38,122 | \$0.46 | 0.03 | 993 |
| | Planned | \$8.95 | 1.65 | 33,441 | \$0.46 | 0.08 | 1,692 |
| | % of Plan | 121% | 60% | 114% | 100% | 31% | 59% |
| Small Manufacturing | Actual | \$1.68 | 0.02 | 4,498 | \$0.05 | 0.00 | 0.00 |
| | Planned | \$4.57 | 0.23 | 10,646 | \$0.23 | 0.01 | 548 |
| | % of Plan | 37% | 9% | 42% | 22% | 0% | 0% |
| Window Film | Actual | \$1.15 | 0.07 | 408 | \$0.05 | 0.002 | 14 |
| | Planned | \$1.64 | 446 | 5,889 | \$0.08 | 24 | 318 |
| | % of Plan | 70% | 0.02% | 6.9% | 62% | 0.01% | 4.38% |
| Midstream Energy Efficiency Products | Actual | \$1.38 | 0.12 | 1,521 | | | |
| | Planned | \$3.79 | 0.60 | 7,669 | | | |
| | % of Plan | 36% | 20% | 20% | | | |



Table 12. Annualized program progress for active Non-Residential Targeted Sector and Non-Residential Building Automation & Controls energy efficiency programs (cumulative through December 31, 2022) in Virginia and North Carolina

| Program | | 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) |
| Non-Residential Targeted Sector | | | | | | | |
| Small Business Improvement Enhanced | Actual | \$5.95 | 0.90 | 6,622 | \$0.23 | 0.02 | 413 |
| | Planned | \$7.22 | 1.27 | 18,399 | \$0.45 | 0.08 | 1,190 |
| | % of Plan | 82% | 71% | 36% | 50% | 20% | 35% |
| Agricultural Energy Efficiency | Actual | \$0.49 | 0.003 | 4,831 | | | |
| | Planned | \$0.91 | 0.15 | 1,873 | | | |
| | % of Plan | 54% | 2.0% | 258% | | | |
| New Construction | Actual | \$1.11 | 0.00 | 0.00 | \$0.06 | 0.00 | 0.00 |
| | Planned | \$2.29 | 0.07 | 3,223 | \$0.14 | 0.004 | 195 |
| | % of Plan | 48% | 0% | 0% | 40% | 0.00% | 0.00% |
| Multifamily | Actual | \$0.40 | 0.01 | 149 | | | |
| | Planned | \$0.90 | 2.83 | 4,832 | | | |
| | % of Plan | 45% | 0.2% | 3.1% | | | |
| Non-Residential Building Automation & Controls | | | | | | | |
| Office | Actual | \$2.10 | 0.08 | 4,997 | \$0.08 | 0.002 | 39 |
| | Planned | \$4.28 | 0.28 | 16,348 | \$0.22 | 0.02 | 879 |
| | % of Plan | 49% | 29% | 31% | 36% | 13% | 4.4% |
| Building Optimization | Actual | \$0.51 | 0.00 | 1,618 | \$0.01 | 0.00 | 0.00 |
| | Planned | \$1.10 | 0.03 | 4,609 | \$0.03 | 0.002 | 329 |
| | % of Plan | 46% | 7.14% | 35% | 34% | 0% | 0% |
| Building Automation System | Actual | \$0.43 | 0.00 | 0.00 | \$0.01 | 0.00 | 0.00 |
| | Planned | \$0.96 | 0.03 | 3,780 | \$0.02 | 0.002 | 270 |
| | % of Plan | 45% | 0% | 0% | 38% | 0% | 0% |
| Engagement | Actual | \$0.61 | 0.00 | 0.00 | \$0.02 | 0.00 | 0.00 |
| | Planned | \$1.54 | 0.05 | 3,976 | \$0.06 | 0.003 | 221 |
| | % of Plan | 40% | 0% | 0% | 27% | 0% | 0% |
| Sub-totals | | | | | | | |
| Residential Programs | Actual | \$68 | 646 | 294,995 | \$1.63 | 70 | 107,550 |
| | Planned | \$90 | 873 | 524,055 | \$3.50 | 5,975 | 1,766,078 |
| | % of Plan | 76% | 74% | 56% | 47% | 1.2% | 6.1% |
| Income & Age Qualifying Programs | Actual | \$27 | 12 | 4,377 | \$0.14 | 0.03 | 38 |
| | Planned | \$40 | 28 | 14,156 | \$0.31 | 0.62 | 33 |
| | % of Plan | 69% | 42% | 31% | 46% | 4.2% | 115% |
| Non-Residential Programs | Actual | \$68 | 5.44 | 121,757 | \$2.31 | 0.17 | 3,169 |
| | Planned | \$78 | 12 | 245,849 | \$3.77 | 0.48 | 13,394 |
| | % of Plan | 88% | 45% | 50% | 61% | 35% | 24% |
| Total | | | | | | | |
| All Programs | Actual | \$164 | 664 | 421,130 | \$4.09 | 70 | 110,757 |
| | Planned | \$208 | 913 | 784,059 | \$7.58 | 5,976 | 1,779,505 |
| | % of Plan | 79% | 73% | 54% | 54% | 1.2% | 6.2% |

Summary of peak shaving programs

The following sections present key performance indicators for Dominion Energy’s four peak shaving programs. 2022 was the final year of the Company’s longest-running DSM program, Residential Smart Cooling Rewards, which operated from 2011 through 2022 and served 166,461 customers over its 12-year life. Its successor program, the Residential Smart Thermostat Rewards Program (Virginia and North Carolina), and the Electric Vehicle Rewards Program (Virginia) are currently active. The Water Savings Demand Response program is expected to begin enrolling customers in 2023. DNV conducted EM&V

impact evaluations of the three programs that called demand response events in 2022: the Smart Cooling Rewards Program, the Non-Residential Distributed Generation Program, and the Smart Thermostat Rewards 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 kilowatts (kW).

Table 13 shows key EM&V performance indicators for peak shaving programs.

Table 13. Portfolio spending and net peak shaving potential by program (cumulative through December 31, 2022)^{23, 24}

| Program | Metric | Expenditures (\$M) | Participants (1,000's) | Peak Shaving Potential (kW) |
|--------------------------------------|------------------|--------------------|------------------------|-----------------------------|
| Residential | | | | |
| Smart Cooling Rewards | Actual | \$96 | 57 | 28,106 |
| | Planned | \$129 | 61 | 32,380 |
| | % of Plan | 74% | 94% | 87% |
| Electric Vehicle Rewards | Actual | \$0.38 | 0.69 | 0.00 |
| | Planned | \$0.62 | 0.83 | 831 |
| | % of Plan | 61% | 83% | 0% |
| Smart Thermostat Rewards | Actual | \$2.03 | 11 | 10,160 |
| | Planned | \$4.00 | 21 | 32,870 |
| | % of Plan | 51% | 52% | 31% |
| Water Savings Demand Response | Actual | \$0.16 | 0.00 | 0.00 |
| | Planned | \$0.35 | 0.67 | 346 |
| | % of Plan | 46% | 0% | 0% |
| Non-Residential | | | | |
| Distributed Generation | Actual | \$6.91 | 0.01 | 6,115 |
| | Planned | \$14 | 0.01 | 7,130 |
| | % of Plan | 49% | 82% | 86% |
| Total | | | | |
| All Programs | Actual | \$105 | 68 | 44,381 |
| | Planned | \$148 | 83 | 73,557 |
| | % of Plan | 71% | 82% | 60% |

²³ Total participation is not reported because AC Cycling participation is defined by the number of participating accounts and Distributed Generation participation is defined by the number of enrolled megawatts.

²⁴ 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.

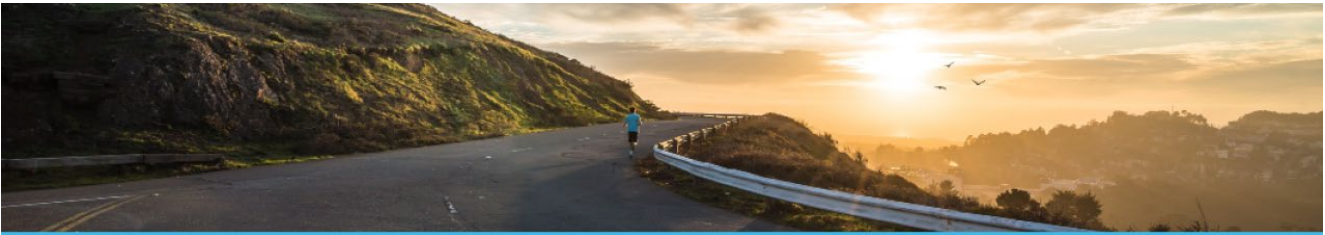


ABOUT DNV

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.

[dnv.com](https://www.dnv.com)



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.²⁵

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.²⁶

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.²⁷ 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.²⁸ 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.

²⁵ 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).

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

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

²⁸ 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

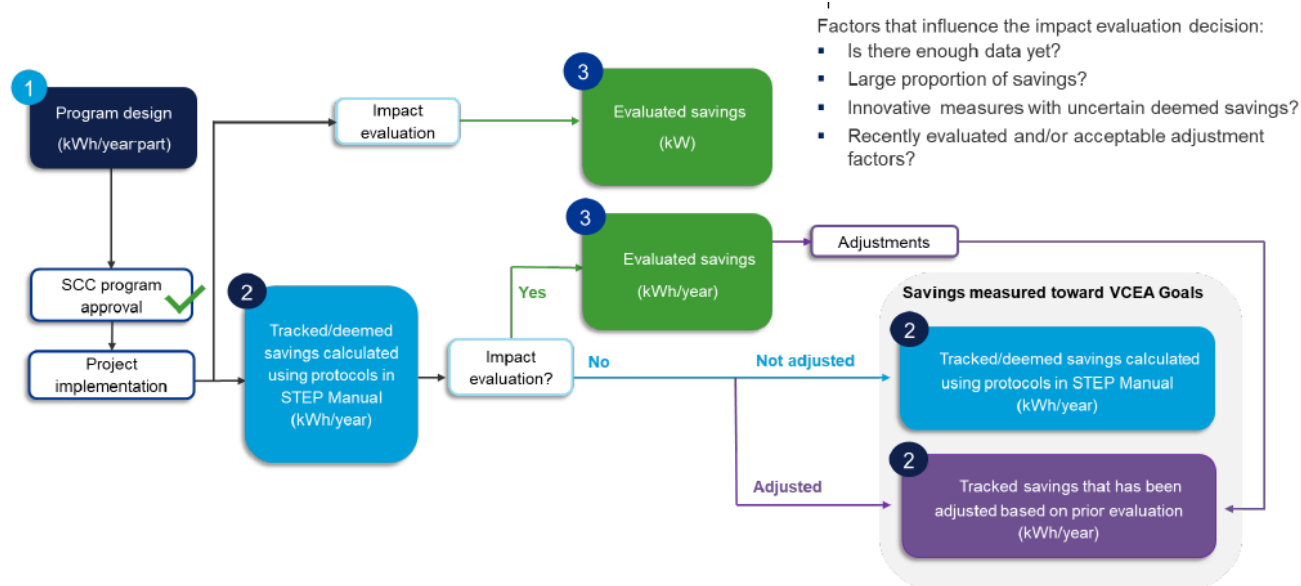
In North Carolina, this report meets the EM&V requirements established by the North Carolina Utilities Commission (NCUC). EM&V reports about the Company’s North Carolina programs must be filed with the NCUC and must include the EM&V reporting from Virginia.^{29,30,31}

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 tracking 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 E 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.

²⁹ 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).

³⁰ 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).

³¹ Case No. PUR-2018-00168 on April 30, 2020.



1.4 Report structure

Sections 2 through 9 contain the one-page summaries of the EM&V results for all the programs that were active in 2022. Each page contains the following:

1. VA SCC and NCUC case number
2. Number of years program has been open
3. The 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 info/breakdown

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), formerly known as the Standard Tracking Engineering Protocol (STEP) Manual. It lists the protocols and assumptions used to calculate gross annualized savings, gross peak summer and winter demand reductions, water savings, and lifetime savings.
- APPENDIX G through APPENDIX N are the detailed reports and memos documenting the impact evaluations and in-depth studies conducted for the following programs:
 - Residential Efficient Products Marketplace
 - Residential Home Energy Assessment
 - Residential Customer Engagement
 - Residential New Construction
 - Non-Residential Lighting Systems & Controls Phases III and VII, Small Business Improvement Phases V and IX
 - Residential Smart Cooling Rewards
 - Non-Residential Distributed Generation
 - Residential Smart Thermostat Rewards
- APPENDIX O and APPENDIX P contain the detailed program performance indicators for each active and closed program with persistent savings in 2022 in Virginia and North Carolina respectively. The results are presented at these levels of detail:
 - Annual
 - Monthly for the reporting year (i.e., 2022)
 - 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 as well as all other cost/benefit analyses from prior EM&V Reports.
- APPENDIX Q contains detailed program cumulative savings for each active and closed program with persistent savings in 2022 used for claiming lost revenue, program performance incentives, IRP modeling, lifetime savings accounting, and other purposes used in both states.

1.5 Programs covered in this report

This report divides the DSM programs into eight categories:

- Residential Efficient Products Programs (Section 2)
- Residential Energy Services Programs (Section 3)
- Residential New Construction Programs (Section 4)
- Income and Age Qualifying Programs (Section 5)
- Non-Residential General Products and Services Programs (Section 6)
- Non-Residential Targeted Sectors Programs (Section 7)
- Non-Residential Automation and Controls Programs (Section 8)
- Peak Shaving Programs (Section 9)

Table 1-1 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 updated key program values because of EM&V efforts conducted in 2022 and the average annualized kWh/year per participant before and after the update. The change in the average annualized kWh/year per participant values are a function of the following:

- Updates to adjustment factors or values based on EM&V activities
- Updates to deemed savings calculation methodology based on regular DE TRM updates
- Variation in participant characteristics as inputs to the deemed savings calculations from year to year

Note that changes in deemed savings approaches that also drive changes in average participant values are not detailed here, but rather in APPENDIX F, DE TRM Manual.

The table also maps the specific appendices where more detailed data can be found about each program (e.g., EM&V plans, 2022 monthly program performance indicators, measure-level performance indicators, rate schedule level performance indicators). 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.



Table 1-1. Categories and list of DSM programs with persistent savings in 2022³²

| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|--------------------|--|--|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|------------------------------|----------------------|
| Residential | | | | | | | | | | | |
| VII | Efficient Products Marketplace | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 17 kWh/yr | O.1 – VA | E.3 |
| | | NC | Docket No. E-22, SUB 568 (Nov. 13, 2019) | | | | | | 17 kWh/yr | Q – Gross and Net Cumulative | |
| VIII | Electric Vehicle Energy Efficiency and Demand Response | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 106 kWh/yr | O.2 – VA | E.4 (also see:E:4 4) |
| | Kits | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | None | None | None | None | 75 kWh/yr | O.3 – VA | E.5 |
| | | NC | Docket No. E-22, SUB 592 (Feb. 9, 2021) | | | | | | 76 kWh/yr | Q – Gross and Net Cumulative | |
| | Thermostat Purchase and Weather Smart | VA | Case No. PUR-2018-00168 (May 2, 2019) Reapproved: Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 208 kWh/yr | O.4 – VA | E.6 |
| NC | | Docket No. E-22, SUB 594 (Feb. 19, 2019) | 232 kWh/yr | | | | | | Q – Gross and Net Cumulative | | |

³² Changes to participant kWh/year are also partially driven by updates to the deemed annualized savings methodology because of regular updates made to the DE TRM. To review those specific updates, refer to Appendix F.



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan | |
|-------|------------------------|-------|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|--|-----------|-----------|
| IX | Smart Home | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | None | N/A | N/A | N/A | N/A | 458 kWh/yr | O.5 – VA | E.7 | |
| | | NC | Docket No. E-22, SUB 618 (Mar. 18, 2022) | | | | | | 326 kWh/yr | Q – Gross and Net Cumulative | | |
| | Water Savings | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | N/A | N/A | N/A | N/A | N/A | 1,418 kWh/yr | O.6 – VA | | E.8 |
| | | NC | Docket No. E-22, SUB 620 (Mar. 18, 2022) | | | | | | N/A | P.5 - NC Q – Gross and Net Cumulative | | |
| VII | Appliance Recycling | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 428 kWh/yr | O.7 – VA | E.9 | |
| | | NC | Docket No. E-22, SUB 569 (Nov. 13, 2019) | | | | | | 450 kWh/yr | Q – Gross and Net Cumulative | | |
| | Home Energy Assessment | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 589 kWh/yr | O.8 – VA | E.10 | |
| | | NC | Docket No. E-22, SUB 567 (Nov. 13, 2019) | | | | | | 478 kWh/yr | Q – Gross and Net Cumulative | | |
| VIII | Customer Engagement | VA | Case No. PUR-2018-00168 (May 2, 2019) Reapproved: Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 25 kWh/yr | O.9 – VA | E.11 | |
| | | VA | | | | | | | N/A | 184 kWh/yr | | O.10 – VA |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|----------------------------------|---------------------------------------|-------|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|---|-----------|
| | Manufactured Housing | | Case No. PUR-2019-00201 (Jul. 30, 2020) | | | | | | | Q – Gross and Net Cumulative | |
| | Residential Multifamily | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 231 kWh/yr | O.11 – VA Q – Gross and Net Cumulative | E.13 |
| | Retrofit | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 2,022 kWh/yr | O.12 – VA P.8 – NC Q – Gross and Net Cumulative | E.14 |
| | | NC | Docket No. E-22, SUB 593 (Feb. 9, 2021) | | | | | | N/A | | |
| IX | Virtual Energy Audit | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | None | N/A | N/A | N/A | N/A | 486 kWh/yr | O.13 – VA P.9 – NC Q – Gross and Net Cumulative | E.15 |
| | | NC | Docket No. E-22, SUB 619 (Mar. 18, 2022) | | | | | | 549 kWh/yr | | |
| VIII | New Construction | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 1,727 kWh/yr | O.14 – VA Q – Gross and Net Cumulative | E.16 |
| Income and Age Qualifying | | | | | | | | | | | |
| VIII | Residential HVAC Health and Safety | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 267 kWh/yr | O.15 – VA Q – Gross and Net Cumulative | E.17 |
| IX | Residential Income and Age Qualifying | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | None | N/A | N/A | N/A | N/A | 500 kWh/yr | O.16 – VA P.10 – NC | E.18 |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|------------------------|---|-------|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|---|-----------|
| | Energy Efficiency | NC | Docket No. E-22, SUB 608 (Dec. 14, 2021) | | | | | | N/A | Q – Gross and Net Cumulative | |
| | Residential Income and Age Qualifying Solar Program | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | None | N/A | N/A | N/A | N/A | 3,950 kWh/yr | O.17 – VA Q – Gross and Net Cumulative | E.19 |
| Non-Residential | | | | | | | | | | | |
| VI | Prescriptive | VA | Case No. PUE-2016-00111 (Jun. 1, 2017) | None | N/A | N/A | N/A | N/A | 14,730 kWh/yr | O.18 – VA P.11 – NC | E.23 |
| | | NC | Docket No. E-22, SUB 543 (Oct. 16, 2017) | | | | | | 13,410 kWh/yr | Q – Gross and Net Cumulative | |
| IX | Enhanced Prescriptive | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | N/A | N/A | N/A | N/A | N/A | 21,758 kWh/yr | O.19 – VA | E.24 |
| | | NC | Docket No. E-22, SUB 617 (Mar. 18, 2022) | | | | | | N/A | P.12 – NC Q – Gross and Net Cumulative | |
| VII | Heating and Cooling Efficiency | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 74,129 kWh/yr | O.20 – VA P.13 – NC | E.25 |
| | | NC | Docket No. E-22, SUB 574 (Nov. 13, 2019) | | | | | | 49,877 kWh/yr | Q – Gross and Net Cumulative | |
| | Lighting Systems & Controls | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 38,624 kWh/yr | O.21 – VA P.14 – NC | E.26 |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan | |
|-------------------------------------|---------------------|-------------------------------------|--|---|------------------------------|----------------|------------------------|-----------------------|--|------------------------------|---|------|
| | Small Manufacturing | NC | Docket No. E-22, SUB 573 (Nov. 13, 2019) | None | N/A | N/A | N/A | N/A | 38,210 kWh/yr | Q – Gross and Net Cumulative | E.27 | |
| | | VA | Case No. PUR-2018-00168 (May 2, 2019) | | | | | | 224,925 kWh/yr | O.22 – VA P.15 – NC | | |
| | | NC | Docket No. E-22, SUB 571 (Nov. 13, 2019) | | | | | | N/A | Q – Gross and Net Cumulative | | |
| | Window Film | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 5,917 kWh/yr | O.23 – VA P.16 – NC | E.28 | |
| | | NC | Docket No. E-22, SUB 570 (Nov. 13, 2019) | | | | | | 6,974 kWh/yr | Q – Gross and Net Cumulative | | |
| | VIII | Midstream Energy Efficient Products | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 12,674 kWh/yr | O.24 – VA Q – Gross and Net Cumulative | E.29 |
| | | Non-Residential Multifamily | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 29,809 kWh/yr | O.25 – VA Q – Gross and Net Cumulative | E.13 |
| | | New Construction | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | N/A | O.26 – VA P.17 – NC | E.31 |
| NC | | | Docket No. E-22, SUB 591 (Feb. 9, 2021) | N/A | | | | | | Q – Gross and Net Cumulative | | |
| Small Business Improvement Enhanced | | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 7,374 kWh/yr | O.27 – VA P.18 - NC | E.32 | |
| | | NC | Docket No. E-22, SUB | | | | | | 25,842 kWh/yr | Q – Gross and Net Cumulative | | |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|------------------------|-----------------------|-------|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|---|-----------|
| | | | 596 (Feb. 9, 2021) | | | | | | | | |
| IX | Agriculture | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | N/A | N/A | N/A | N/A | N/A | 1,610,392 kWh/yr | O.28 – VA Q – Gross and Net Cumulative | E.34 |
| VII | Office | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 61,690 kWh/yr | O.29 – VA | E.38 |
| | | NC | Docket No. E-22, SUB 572 (Nov. 13, 2019) | | | | | | 19,550 kWh/yr | Q – Gross and Net Cumulative | |
| IX | Building Automation | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | N/A | N/A | N/A | N/A | N/A | N/A | O.31 – VA | E.39 |
| | | NC | Docket No. E-22, SUB 614 (Mar. 18, 2022) | | | | | | N/A | P.21 – NC Q – Gross and Net Cumulative | |
| | Building Optimization | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | N/A | N/A | N/A | N/A | N/A | 802,365 kWh/yr | O.30 – VA | E.40 |
| | | NC | Docket No. E-22, SUB 615 (Mar. 18, 2022) | | | | | | N/A | P.20 – NC Q – Gross and Net Cumulative | |
| | Engagement | VA | Case No. PUR-2020-00274 (Sep. 7, 2021) | N/A | N/A | N/A | N/A | N/A | N/A | O.32 – VA | E.41 |
| | | NC | Docket No. E-22, SUB 616 (Mar. 18, 2022) | | | | | | N/A | P.22 – NC Q – Gross and Net Cumulative | |
| Demand Response | | | | | | | | | | | |

OFFICIAL COPY
Jun 15 2023



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|-------|--|-------|--|-----------------------------------|------------------------------|----------------|------------------------|-----------------------|--|--|-----------|
| I | Residential Smart Cooling Reward | VA | PUE-2009-00081 (Mar. 24, 2010) Extensions: Case No. PUE-2012-00100 (Apr. 19, 2013) Case No. PUE-2015-00089 (Apr. 19, 2016) Case No. PUR-2019-00201 (Jul. 30, 2020) | Update based on Operability Study | Operability rate | 2022 | N/A | N/A | 0.53 kW/participant | O.33 – VA P.23 – NC Q – Gross and Net Cumulative | N/A |
| | | | | Update based on tracking data | Opt-out rate | 2022 | 0.01% | 0.01% | | | |
| | | | | Update based on tracking data | Removal/ deactivation rate | 2022 | 1.12% | 1.45% | | | |
| | | NC | Feb. 22, 2011 | Update based on Operability Study | Operability rate | 2022 | N/A | N/A | 0.53 kW/participant | | |
| | | | | Update based on tracking data | Opt-out rate | 2022 | 0.01% | 0.01% | | | |
| | | | | Update based on tracking data | Removal/ deactivation rate | 2022 | 1.01% | 0.55% | | | |
| II | Non-Residential Distributed Generation | VA | Case No. PUE-2011-00093 (Apr. 30, 2012) Extension: PUE-2016-00111 (Jun. 1, 2017) PUR-2020-00274 (Sep. 7, 2021) | None | N/A | N/A | N/A | N/A | 5.88 MW Average Net Savings Per Participant | O.34 – VA Q – Gross and Net Cumulative | E.42 |
| VII | Residential Smart Thermostat Rewards | VA | Case No. PUR-2018-00168 (May 2, 2019) | None | N/A | N/A | N/A | N/A | 0.94 kW/ participant demand | O.36 – VA | E.44 |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|------------------------|--------------------------------------|----------------------|---|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|--|-----------|
| | | | Reapproved: Case No. PUR-2019-00201 (Jul. 30, 2020) | | | | | | reduction potential | P.24 – NC | |
| | | NC | Docket No. E-22, SUB 594 (Feb. 9, 2021) | | | | | | | Q – Gross and Net Cumulative | |
| VIII | Residential Electric Vehicle Rewards | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | 0 kW demand reduction potential | O.35 – VA Q – Gross and Net Cumulative | E.43 |
| IX | Residential Water Savings | VA | Case No. PUR-2019-00201 (Jul. 30, 2020) | None | N/A | N/A | N/A | N/A | N/A | O.37 – VA P.25 – NC | E.45 |
| | | NC | Docket No. E-22, SUB 621 (Mar. 18, 2022) | | | | | | N/A | | |
| Closed Programs | | | | | | | | | | | |
| I | Residential Lighting | VA | Case No. PUE-2009-00081 (Mar. 24, 2010) | N/A | N/A | N/A | N/A | N/A | 28 kWh/yr | O.47 – VA P.26 - NC Q – Gross and Net Cumulative | N/A |
| | Low Income | VA | Case No. PUE-2009-00081 (Mar. 24, 2010) | N/A | N/A | N/A | N/A | N/A | 528 kWh/yr | O.48 – VA P.27 - NC | N/A |
| | | NC | Docket No. E-22, Sub 523 (Oct. 6, 2015) | | | | | | 490 kWh/yr | | |
| | Commercial Lighting | VA | Case No. PUE-2009-00081 (Mar. 24, 2010) | N/A | N/A | N/A | N/A | N/A | 29,337 kWh/yr | O.54 – VA P.33 - NC | N/A |
| NC | | Docket No. E-22, Sub | 58,372 kWh/yr | | | | | | Q – Gross and Net Cumulative | | |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan | |
|-------|----------------------------------|-------|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|------------------------------|-----------|-----|
| | | | 469 (Aug. 13, 2014) | | | | | | | | | |
| | Commercial HVAC Upgrade | VA | Case No. PUE-2009-00081 (Mar. 24, 2010) | N/A | N/A | N/A | N/A | N/A | 47,361 kWh/yr | O.55 – VA P.34 - NC | N/A | |
| | | NC | Docket No. E-22, Sub 467 (Aug. 13, 2014) | | | | | | 27,641 kWh/yr | Q – Gross and Net Cumulative | | |
| II | Residential Home Energy Check-Up | VA | Case No. PUE-2011-00093 (Apr. 30, 2012) | N/A | N/A | N/A | N/A | N/A | 628 kWh/yr | O.52 – VA P.31 - NC | N/A | |
| | | NC | Docket No. E-22, Sub 498 (Dec. 17, 2013) | | | | | | 755 kWh/yr | Q – Gross and Net Cumulative | | |
| | Residential Duct Sealing | VA | Case No. PUE-2011-00093 (Apr. 30, 2012) | N/A | N/A | N/A | N/A | N/A | 232 kWh/yr | O.51 – VA P.30 - NC | N/A | |
| | | NC | Docket No. E-22, Sub 397 (Dec. 16, 2013) | | | | | | 242 kWh/yr | Q – Gross and Net Cumulative | | |
| | Residential Heat Pump Tune-Up | VA | Case No. PUE-2011-00093 (Apr. 30, 2012) | N/A | N/A | N/A | N/A | N/A | 214 kWh/yr | O.49 – VA P.28 - NC | N/A | |
| | | NC | Docket No. E-22, Sub 499 (Dec. 17, 2013) | | | | | | 229 kWh/yr | Q – Gross and Net Cumulative | | |
| | Residential Heat Pump Upgrade | VA | Case No. PUE-2011-00093 (Apr. 30, 2012) | N/A | N/A | N/A | N/A | N/A | 758 kWh/yr | O.50 – VA P.29 - NC | N/A | |
| | | NC | Docket No. E-22, Sub 500 (Dec. 17, 2013) | | | | | | 209 kWh/yr | Q – Gross and Net Cumulative | | |
| | | | VA | | N/A | N/A | N/A | N/A | N/A | 23,982 kWh/yr | O.57 – VA | N/A |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan | |
|-------|--|---------------------------------|--|---|------------------------------|----------------|------------------------|-----------------------|--|------------------------------|---|-----|
| | Non-Residential Energy Audit | | Case No. PUE-2011-00093 (Apr. 30, 2012) | | | | | | | P.36 - NC | | |
| | | NC | Docket No. E-22, Sub 495 (Dec. 16, 2013) | | | | | | 12,838 kWh/yr | Q – Gross and Net Cumulative | | |
| | Non-Residential Duct Testing and Sealing | VA | Case No. PUE-2011-00093 (Apr. 30, 2012) | N/A | N/A | N/A | N/A | N/A | N/A | 15,491 kWh/yr | O.56 – VA P.35 - NC | N/A |
| | | NC | Docket No. E-22, Sub 496 (Dec. 17, 2013) | | | | | | | 12,621 kWh/yr | Q – Gross and Net Cumulative | |
| III | Non-Residential Lighting Systems & Controls | VA | Case No. PUE-2013-00072 (Apr. 29, 2014) | N/A | N/A | N/A | N/A | N/A | 45,611 kWh/yr | O.59 – VA P.38 - NC | N/A | |
| | | NC | Docket No. E-22, Sub 508 (Oct. 27, 2014) | | | | | | 15,090 kWh/yr | Q – Gross and Net Cumulative | | |
| | Non-Residential Heating & Cooling Efficiency | VA | Case No. PUE-2013-00072 (Apr. 29, 2014) | N/A | N/A | N/A | N/A | N/A | N/A | 27,248 kWh/yr | O.58 – VA P.37 - NC | N/A |
| | | NC | Docket No. E-22, Sub 507 (Oct. 27, 2014) | | | | | | | 2,062 kWh/yr | Q – Gross and Net Cumulative | |
| | Non-Residential Solar Window Film | VA | Case No. PUE-2013-00072 (Apr. 29, 2014) | N/A | N/A | N/A | N/A | N/A | N/A | 6,440 kWh/yr | O.60 – VA P.39 - NC | N/A |
| | | NC | Docket No. E-22 Sub 509 (Oct. 16, 2018) | | | | | | | 6,974 kWh/yr | Q – Gross and Net Cumulative | |
| | IV | Residential Appliance Recycling | VA | Case No. PUE-2014-00071 (Apr. 24, 2015) | N/A | N/A | N/A | N/A | N/A | 499 kWh/yr | O.53 – VA Q – Gross and Net Cumulative | N/A |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|-----------------------------------|--|-------|--|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|---|-----------|
| | Residential Income and Age Qualifying Home Improvement | VA | Case No. PUE-2014-00071 (Apr. 24, 2015) | N/A | N/A | N/A | N/A | N/A | 385 kWh/yr | O.61 – VA P.40 - NC | N/A |
| | | NC | Docket No. E-22 SUB 523 (Oct. 6, 2015) Suspension: Docket No. E-22 SUB 523 (Nov. 6, 2017) Reopening: Docket No. E-22 SUB (Jun. 26, 2018) | | | | | | 622 kWh/yr | Q – Gross and Net Cumulative | |
| V | Residential Retail LED | NC | Docket No. E-22, Sub 539 (Dec. 20, 2016) | N/A | N/A | N/A | N/A | N/A | 21 kWh/yr | P.32 - NC Q – Gross and Net Cumulative | N/A |
| | Small Business Improvement | VA | Case No. PUE-2015-00089 (Apr. 19, 2016) | N/A | N/A | N/A | N/A | N/A | 20,401 kWh/yr | O.62 – VA P.41 - NC | N/A |
| | | NC | Docket No. E-22 Sub 538 (Oct. 26, 2016) | | | | | | 24,235 kWh/yr | Q – Gross and Net Cumulative | |
| Programs Launching in 2023 | | | | | | | | | | | |
| X | Non-Residential Income and Age Qualifying | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.38 - VA Q – Gross and Net Cumulative | E.20 |
| | Residential Income and Age Qualifying Home Improvement | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.40 - VA Q – Gross and Net Cumulative | E.18 |



| Phase | Program | State | Case No(s). and Order Date(s) | EM&V Update Description | Updated Factor/ Value Source | Effective Date | Previous Factor/ Value | Updated Factor/ Value | Participant kWh/year (through year-end 2022) | Performance Indicators | EM&V Plan |
|-------|--|-------|---|-------------------------|------------------------------|----------------|------------------------|-----------------------|--|---|-----------|
| | Residential Income and Age Qualifying Target Report | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.41 - VA Q – Gross and Net Cumulative | E.22 |
| | Non-Residential Lighting System & Controls Extension | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.45 - VA Q – Gross and Net Cumulative | E.30 |
| | Non-Residential Small Business Behavioral | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.39 - VA Q – Gross and Net Cumulative | E.33 |
| | Non-Residential Data Center | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.42 - VA Q – Gross and Net Cumulative | E.35 |
| | Non-Residential Healthcare | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.43 - VA Q – Gross and Net Cumulative | E.36 |
| | Non-Residential Hotel and Lodging | VA | Case No. PUR-2021-00247 (Aug. 10, 2022) | N/A | N/A | N/A | N/A | N/A | N/A | O.44 - VA Q – Gross and Net Cumulative | E.37 |
| | Voltage Optimization | VA | Case No. PUR-2021-00247 | N/A | N/A | N/A | N/A | N/A | N/A | O.46 - VA Q – Gross and Net Cumulative | E.46 |

OFFICIAL COPY
Jun 15 2023



1.7 Adjustments and/or corrections to prior years' calculations

DNV retrospectively adjusted and corrected participation counts and deemed or gross energy savings values in the Residential Efficient Products Marketplace Program (DSM Phase VII) and Residential Thermostat Purchase and WeatherSmart Program (DSM Phase VIII). 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 |
|--|--|
| <p>1. The Residential Efficient Products Marketplace (Phase VII) Program 2019-2021 participation, energy savings (kWh/year), summer demand reduction (kW), and winter demand reduction (kW) have been adjusted.</p> | <p>The non-residential sales factor was removed from the Appendix F calculations of participation, energy savings and demand reduction because sales of in-store lighting measures through this program produce gross savings through the non-residential sector. These changes resulted in a 11% increase in participation, energy savings (kWh/year), summer demand reduction (kW), and winter demand reduction (kW) for 2019 through 2021. Participation increased from 8,889,900 to 9,848,932. The gross energy savings increased from 270,896,625 kWh/year to 299,608,541 kWh/year. The summer demand reduction (kW) increased from 24,943 kW to 27,570 kW. The winter demand reduction (kW) increased from 21,830 kW to 24,158 kW.</p> |
| <p>2. The Residential Thermostat Purchase and WeatherSmart Program 2021 participation, energy savings (kWh/year), summer demand reduction (kW), and winter demand reduction (kW) have been adjusted</p> | <p>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 to match the program design definition of participants in this program. Changes in total participants was also adjusted to account for the sub-group of enrolled customers, who unenrolled, and re-enrolled. These changes resulted in a 21% increase in participation from 4,462 to 5,392.</p> <p>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 report, the 2021 gross installed energy savings (kWh/year) for Purchase was adjusted from 1,891,264kWh/year to 1,417,020 kWh/year (25%).</p> <p>For the WeatherSmart component, 2021 summer and demand reductions had not been reported. As a results, in this report, the 2021 gross summer demand reduction was increased from 0 to 217 kW. And the 2021 winter demand reduction was increased from 0 to 29.7 kW.</p> |



2. ENERGY EFFICIENCY - RESIDENTIAL EFFICIENT PRODUCTS

The Residential Efficient Products Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|--|----|----|
| 7 | REEC | Residential Efficient Products Marketplace | ✓ | ✓ |
| 8 | REVEE | Residential Electric Vehicle Energy Efficiency and Demand Response | ✓ | |
| 8 | RKTS | Residential Kits | ✓ | ✓ |
| 8 | RTEE | Residential Thermostat Purchase and WeatherSmart | ✓ | ✓ |
| 9 | RSMH | Residential Smart Home | ✓ | ✓ |
| 9 | RWEE | Residential Water Savings | ✓ | ✓ |

Figure 2-1 and Figure 2-2 show the cumulative count of residential efficient product 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, Virginia Beach City, and Chesterfield. 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, Virginia Beach City, and Chesterfield. 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

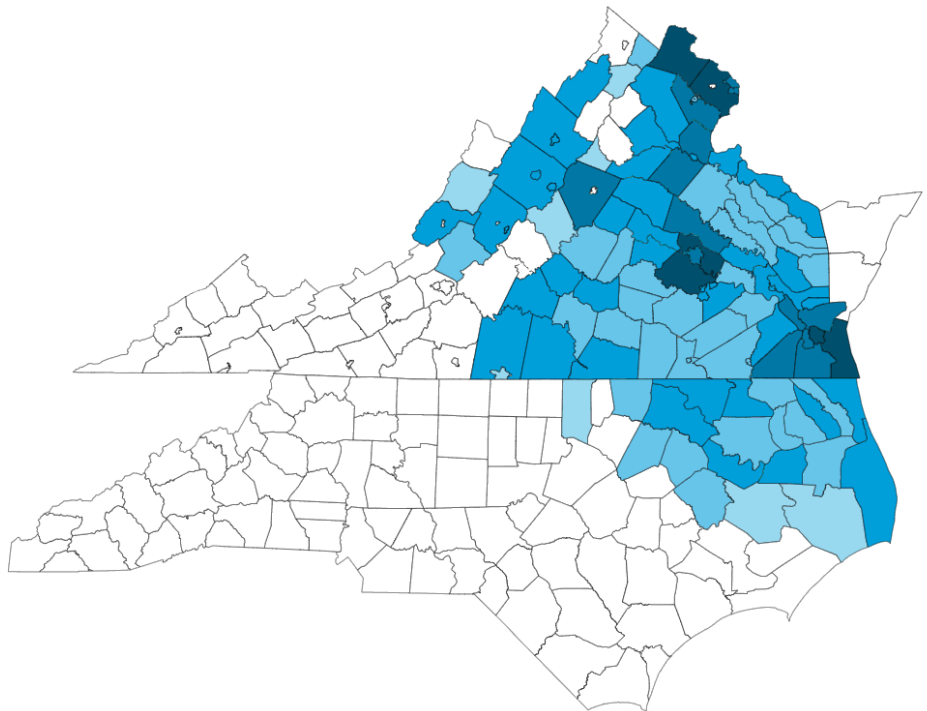
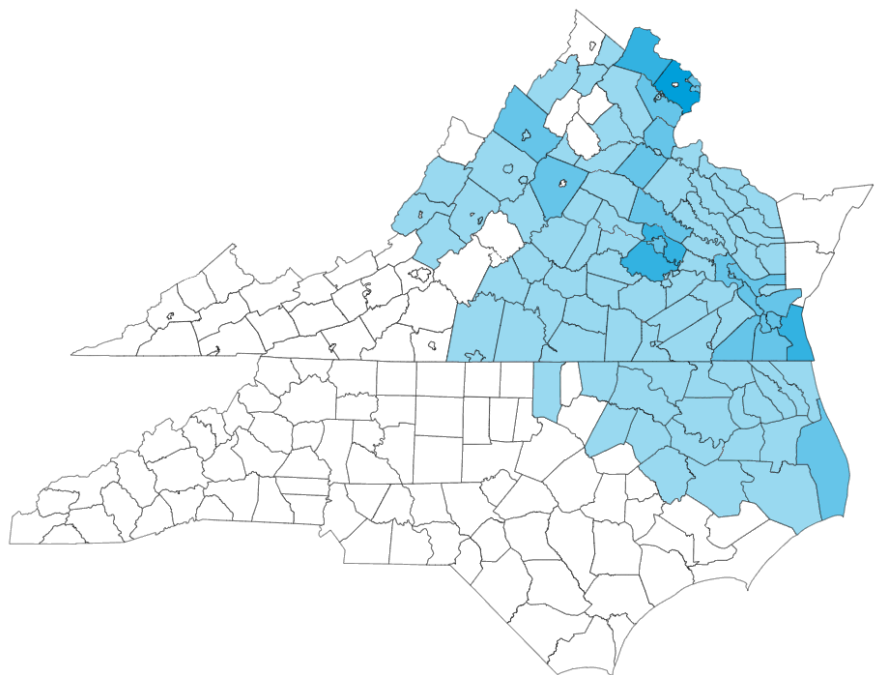


Figure 2-2. Virginia and North Carolina Residential Efficient Products Program Gross Annualized Energy Savings, by County
Gross Total Electric Impact

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



Case #: PUE-2018-00168

RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE

2019-Present
17 kWh/yr Average Net Savings Per Participant

Eligibility

- Active residential customer in the Dominion Energy's service territory
- Customer must be the party that is responsible for electric bill and either own the home or otherwise able to secure permission and authorization to complete the rebate submission
- Product must be a new ENERGY STAR® certified/labeled and operate with electricity

Measures

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



Incentivized **14,810,056** units, **142%** of planned units.



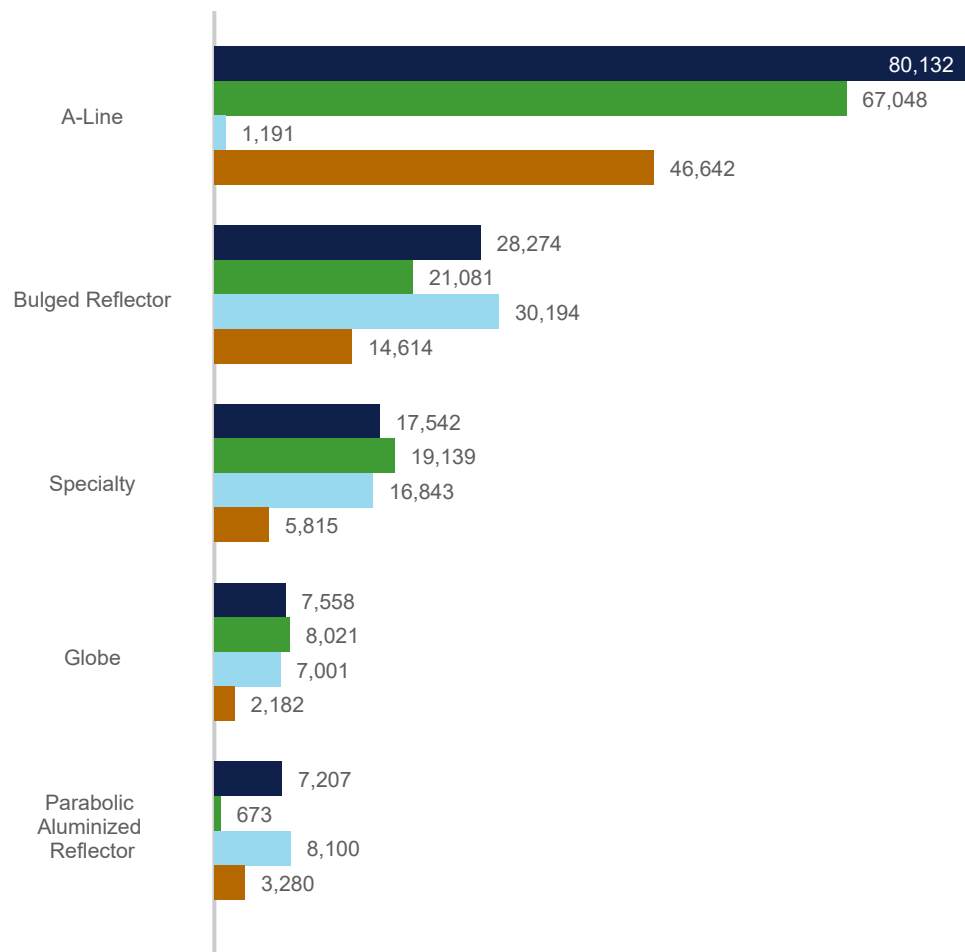
Achieved net annual energy savings of **252,747 MWh/year**, **88%** of planned energy savings



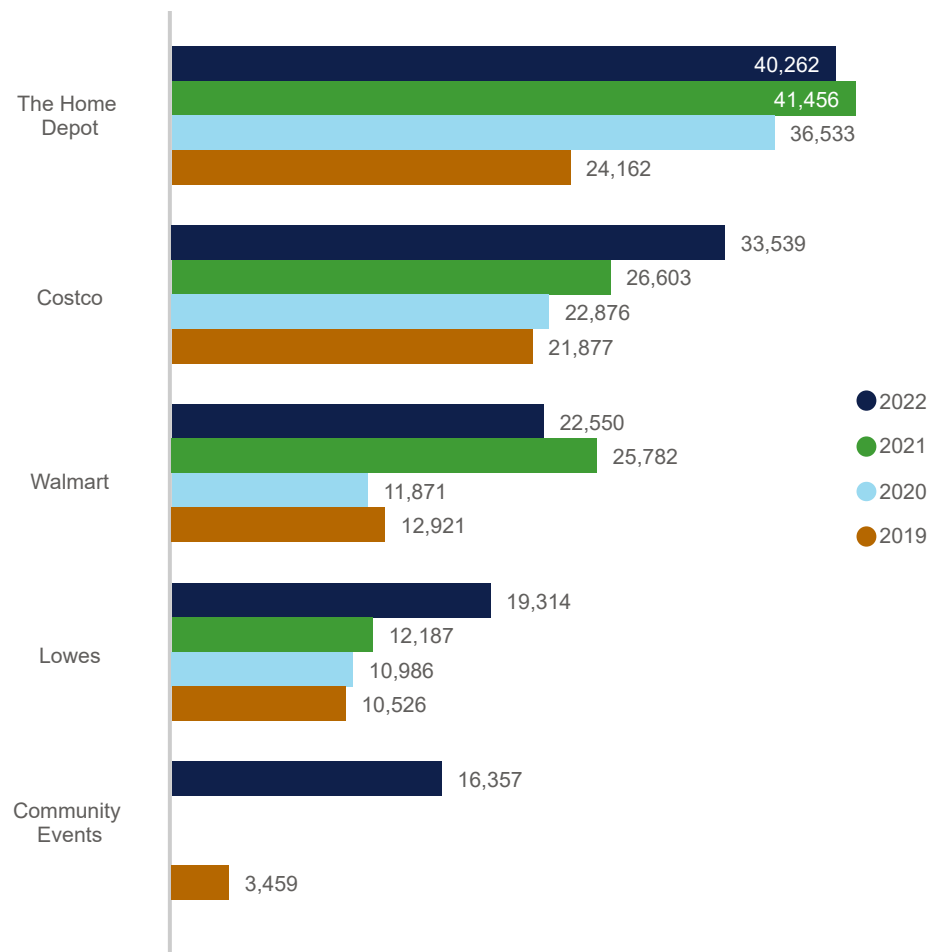
Spent **102%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------------|------------|-------------|-------------|---------------|
| Total Program Cost (\$) | | 4,636,049 | 8,063,058 | 8,459,198 | 9,952,004 | 31,110,309 |
| Total Program Participants (#) | | 2,785,850 | 2,596,966 | 4,263,855 | 5,163,385 | 14,810,056 |
| Total Gross Incremental Savings (kWh/yr) | | 81,119,512 | 89,881,928 | 122,317,496 | 150,318,593 | |
| Total Net Incremental Savings (kWh/yr) | | 56,783,659 | 60,072,654 | 60,277,598 | 75,613,324 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 7,421 | 8,295 | 11,274 | 13,821 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 5,195 | 5,532 | 5,549 | 6,946 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 23,472 | 29,038 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 11,620 | 14,653 | |
| Total Net Lifetime Savings (kWh) | | 10,721,834 | 97,696,950 | 243,569,390 | 458,306,856 | 4,193,557,348 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 5,195 | 10,726 | 16,276 | 23,221 | 23,221 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 11,620 | 26,274 | 26,274 |

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



TOTAL SAVINGS BY RETAILER
TOP 5 (MWH/YR)



RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE

2019-Present

17 kWh/yr Average Net Savings Per Participant

Eligibility

- Active residential customer in the Dominion Energy's service territory
- Customer must be the party that is responsible for electric bill and either own the home or otherwise able to secure permission and authorization to complete the rebate submission
- Product must be a new ENERGY STAR® certified/labeled and operate with electricity

Measures

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



Incentivized **287,462** units, **61%** of planned units.



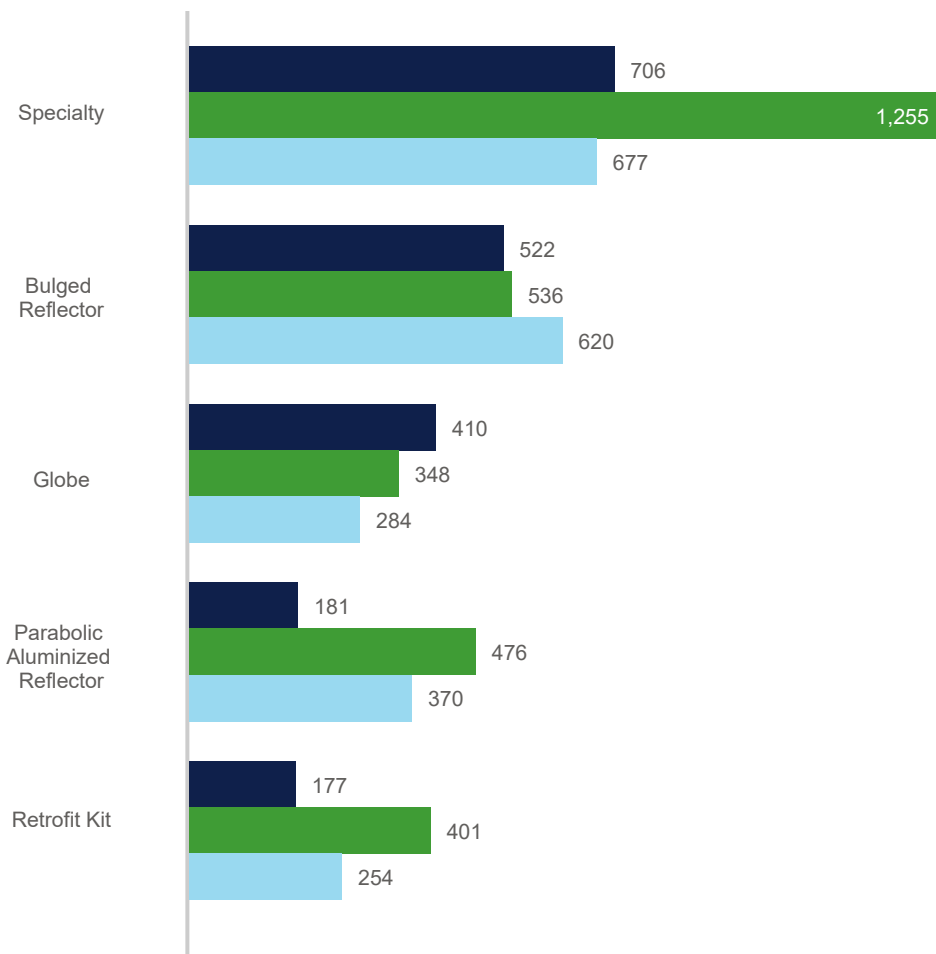
Achieved net annual energy savings of **4,800 MWh/year**, **35%** of planned energy savings



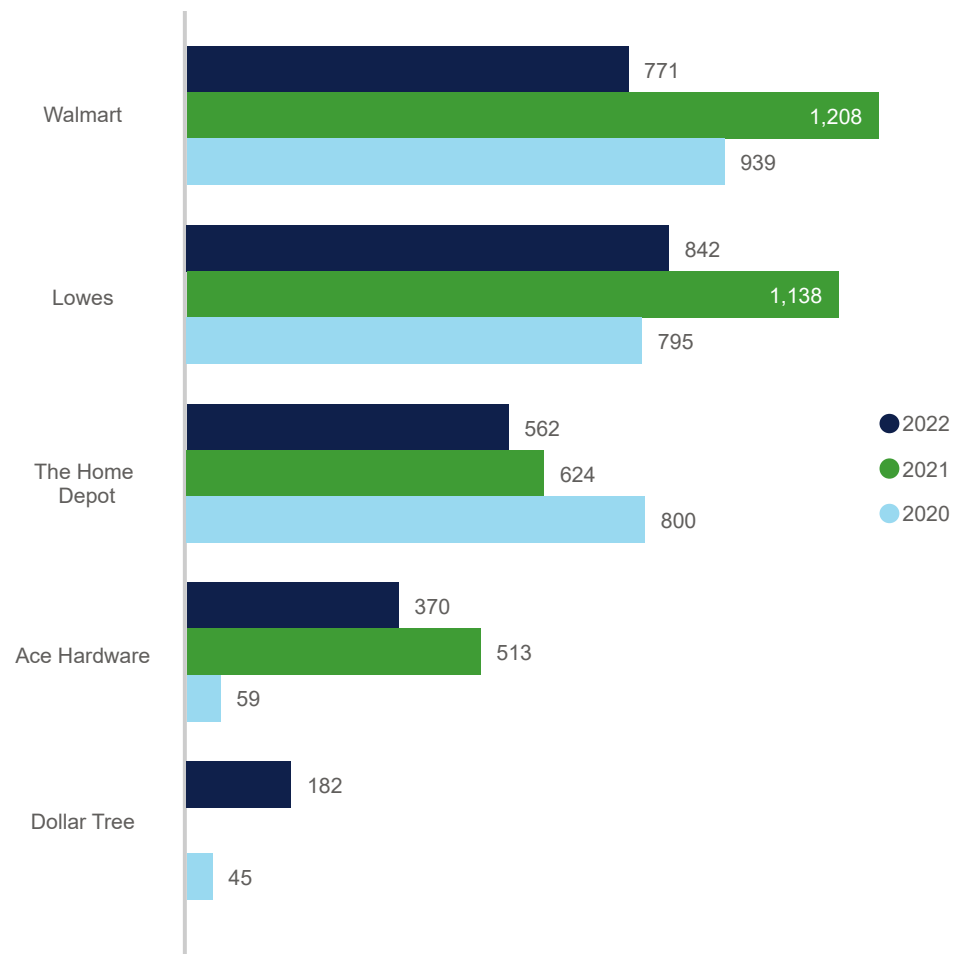
Spent **62%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|-----------|-----------|-----------|------------|
| Total Program Cost (\$) | | | 238,201 | 386,515 | 308,435 | 933,152 |
| Total Program Participants (#) | | | 86,493 | 116,668 | 84,301 | 287,462 |
| Total Gross Incremental Savings (kWh/yr) | | | 2,707,492 | 3,582,113 | 2,828,480 | |
| Total Net Incremental Savings (kWh/yr) | | | 1,796,481 | 1,676,053 | 1,327,228 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 249 | 330 | 261 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 165 | 154 | 122 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 686 | 543 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 323 | 256 | |
| Total Net Lifetime Savings (kWh) | | | 815,799 | 3,490,569 | 7,512,194 | 79,597,713 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 165 | 319 | 441 | 441 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 323 | 579 | 579 |

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



TOTAL SAVINGS BY RETAILER
TOP 5 (MWH/YR)





Case #: PUR-2019-00201

RESIDENTIAL ELECTRIC VEHICLE ENERGY EFFICIENCY AND DEMAND RESPONSE

2020-Present

106 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Installation of level 2 EV chargers as a pathway to enrolling in the EV Charger Rewards Program



Enrolled **299** customers, **23%** of planned participation



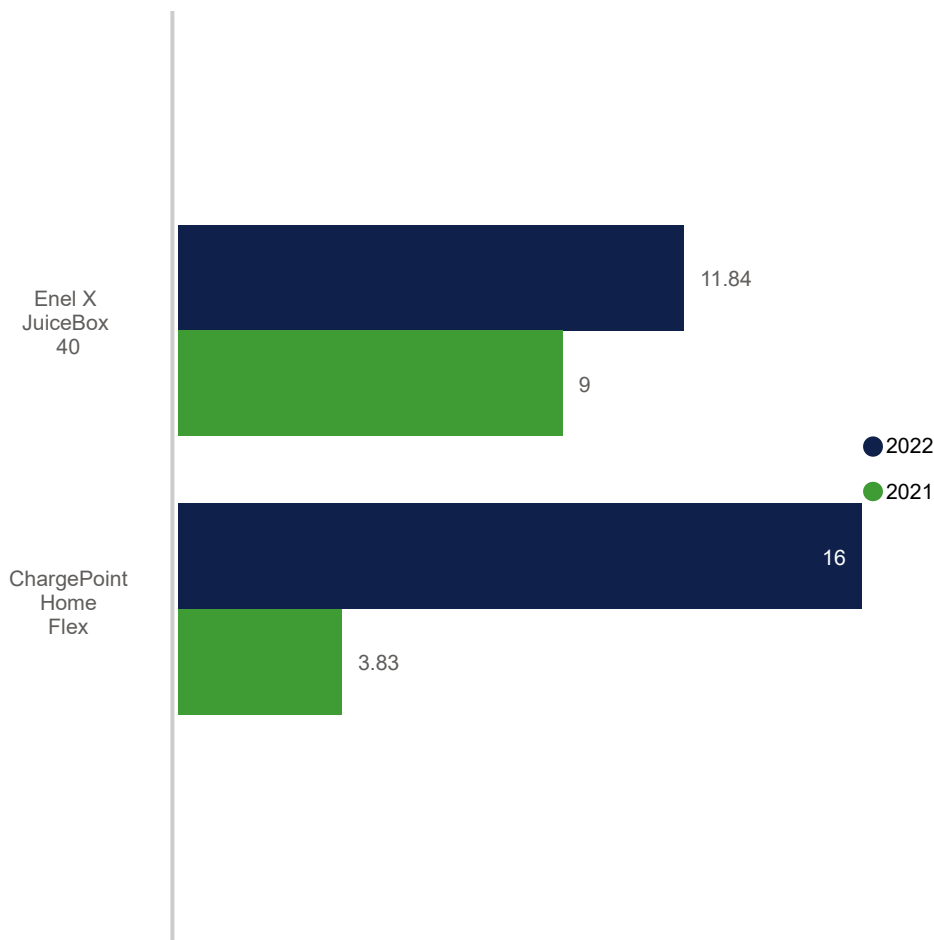
Achieved net annual energy savings of **31,707 kWh/year**, **7%** of planned energy savings



Spent **78%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|----------|
| Total Program Cost (\$) | | | 14,517 | 282,385 | 277,166 | 574,068 |
| Total Program Participants (#) | | | 0 | 93 | 206 | 299 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 12,379 | 27,255 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 9,903 | 21,804 | |
| 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 | 1,898 | 20,914 | 317,166 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY CHARGER MODEL (MWH/YR)



Case #: PUR-2019-00201



RESIDENTIAL KITS

2020-Present

75 kWh/yr Average Net Savings Per Participant

Eligibility

- New customer residences in Dominion Energy's service territory
- To receive more than the basic energy efficiency kit, customers must confirm their address and account status as well as answer a questionnaire

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



Enrolled **54,903** customers, **97%** of planned participation



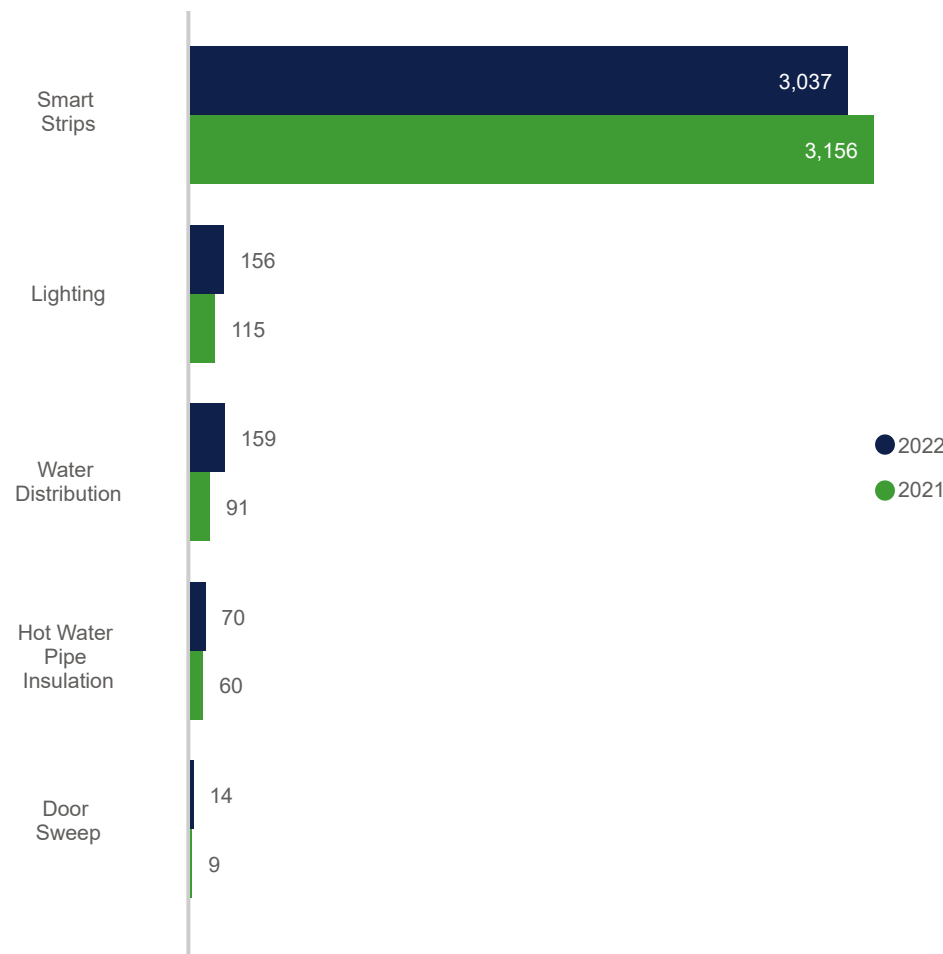
Achieved net annual energy savings of **4,130 MWh/year**, **28%** of planned energy savings



Spent **67%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|-----------|-----------|------------|
| Total Program Cost (\$) | | | 36,118 | 1,318,034 | 1,232,247 | 2,586,398 |
| Total Program Participants (#) | | | 0 | 28,113 | 26,790 | 54,903 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 3,442,999 | 3,439,997 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 2,065,800 | 2,063,998 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 302 | 301 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 181 | 181 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 335 | 332 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 201 | 199 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 574,173 | 3,528,129 | 24,834,536 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 181 | 362 | 362 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 201 | 400 | 400 |

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



RESIDENTIAL KITS

2020-Present

76 kWh/yr Average Net Savings Per Participant

Eligibility

- New customer residences in Dominion Energy's service territory
- To receive more than the basic energy efficiency kit, customers must confirm their address and account status as well as answer a questionnaire

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



Enrolled **2,717** customers, **75%** of planned participation



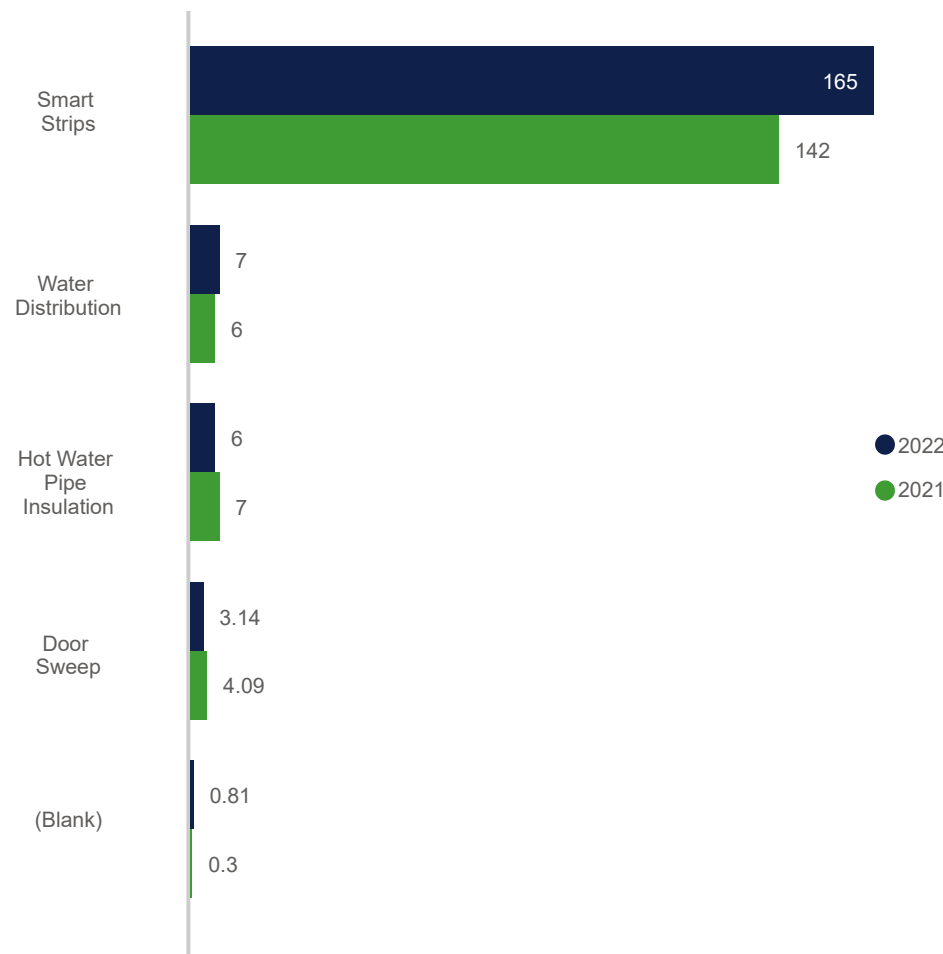
Achieved net annual energy savings of **205,205 kWh/year**, **22%** of planned energy savings



Spent **52%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|---------|---------|-----------|
| Total Program Cost (\$) | | | | 57,116 | 69,433 | 126,549 |
| Total Program Participants (#) | | | | 1,264 | 1,453 | 2,717 |
| Total Gross Incremental Savings (kWh/yr) | | | | 159,580 | 182,428 | |
| Total Net Incremental Savings (kWh/yr) | | | | 95,748 | 109,457 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 14 | 16 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 8 | 10 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 15 | 18 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 9 | 11 | |
| Total Net Lifetime Savings (kWh) | | | | 28,470 | 170,333 | 1,238,275 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 8 | 18 | 18 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 9 | 20 | 20 |

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



Case No. PUR-2019-00201

OFFICIAL COPY

Jun 15 2023

RESIDENTIAL THERMOSTAT PURCHASE AND WEATHERSMART

2020-Present

208 kWh/yr Average Net Savings Per Participant

Eligibility

- Active residential customer in Virginia who lives 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.

Measures

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



Enrolled **12,957** customers, **92%** of planned participation



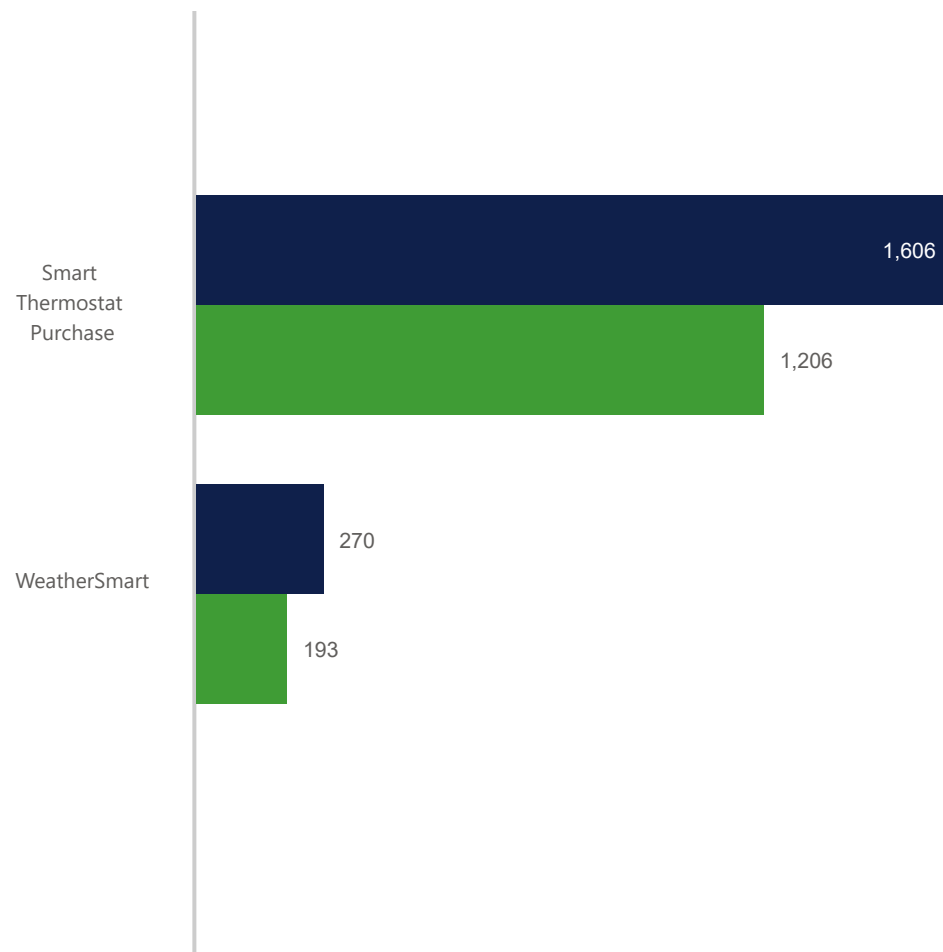
Achieved net annual energy savings of **2,689 MWh/year**, **51%** of planned energy savings



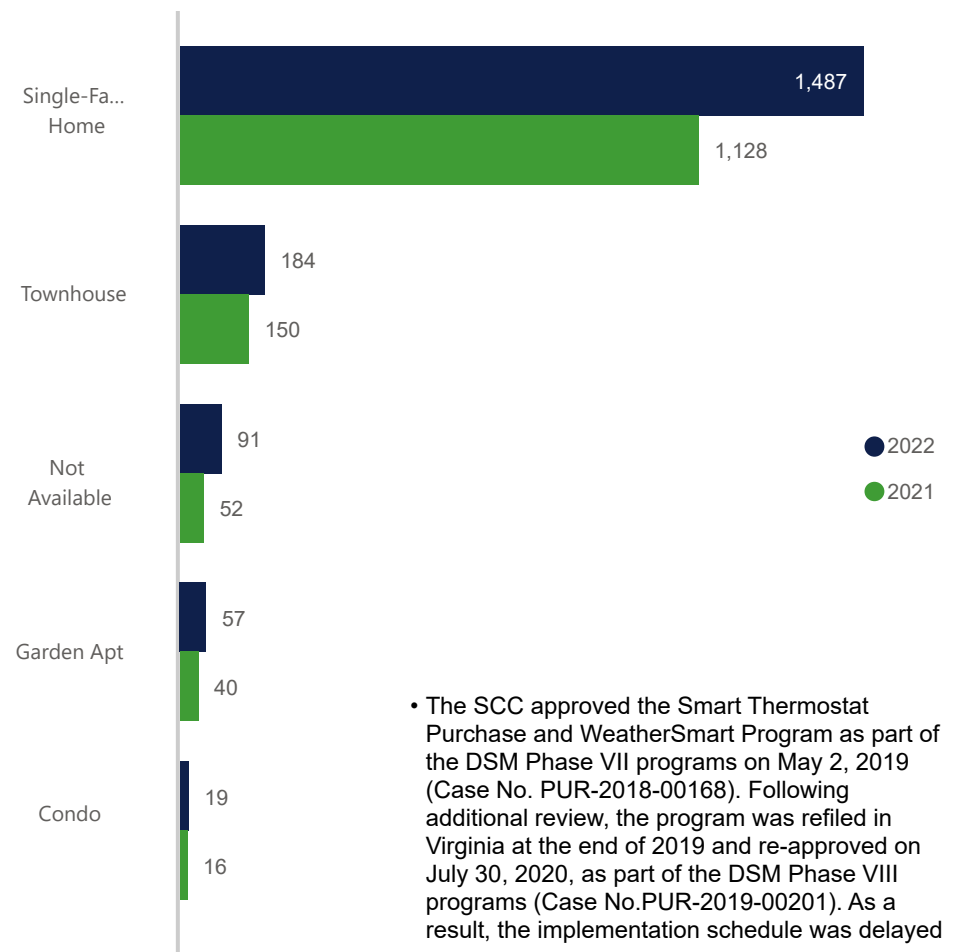
Spent **95%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|-----------|-----------|------------|
| Total Program Cost (\$) | | | 99,671 | 1,002,656 | 1,146,575 | 2,248,903 |
| Total Program Participants (#) | | | 0 | 5,321 | 7,636 | 12,957 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 1,399,012 | 1,875,496 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 1,148,128 | 1,540,892 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 212 | 287 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 202 | 273 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 29 | 43 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 27 | 41 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 364,664 | 1,895,570 | 17,100,343 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 202 | 273 | 273 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 27 | 41 | 41 |

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.

RESIDENTIAL THERMOSTAT PURCHASE AND WEATHERSMART

2021-Present

232 kWh/yr Average Net Savings Per Participant

Eligibility

- Active residential customer in Virginia who lives 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.

Measures

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



Enrolled **336** customers, **38%** of planned participation



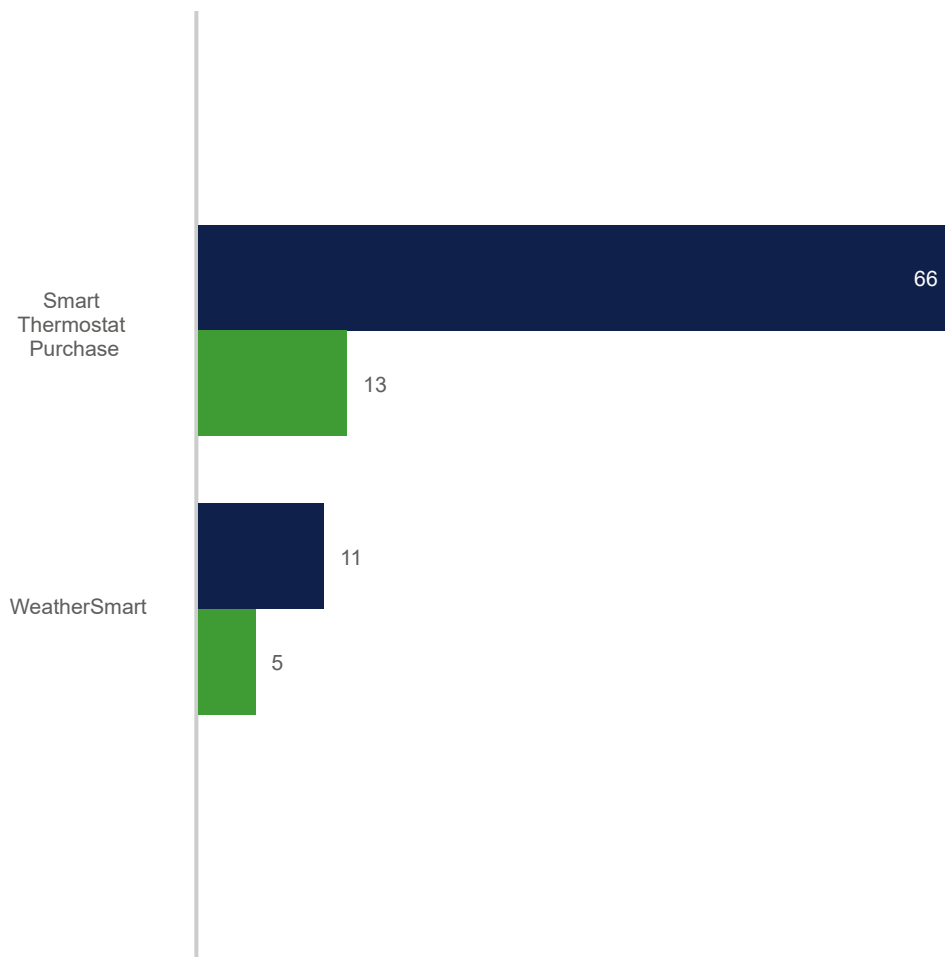
Achieved net annual energy savings of **78,055 kWh/year**, **23%** of planned energy savings



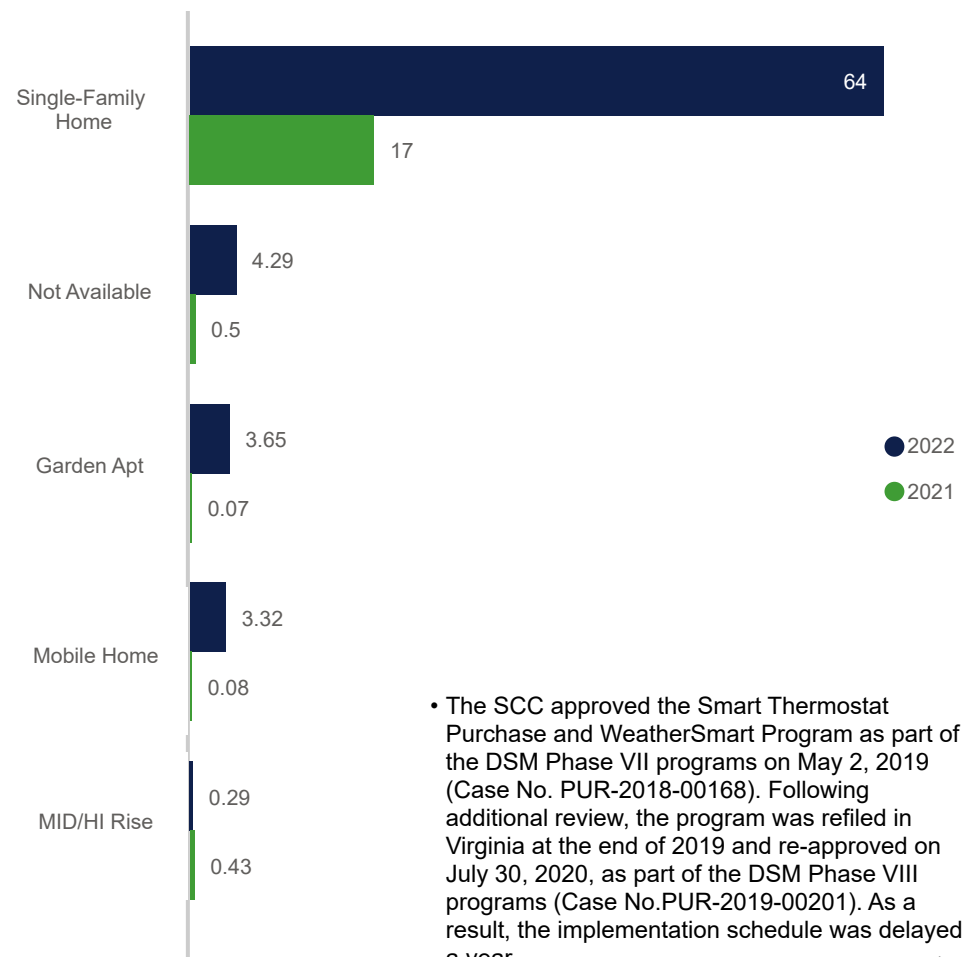
Spent **47%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|--------|----------|
| Total Program Cost (\$) | | | | 19,202 | 50,894 | 70,096 |
| Total Program Participants (#) | | | | 71 | 265 | 336 |
| Total Gross Incremental Savings (kWh/yr) | | | | 18,008 | 76,560 | |
| Total Net Incremental Savings (kWh/yr) | | | | 15,227 | 62,828 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 5 | 9 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 4 | 9 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 1 | 2 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 1 | 2 | |
| Total Net Lifetime Savings (kWh) | | | | 2,502 | 32,830 | 481,931 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 4 | 9 | 9 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 1 | 2 | 2 |

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.



Case #: PUR-2020-00274

RESIDENTIAL SMART HOME

2021-Present

458 kWh/yr Average Net Savings Per Participant

Eligibility

- Residential customers in Dominion Energy's service territory in the Commonwealth of Virginia
- Must use residential rate schedule and not participate in DSM Phase VIII Residential Smart Thermostat (EE) Program.
- Customer must be responsible for the electric bill and either own the residence or able to secure permission from the owner.

Measures

- Smart plugs
- Connected 9.5 W ENERGY STAR LED
- Smart home hub with entry / motion sensor
- Smart thermostat with voice control and temperature / humidity sensor
- Smart home energy monitor (with solar option)



Enrolled **15** customers, **0.31%** of planned participation



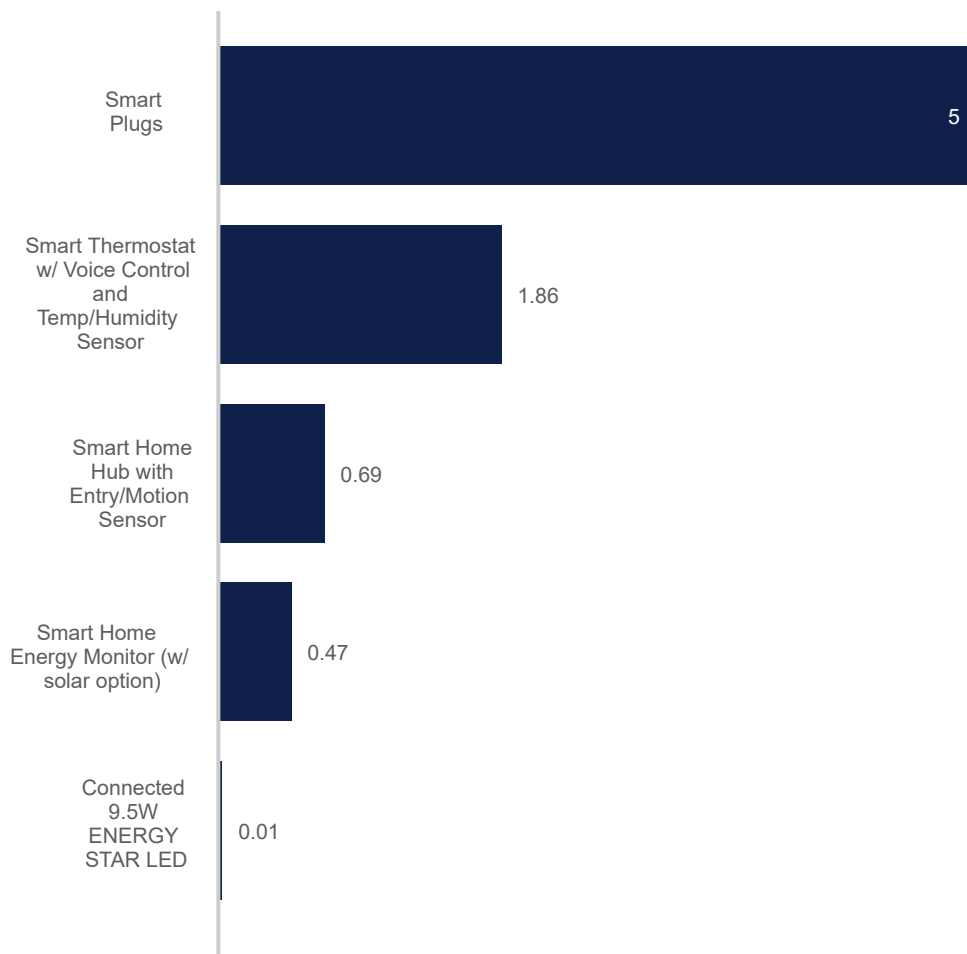
Achieved net annual energy savings of **6,874 kWh/year**, **0.12%** of planned energy savings



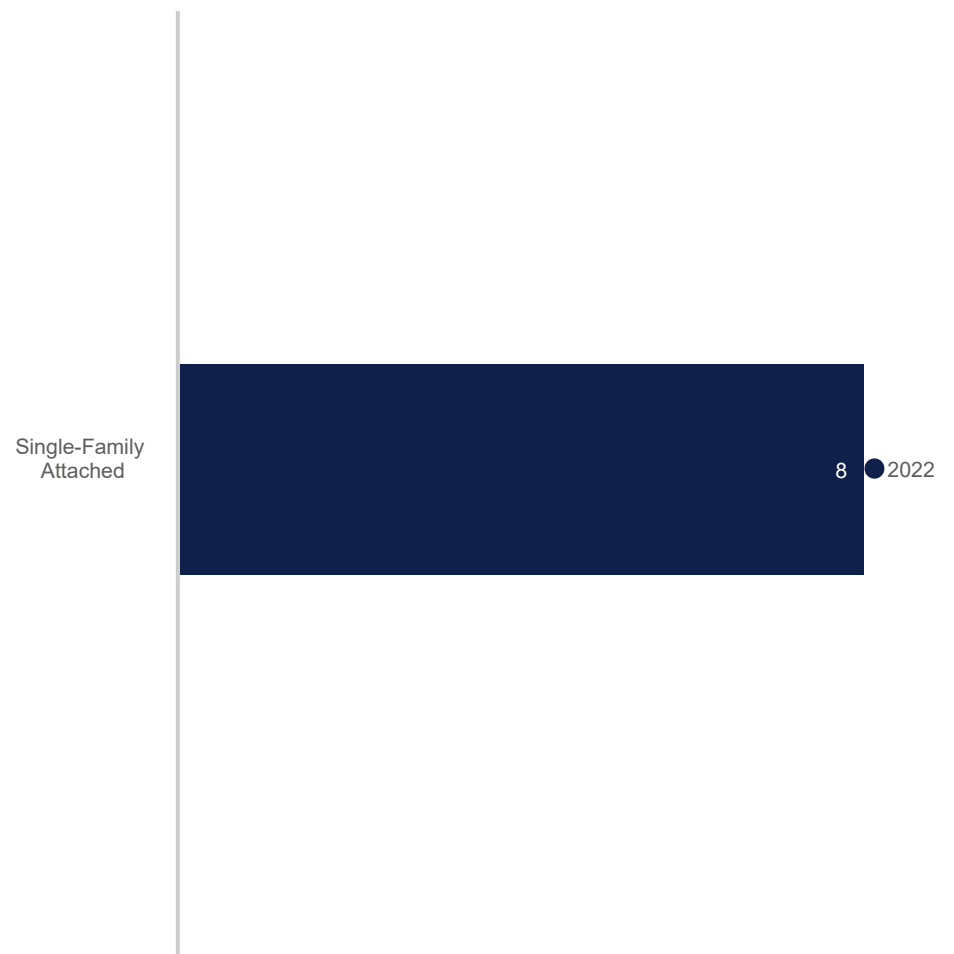
Spent **36%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|-------|---------|----------|
| Total Program Cost (\$) | | | | 9,058 | 720,794 | 729,852 |
| Total Program Participants (#) | | | | 0 | 15 | 15 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 8,087 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 6,874 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 1 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 3 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 2 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 1,511 | 42,591 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 0 | 0 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 2 | 2 |

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



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



RESIDENTIAL SMART HOME

2022-Present

326 kWh/yr Average Net Savings Per Participant

Eligibility

- Residential customers in Dominion Energy's service territory in the North Carolina
- Must use residential rate schedule and not participate in DSM Phase VII Residential Smart Thermostat (EE) Program.
- Customer must be responsible for the electric bill and either own the residence or able to secure permission from the owner.

Measures

- Smart plugs
- Connected 9.5 W ENERGY STAR LED
- Smart home hub with entry / motion sensor
- Smart thermostat with voice control and temperature / humidity sensor
- Smart home energy monitor (with solar option)



Enrolled **1** customers, **0.32%** of planned participation



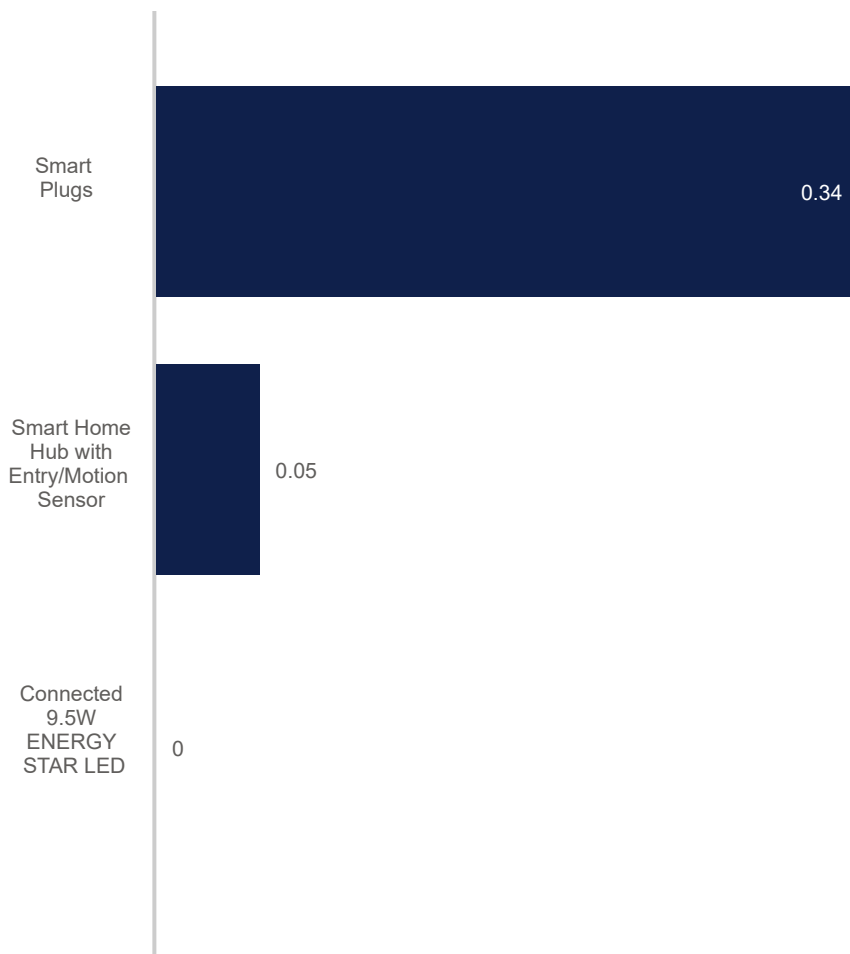
Achieved net annual energy savings of **326 kWh/year**, **0.09%** of planned energy savings



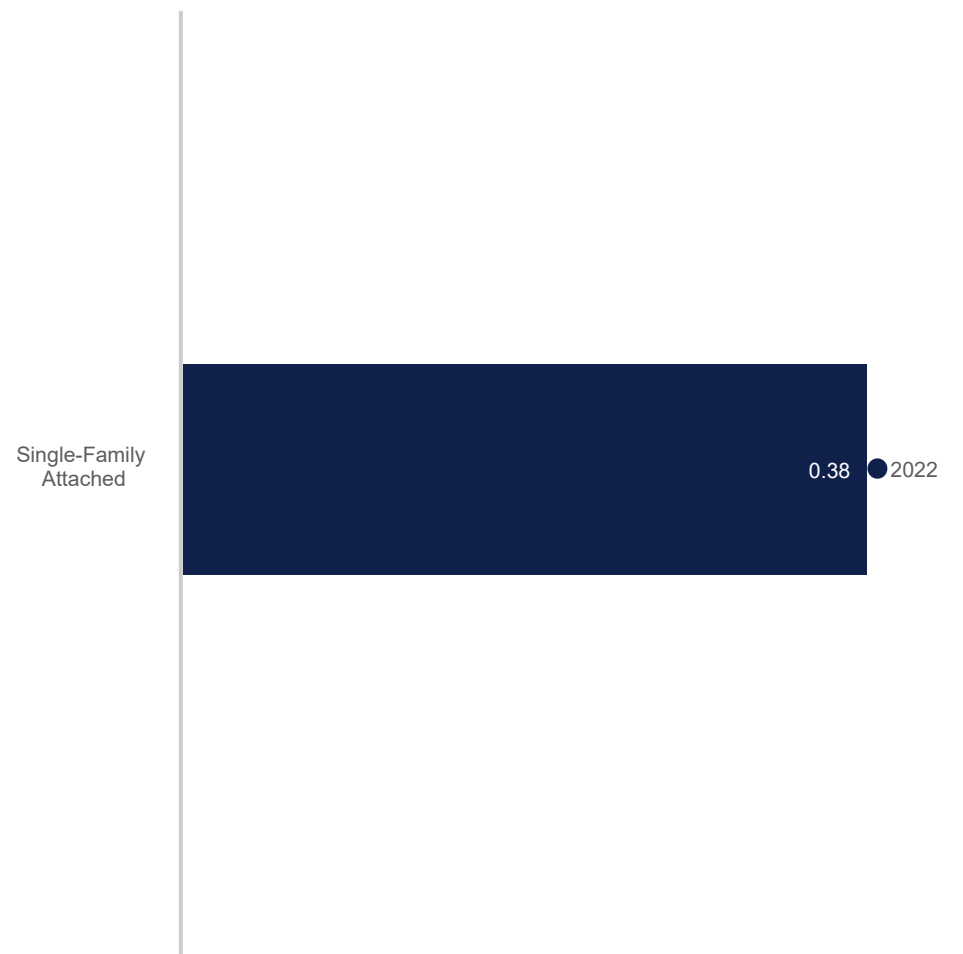
Spent **31%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|--------|----------|
| Total Program Cost (\$) | | | | | 16,505 | 16,505 |
| Total Program Participants (#) | | | | | 1 | 1 |
| Total Gross Incremental Savings (kWh/yr) | | | | | 383 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 326 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Total Net Lifetime Savings (kWh) | | | | | 36 | 1,830 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 0 | 0 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 0 | 0 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



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



Case #: PUR-2020-00274

RESIDENTIAL WATER SAVINGS

2021-Present

1,418 kWh/yr Average Net Savings Per Participant

Eligibility

- Residential customers in Dominion Energy's service territory in the Commonwealth of Virginia, using residential rate schedule and reside in single-family homes
- Customer must be responsible for the electric bill and either own the residence or able to secure permission from the owner to perform the recommended improvements.

Measures

- Domestic Hot Water Heat Pump
- Variable Speed Pool Pumps



Enrolled **62** customers, **7%** of planned participation



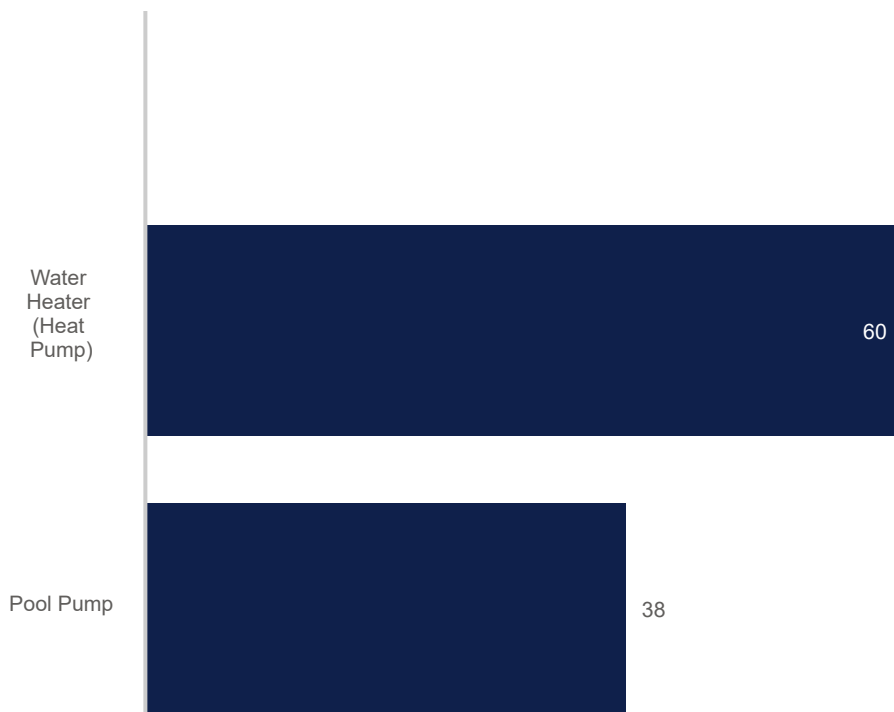
Achieved net annual energy savings of **87,925 kWh/year**, **5%** of planned energy savings



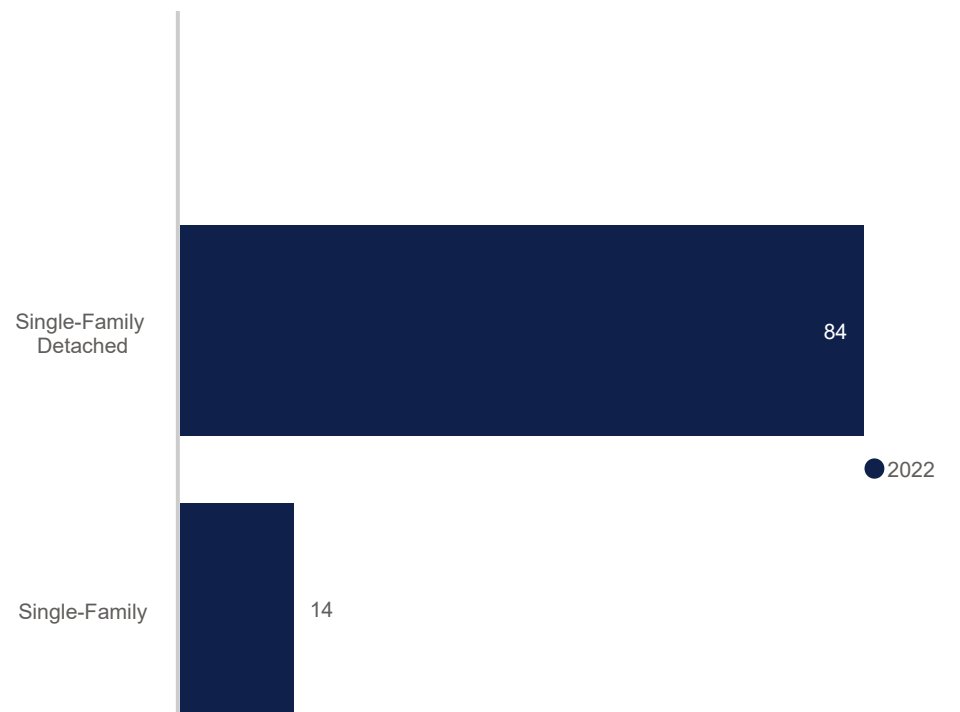
Spent **34%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|---------|-----------|
| Total Program Cost (\$) | | | | 10,197 | 256,790 | 266,986 |
| Total Program Participants (#) | | | | 0 | 62 | 62 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 97,694 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 87,925 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 12 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 11 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 16 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 14 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 12,585 | 1,040,532 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 11 | 11 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 14 | 14 |

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



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



RESIDENTIAL WATER SAVINGS

2022-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

- Residential customers in Dominion Energy's service territory in North Carolina, using residential rate schedule and reside in single-family homes
- Customer must be responsible for the electric bill and either own the residence or able to secure permission from the owner to perform the recommended improvements.

Measures

- Domestic Hot Water Heat Pump
- Variable Speed Pool Pumps



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

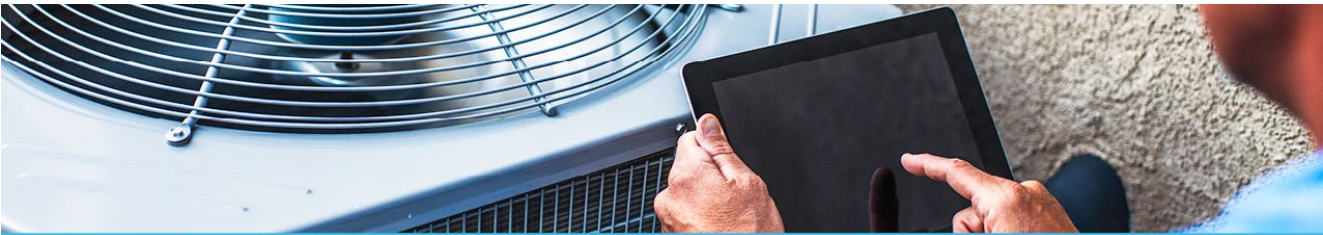


Achieved net annual energy savings of **0 kWh/year**, **0%** of planned energy savings



Spent **25%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|-------|----------|
| Total Program Cost (\$) | | | | | 5,048 | 5,048 |
| Total Program Participants (#) | | | | | 0 | |
| Total Gross Incremental Savings (kWh/yr) | | | | | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Total Net Lifetime Savings (kWh) | | | | | 0 | |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 0 | |



3. ENERGY EFFICIENCY - RESIDENTIAL ENERGY SERVICES

The Residential Energy Services Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|------------------------------------|----|----|
| 7 | RAR2 | Residential Appliance Recycling | ✓ | ✓ |
| 7 | RTHO | Residential Home Energy Assessment | ✓ | ✓ |
| 8 | RCEB | Residential Customer Engagement | ✓ | |
| 8 | RMHP | Residential Manufactured Housing | ✓ | |
| 8 | RMFP | Residential Multifamily | ✓ | |
| 8 | RHRF | Residential Retrofit | ✓ | ✓ |
| 9 | RVAU | Residential Virtual Energy Audit | ✓ | ✓ |

Figure 3-1 and Figure 3-2 show the cumulative count of residential energy 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, Virginia Beach City, and Chesterfield. 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 Chesterfield. In North Carolina, Dare, Currituck, and Halifax counties have the most energy savings.



Figure 3-1. Virginia and North Carolina Residential Energy Services 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

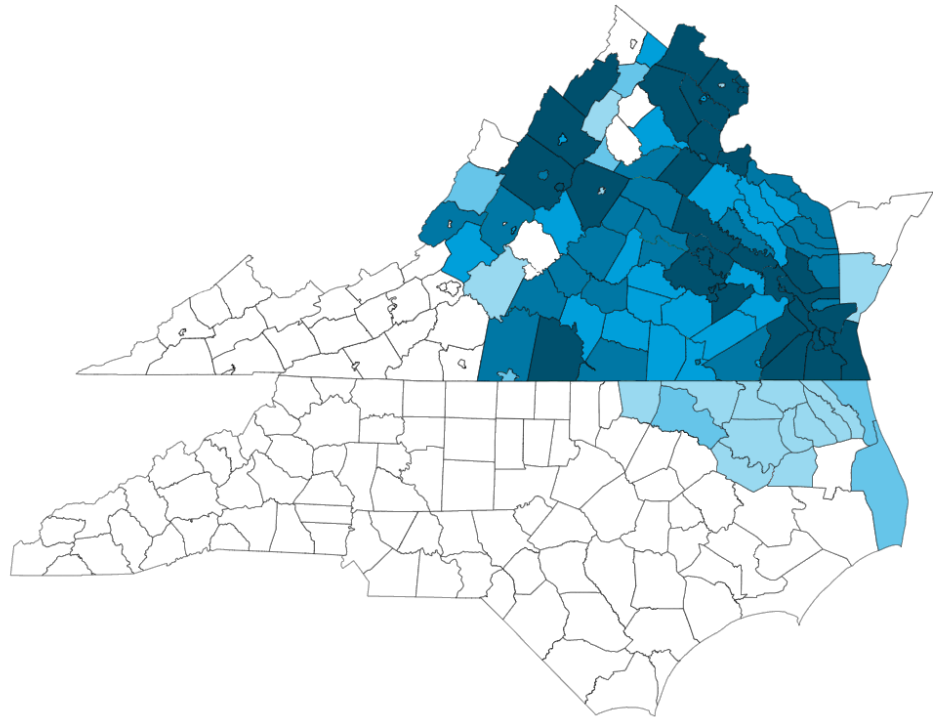
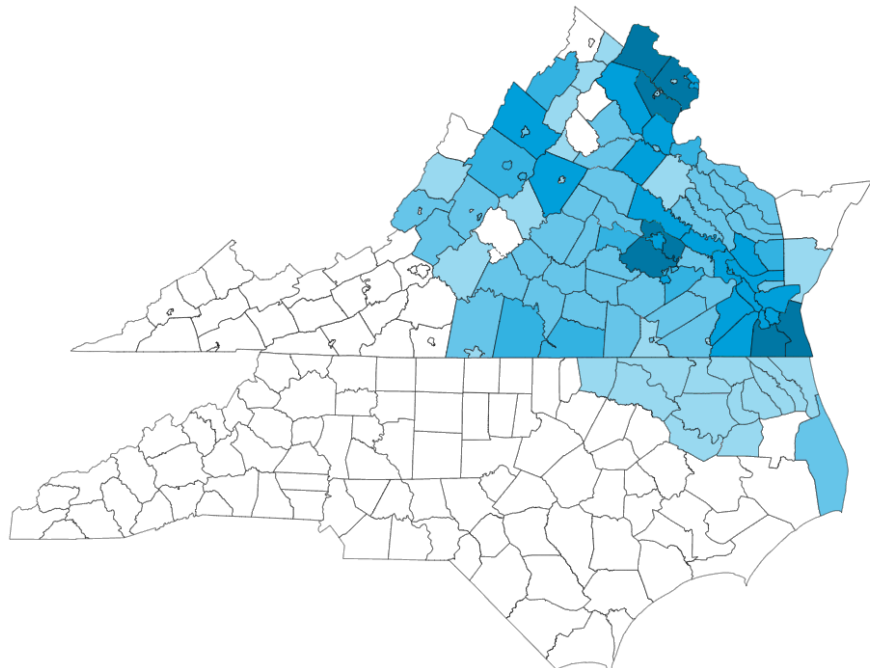


Figure 3-2. Virginia and North Carolina Residential Energy Services Program Gross Annualized Energy Savings, by County

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



Case #: PUE-2018-00168

RESIDENTIAL APPLIANCE RECYCLING

2019-Present

428 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

Measures

- Refrigerator recycling
- Freezer recycling



Incentivized **5,029** units, **16%** of planned units. Program operations in 2021 were impacted by COVID-19 pandemic, but resumed in Nov. 2021.



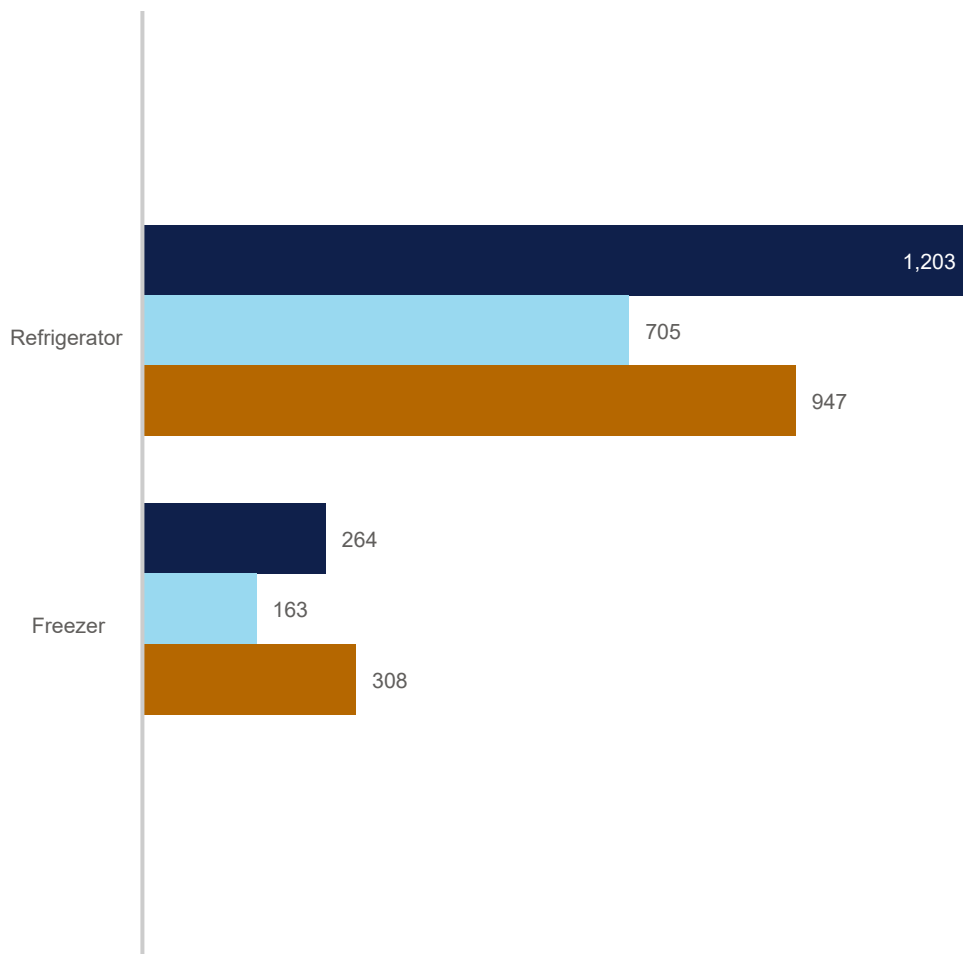
Achieved net annual energy savings of **2,155 MWh/year**, **14%** of planned energy savings



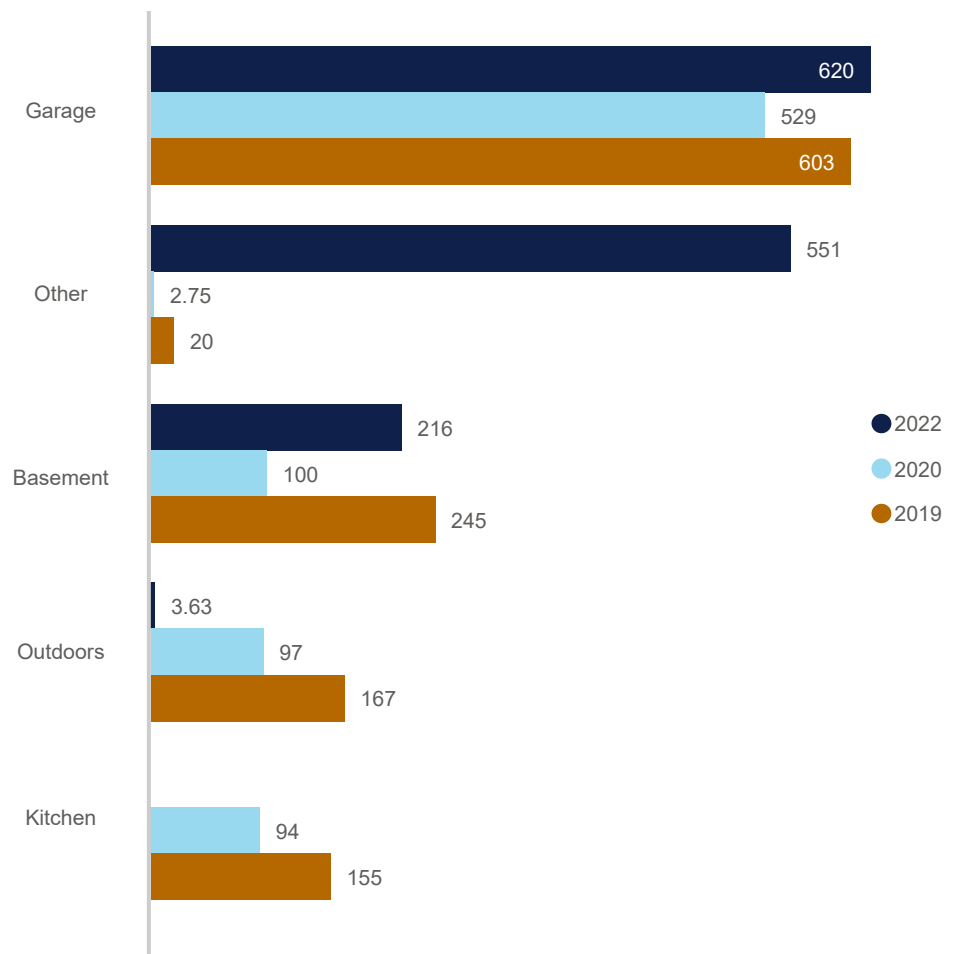
Spent **27%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|-----------|-----------|---------|-----------|------------|
| Total Program Cost (\$) | | 384,884 | 473,111 | 222,880 | 702,471 | 1,783,347 |
| Total Program Participants (#) | | 1,579 | 972 | 0 | 2,478 | 5,029 |
| Total Gross Incremental Savings (kWh/yr) | | 1,255,513 | 868,091 | 0 | 1,467,578 | |
| Total Net Incremental Savings (kWh/yr) | | 753,308 | 520,855 | 0 | 880,547 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 188 | 130 | 0 | 220 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 113 | 78 | 0 | 132 | |
| 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) | | 119,307 | 1,206,457 | 0 | 4,189,234 | 17,243,351 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 113 | 191 | 0 | 323 | 323 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY LOCATION TOP 5 (MWH/YR)



RESIDENTIAL APPLIANCE RECYCLING

2019-Present

450 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

Measures

- Refrigerator recycling
- Freezer recycling



Incentivized **19** units, **1%** of planned units. Program operations in 2021 were impacted by COVID-19 pandemic, but resumed in Nov. 2021.



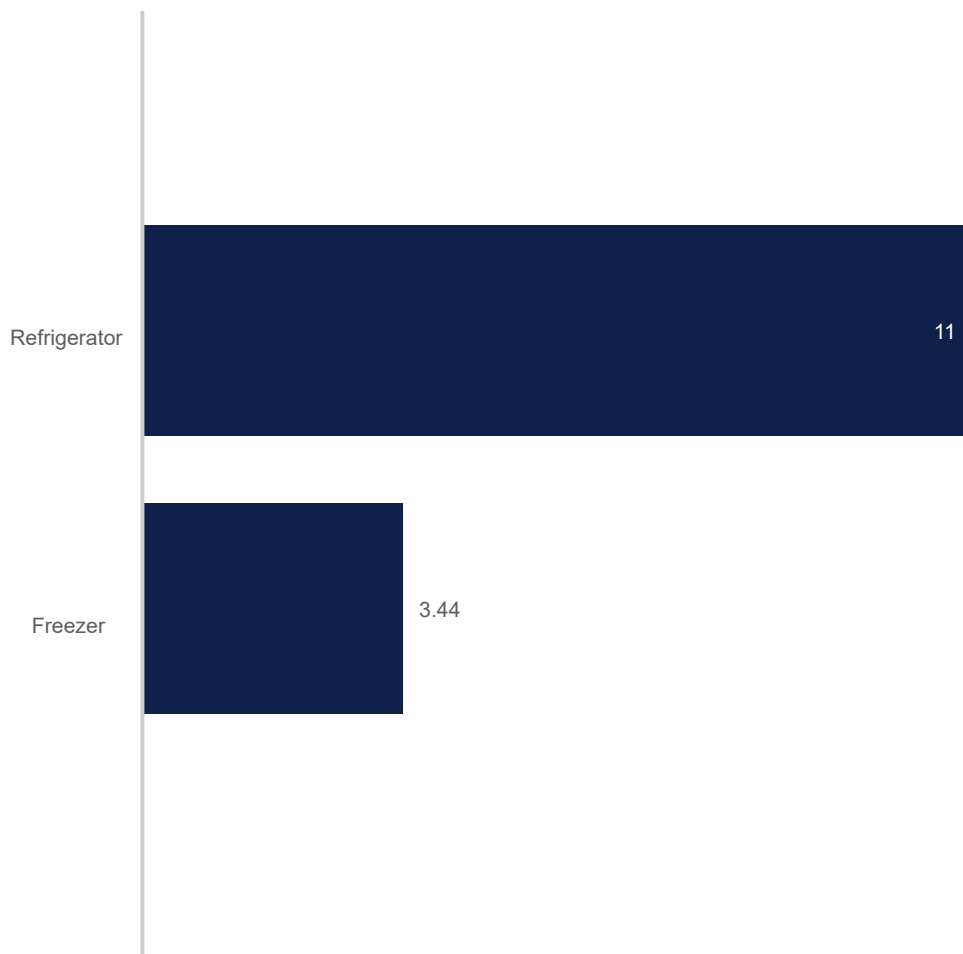
Achieved net annual energy savings of **8,556 kWh/year**, **1%** of planned energy savings



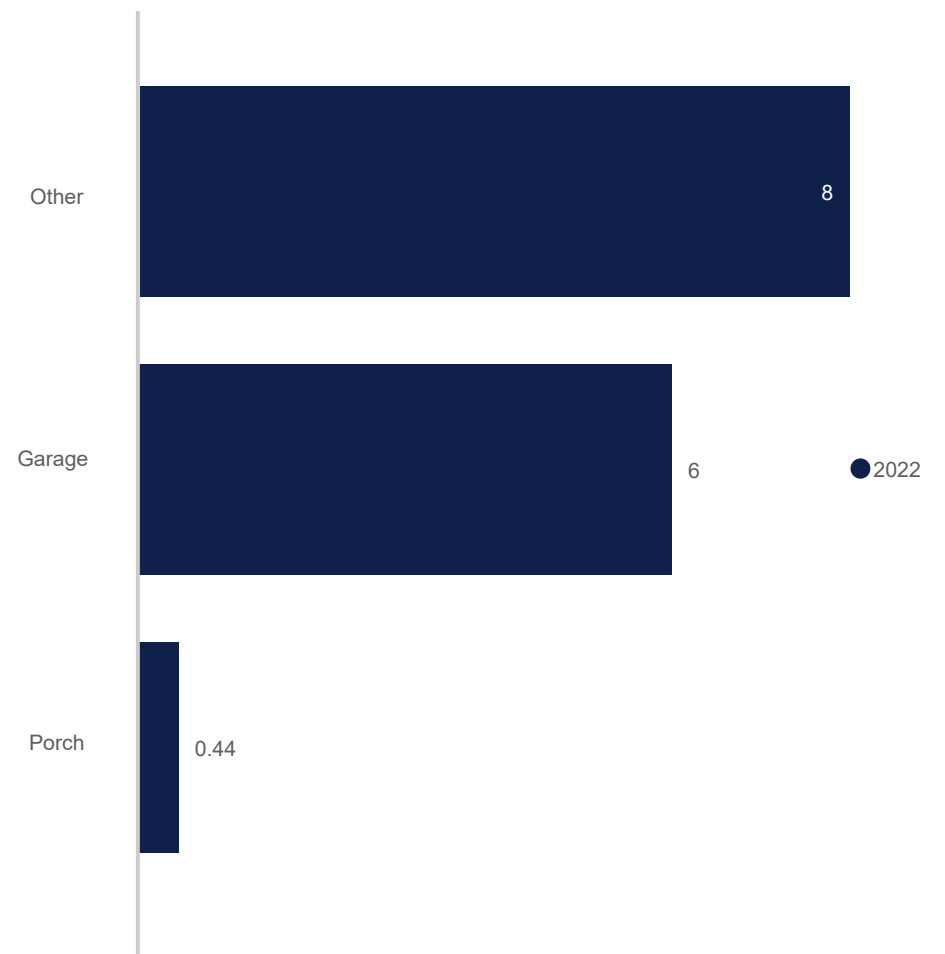
Spent **16%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|--------|--------|----------|
| Total Program Cost (\$) | | | 17,270 | 11,552 | 25,314 | 54,136 |
| Total Program Participants (#) | | | 0 | 0 | 19 | 19 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 0 | 14,260 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 0 | 8,556 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 2 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 1 | |
| 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 | 4,599 | 68,470 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 1 | 1 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY MEASURE TYPE
TOP 5 IN KWH



TOTAL SAVINGS BY BUILDING TYPE
TOP 5 IN KWH



Case #: PUE-2018-00168

RESIDENTIAL HOME ENERGY ASSESSMENT

2019-Present

593 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



Enrolled **19,164** customers, **18%** of planned participation



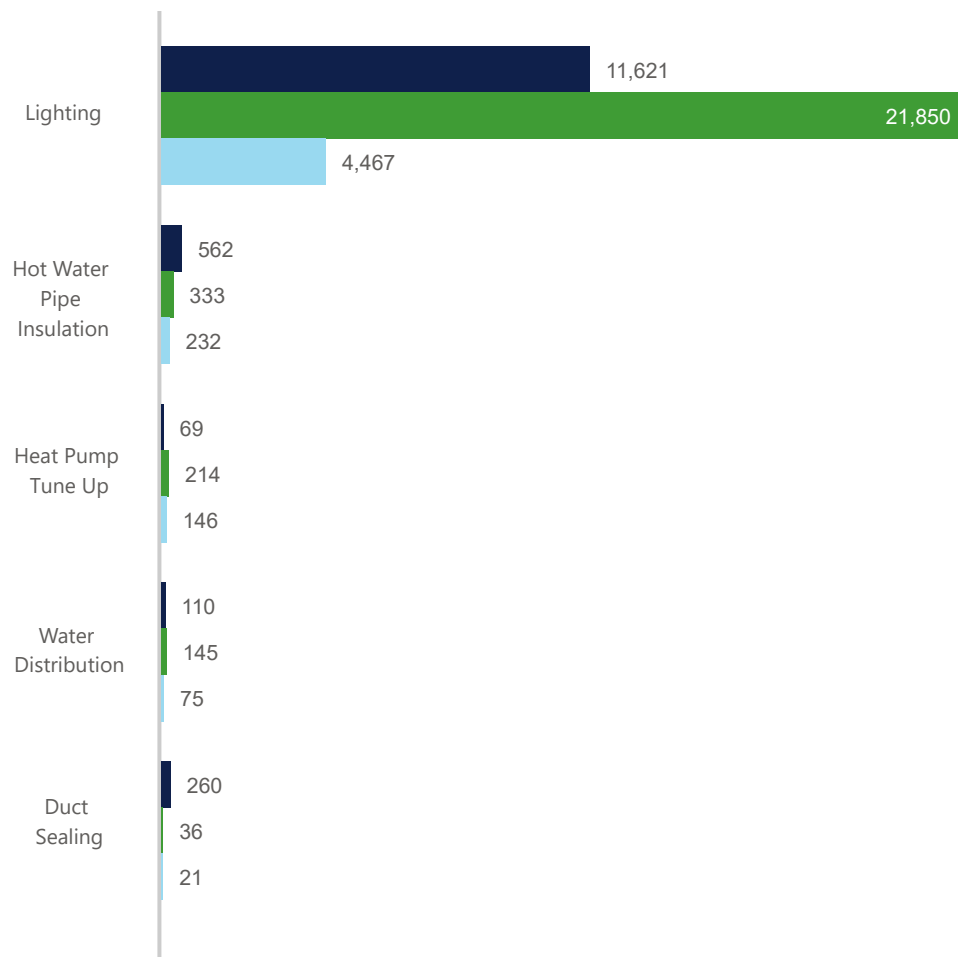
Achieved net annual energy savings of **11,357 MWh/year**, **30%** of planned energy savings



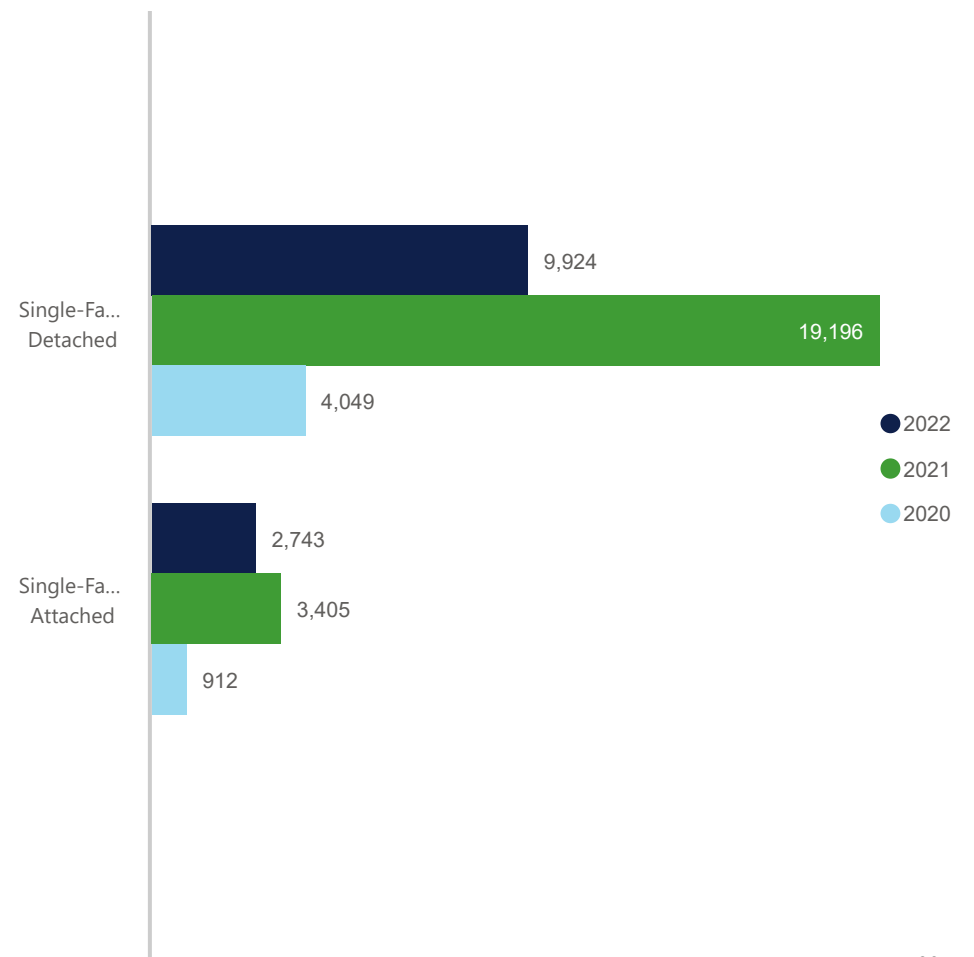
Spent **98%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|---------|-----------|------------|------------|-------------|
| Total Program Cost (\$) | | 715,145 | 2,981,049 | 7,652,974 | 4,661,476 | 16,010,645 |
| Total Program Participants (#) | | 0 | 2,738 | 9,917 | 6,509 | 19,164 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 4,960,666 | 22,601,069 | 12,667,811 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 1,091,347 | 5,198,246 | 5,067,125 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 411 | 1,414 | 1,025 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 90 | 325 | 410 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 3,163 | 1,724 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 728 | 690 | |
| Total Net Lifetime Savings (kWh) | | 0 | 479,992 | 4,288,465 | 13,252,724 | 141,990,560 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 90 | 416 | 826 | 826 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 728 | 1,417 | 1,417 |

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



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



RESIDENTIAL HOME ENERGY ASSESSMENT

2019-Present

478 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



Enrolled **67** customers, **1%** of planned participation



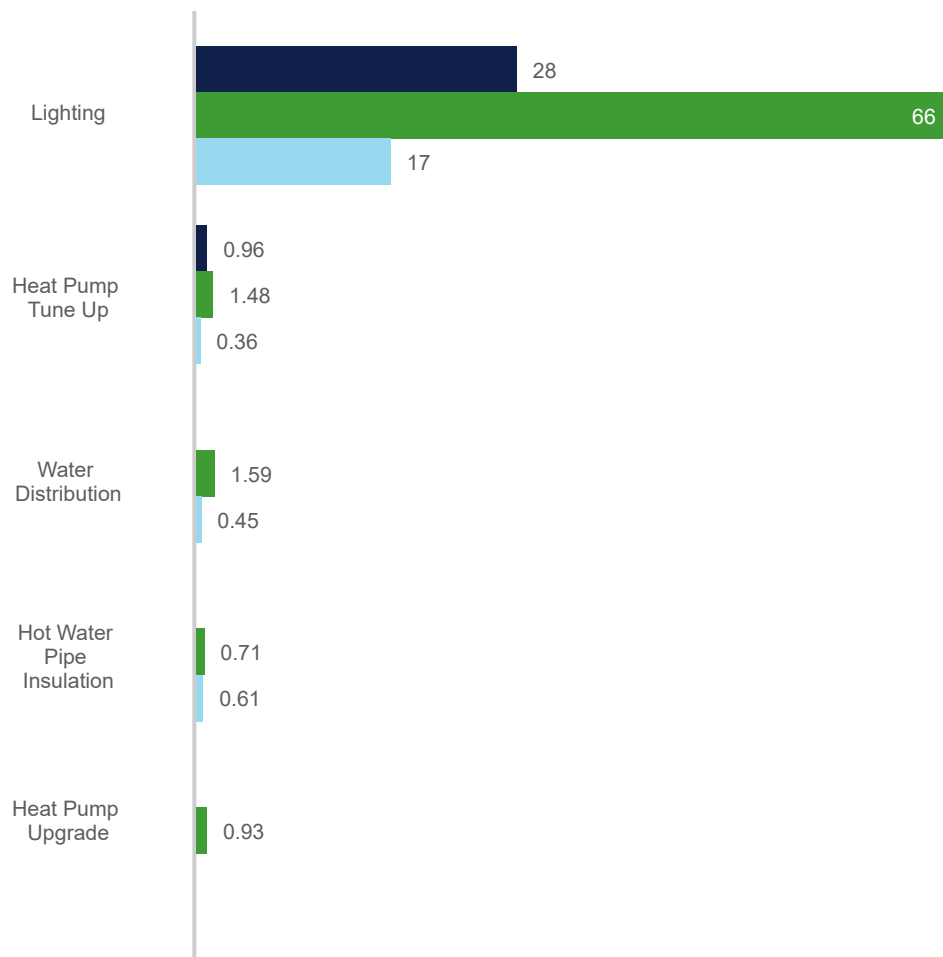
Achieved net annual energy savings of **31,997 kWh/year**, **2%** of planned energy savings



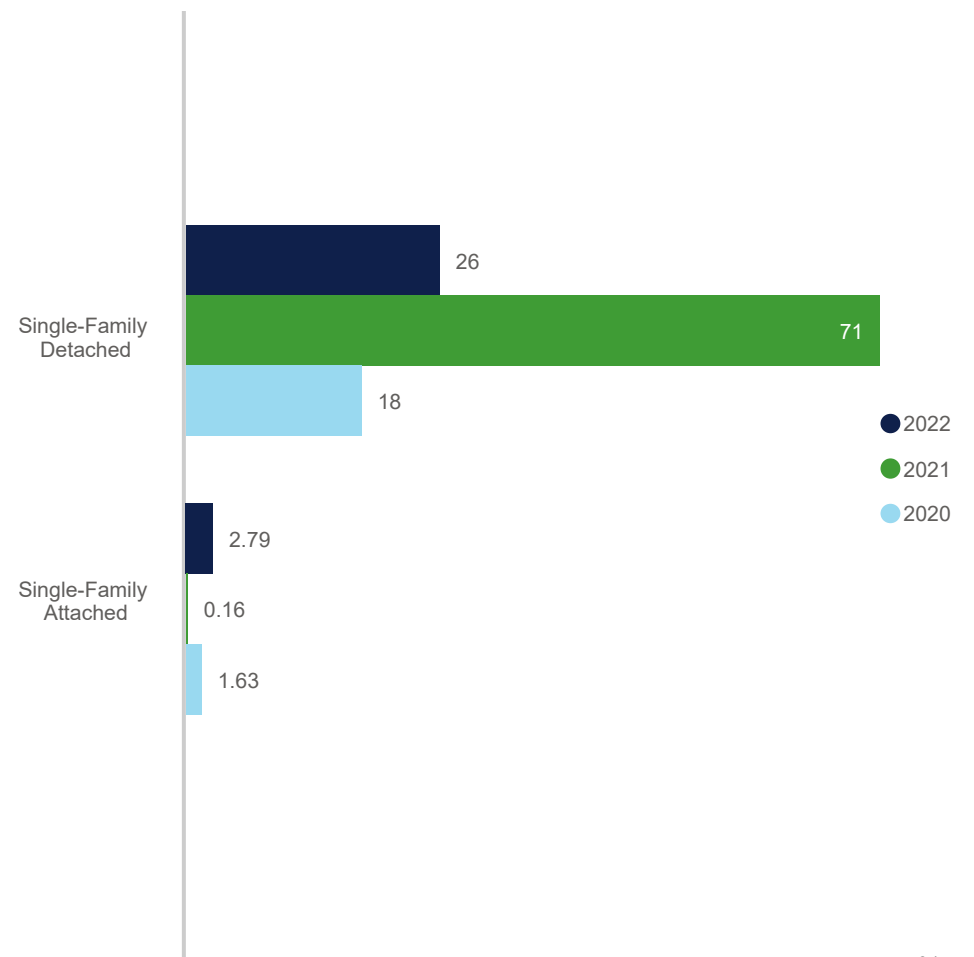
Spent **37%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|----------|
| Total Program Cost (\$) | | 0 | 96,955 | 120,947 | 108,763 | 326,666 |
| Total Program Participants (#) | | 0 | 17 | 32 | 18 | 67 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 19,413 | 70,833 | 28,587 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 4,271 | 16,292 | 11,435 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 1 | 4 | 2 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 0 | 1 | 1 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 10 | 4 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 2 | 2 | |
| Total Net Lifetime Savings (kWh) | | 0 | 844 | 13,169 | 37,560 | 399,965 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 0 | 1 | 2 | 2 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 2 | 4 | 4 |

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



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



Case #: PUR-2019-00201

RESIDENTIAL CUSTOMER ENGAGEMENT

2020-Present

25 kWh/yr Average Net Savings Per Participant

Eligibility

- Residents chosen through the randomized controlled treatment (RCT) experimental design

Measures

- Monthly digital or paper home energy reports



Enrolled **549,919** customers, **97%** of planned participation



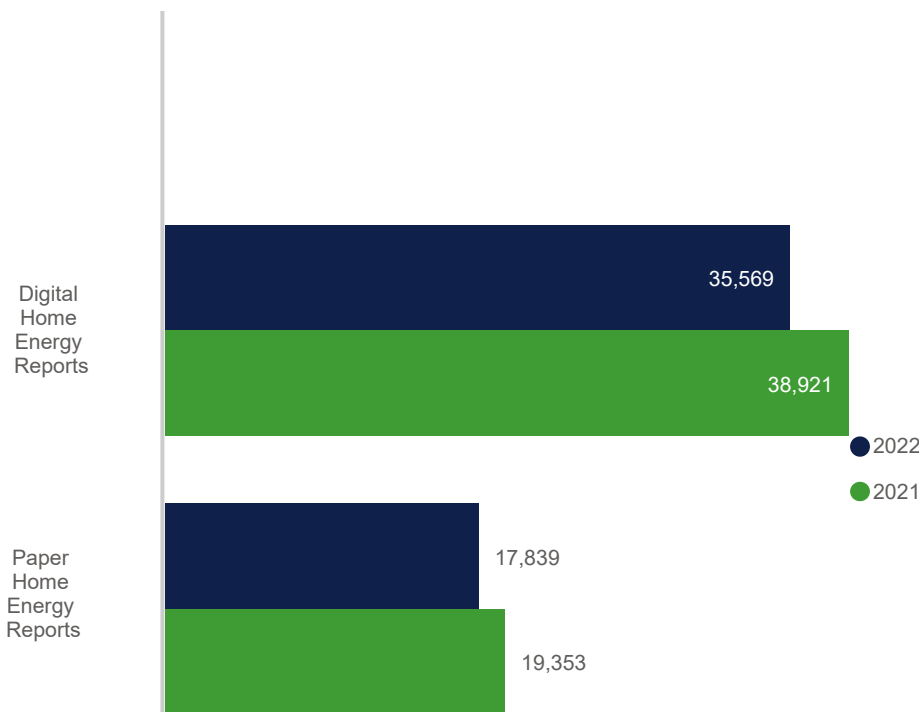
Achieved net annual energy savings of **13,741 MWh/year**, **14%** of planned energy savings



Spent **102%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|---------|------------|------------|------------|
| Total Program Cost (\$) | | | 162,614 | 2,012,981 | 1,749,425 | 3,925,020 |
| Total Program Participants (#) | | | 0 | 286,456 | 263,463 | 549,919 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 58,274,006 | 53,407,869 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 4,661,920 | 9,079,338 | |
| 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 | 3,672,124 | 12,055,945 | 14,068,352 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 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.

Case #: PUR-2019-00201

RESIDENTIAL MANUFACTURED HOUSING

2020-Present

184 kWh/yr Average Net Savings Per Participant

Eligibility

- Customer must be in Dominion Energy's service territory, on a residential rate, and must reside permanently in a manufactured home
- Customers must be responsible for the electric bill and own the residence or be able to secure permission from the owner to perform the recommended improvements

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.



Enrolled **6** customers, **0.19%** of planned participation



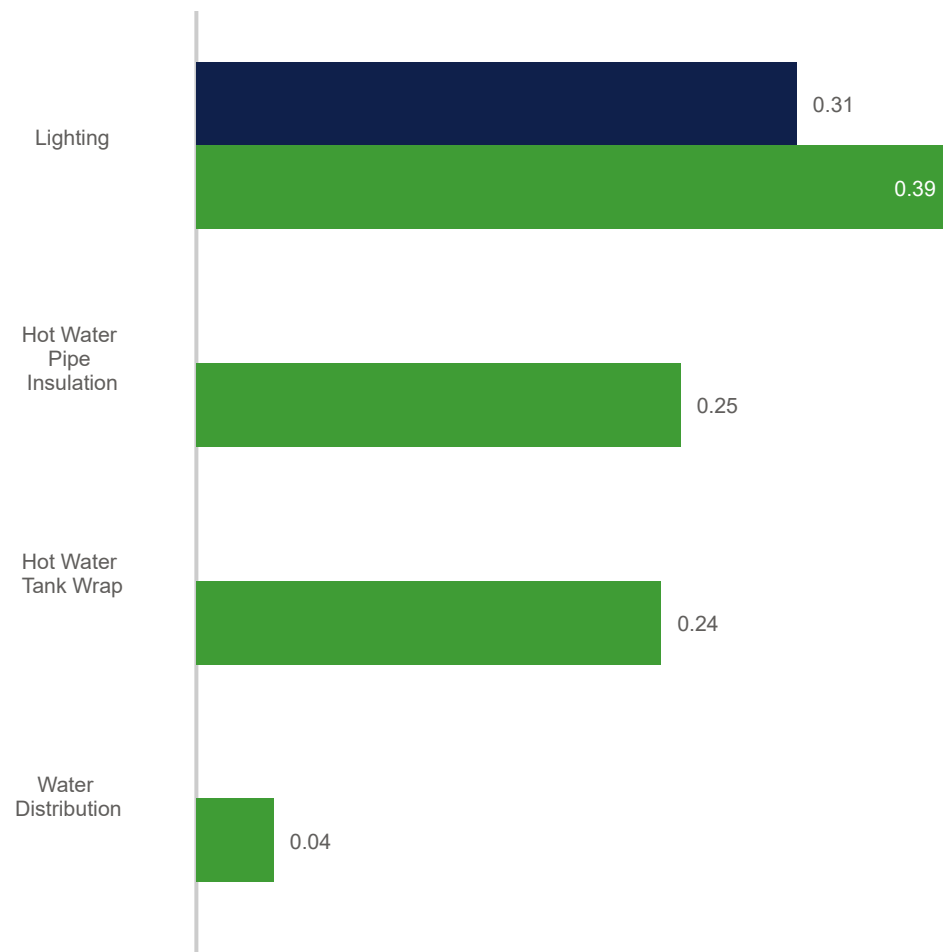
Achieved net annual energy savings of **1,103 kWh/year**, **0.02%** of planned energy savings



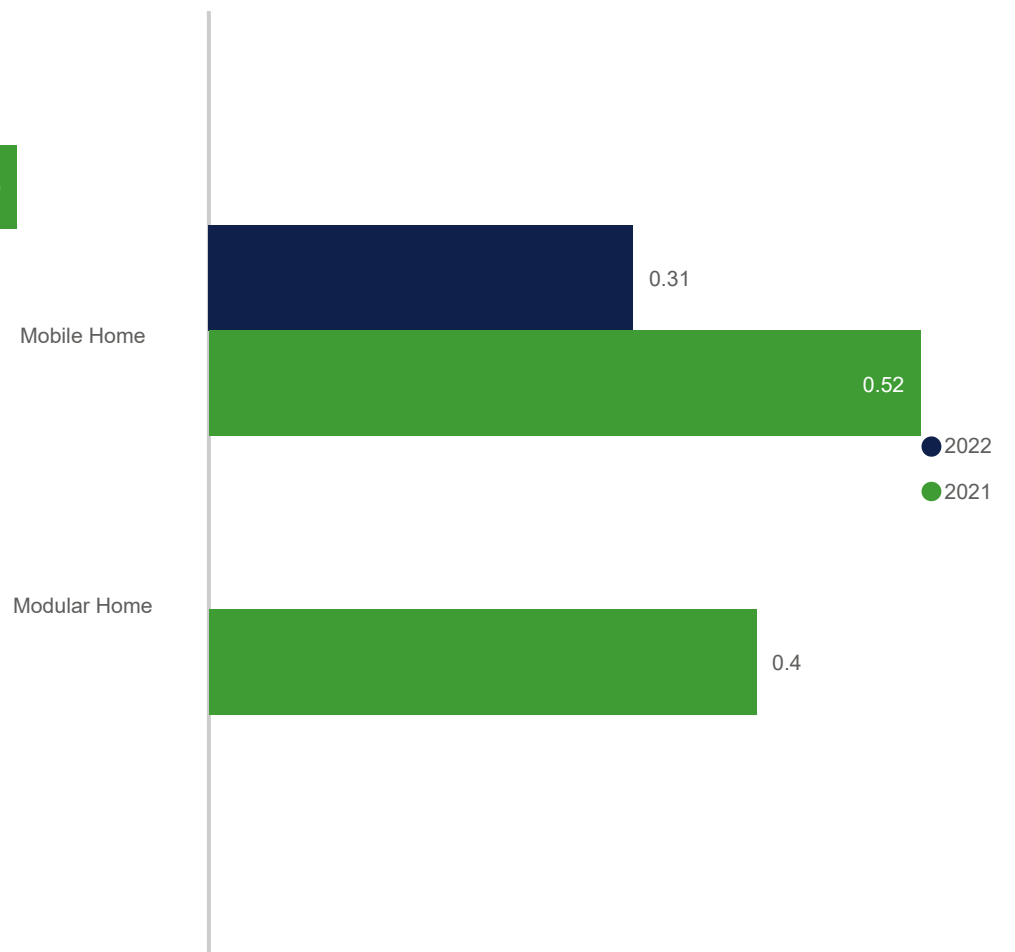
Spent **46%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$) | | | 49,716 | 642,418 | 627,383 | 1,319,517 |
| Total Program Participants (#) | | | 0 | 3 | 3 | 6 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 916 | 310 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 824 | 279 | |
| 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 | 59 | 998 | 13,112 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



TOTAL SAVINGS BY BUILDING TYPE (MWH/YR)



Case #: PUR-2019-00201

RESIDENTIAL MULTIFAMILY

2020-Present

235 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- On-site energy assessment of tenant units
- Pipe insulation
- LED lighting
- 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



Enrolled **1,643** customers, **7%** of planned participation



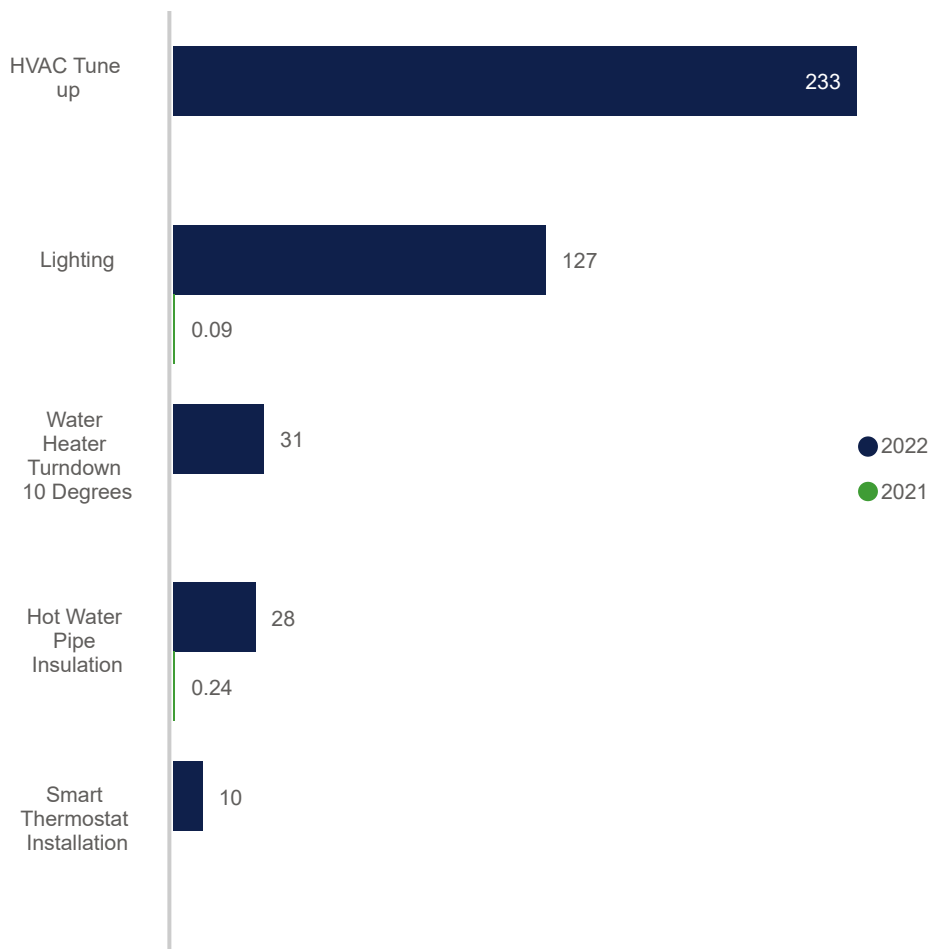
Achieved net annual energy savings of **385,956 kWh/year**, **2%** of planned energy savings



Spent **36%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$) | | | 28,940 | 629,586 | 768,978 | 1,427,504 |
| Total Program Participants (#) | | | 0 | 9 | 1,634 | 1,643 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 335 | 428,505 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 301 | 385,655 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 107 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 96 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 0 | 169 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 0 | 152 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 27 | 291,454 | 9,866,185 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 96 | 96 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 152 | 152 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



RESIDENTIAL HOME RETROFIT

2020-Present

2,025 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



Enrolled **149** customers, **5%** of planned participation



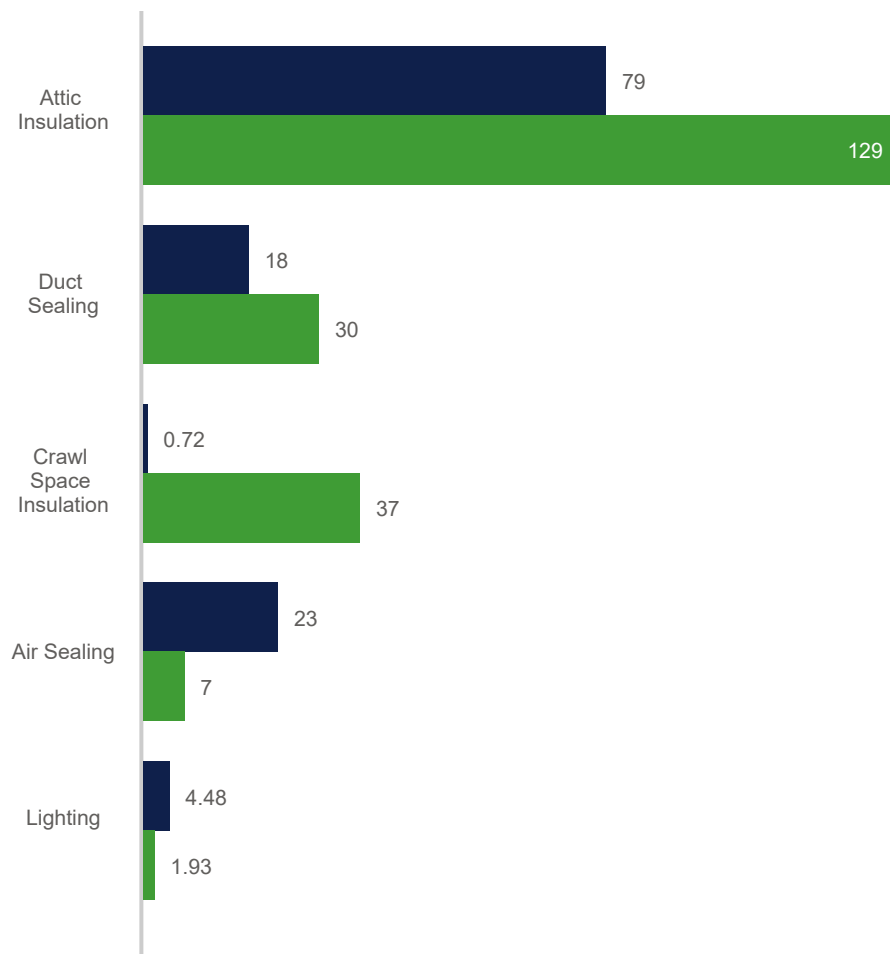
Achieved net annual energy savings of **301,716 kWh/year**, **6%** of planned energy savings



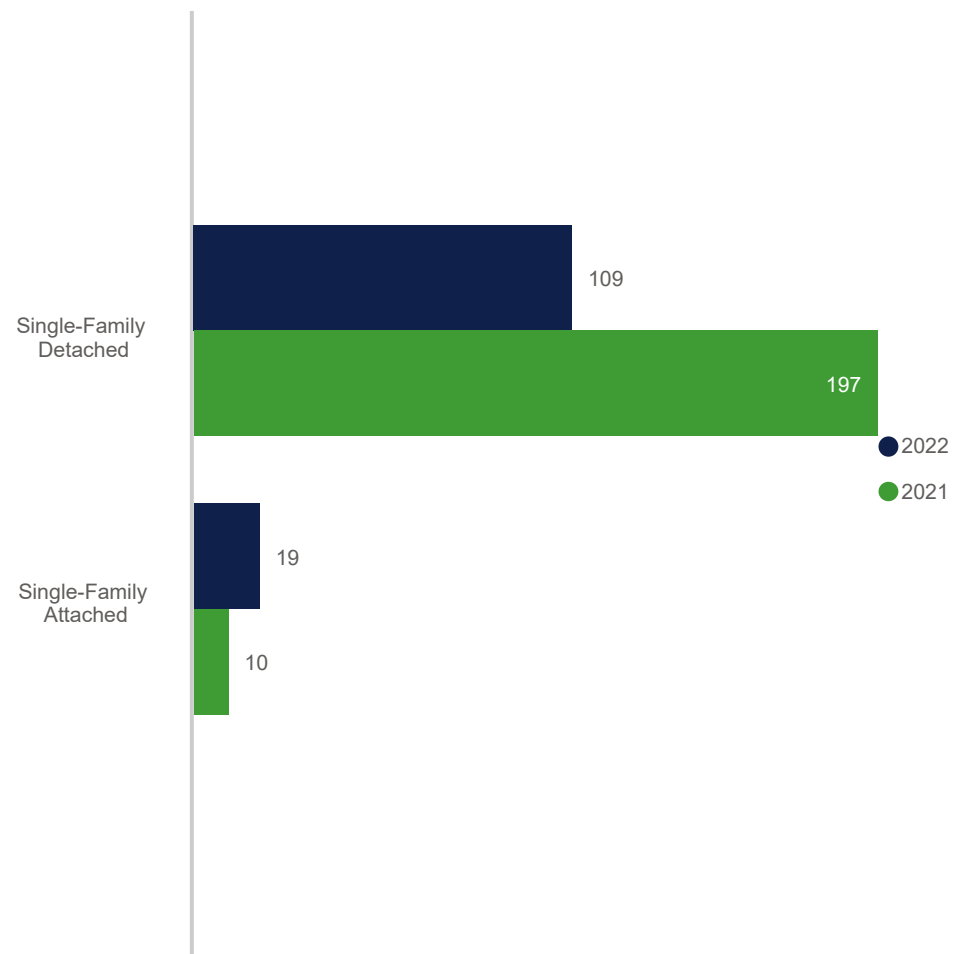
Spent **56%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$) | | | 56,887 | 865,549 | 852,714 | 1,775,149 |
| Total Program Participants (#) | | | 0 | 99 | 50 | 149 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 207,565 | 127,675 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 186,809 | 114,907 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 68 | 30 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 62 | 27 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 75 | 44 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 68 | 40 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 36,627 | 273,261 | 6,483,628 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 62 | 89 | 89 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 68 | 107 | 107 |

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



TOTAL SAVINGS BY BUILDING TYPE
MWH/YR



RESIDENTIAL HOME RETROFIT

2020-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



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



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



Spent **42%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|--------|----------|
| Total Program Cost (\$) | | | | 35,738 | 48,397 | 84,135 |
| 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 | |

Case #: PUR-2020-00274

RESIDENTIAL VIRTUAL ENERGY AUDIT

2021-Present

551 kWh/yr Average Net Savings Per Participant

Eligibility

- Active residential customer in the Dominion Energy's service territory.
- Customer must be the party that is responsible for electric bill and either own the home or otherwise able to secure permission and authorization to complete the rebate submission.
- Must not have participated in DSM Phase VII Home Energy Assessment Program, Home Retrofit, Manufactured Home, and the Residential Energy Efficiency Kits Programs.

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



Enrolled **2,149** customers, **4%** of planned participation



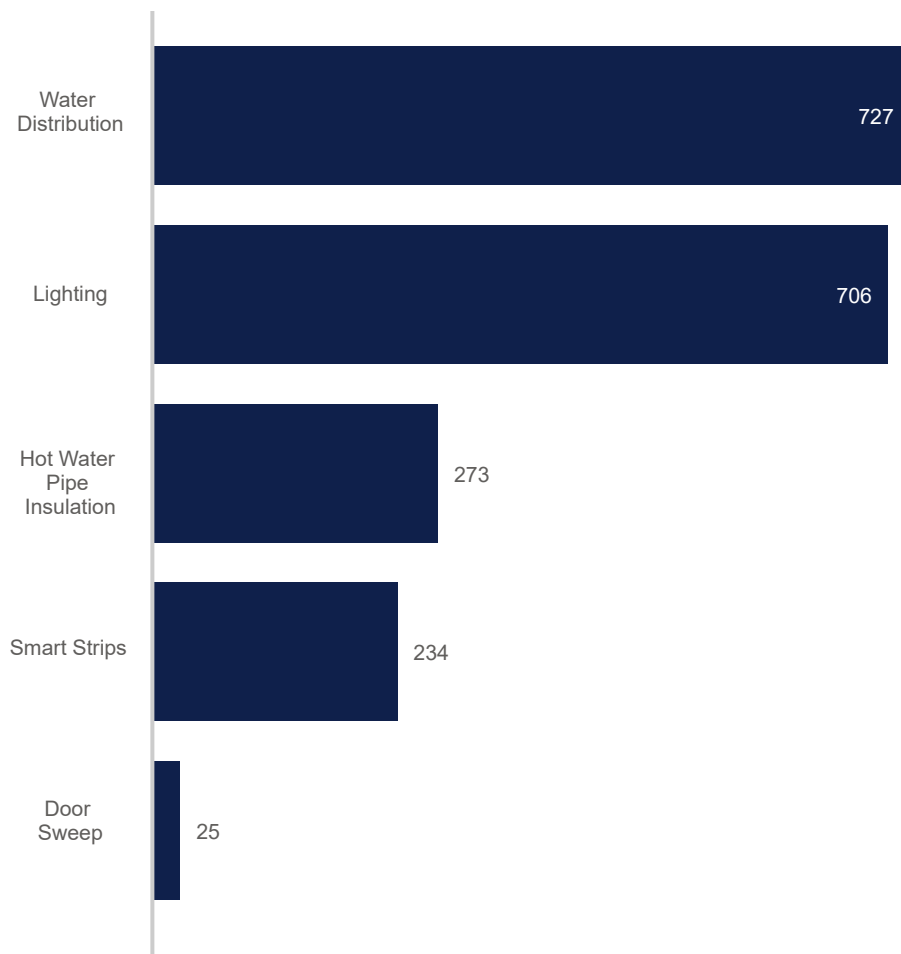
Achieved net annual energy savings of **1,184 MWh/year**, **7%** of planned energy savings



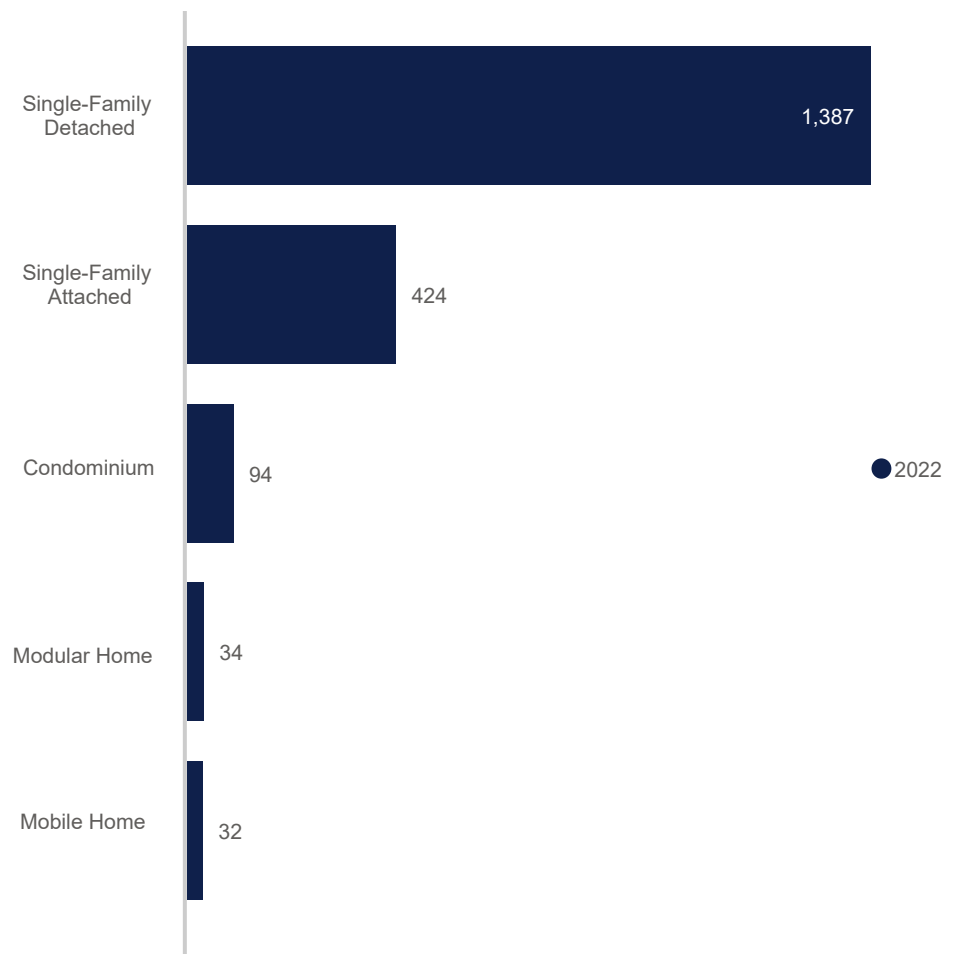
Spent **16%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|-------|-----------|------------|
| Total Program Cost (\$) | | | | 4,465 | 665,100 | 669,566 |
| Total Program Participants (#) | | | | 0 | 2,149 | 2,149 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 1,972,641 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 1,183,584 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 164 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 98 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 269 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 162 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 360,236 | 16,222,769 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 98 | 98 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 162 | 162 |

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



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



RESIDENTIAL VIRTUAL ENERGY AUDIT

2022-Present

627 kWh/yr Average Net Savings Per Participant

Eligibility

- Active residential customer in the Dominion Energy's service territory.
- Customer must be the party that is responsible for electric bill and either own the home or otherwise able to secure permission and authorization to complete the rebate submission.
- Must not have participated in DSM Phase VII Home Energy Assessment Program, Home Retrofit, Manufactured Home, and the Residential Energy Efficiency Kits Programs.

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



Enrolled **39** customers, **1%** of planned participation



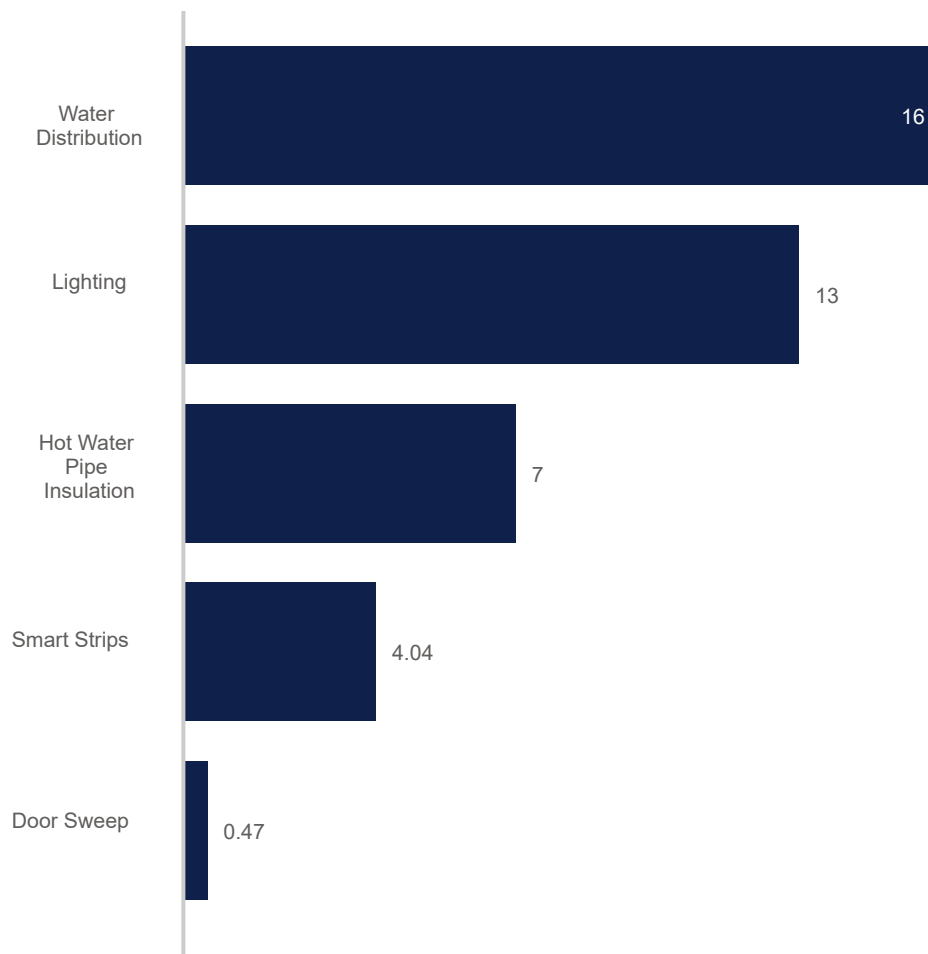
Achieved net annual energy savings of **24,450 kWh/year**, **2%** of planned energy savings



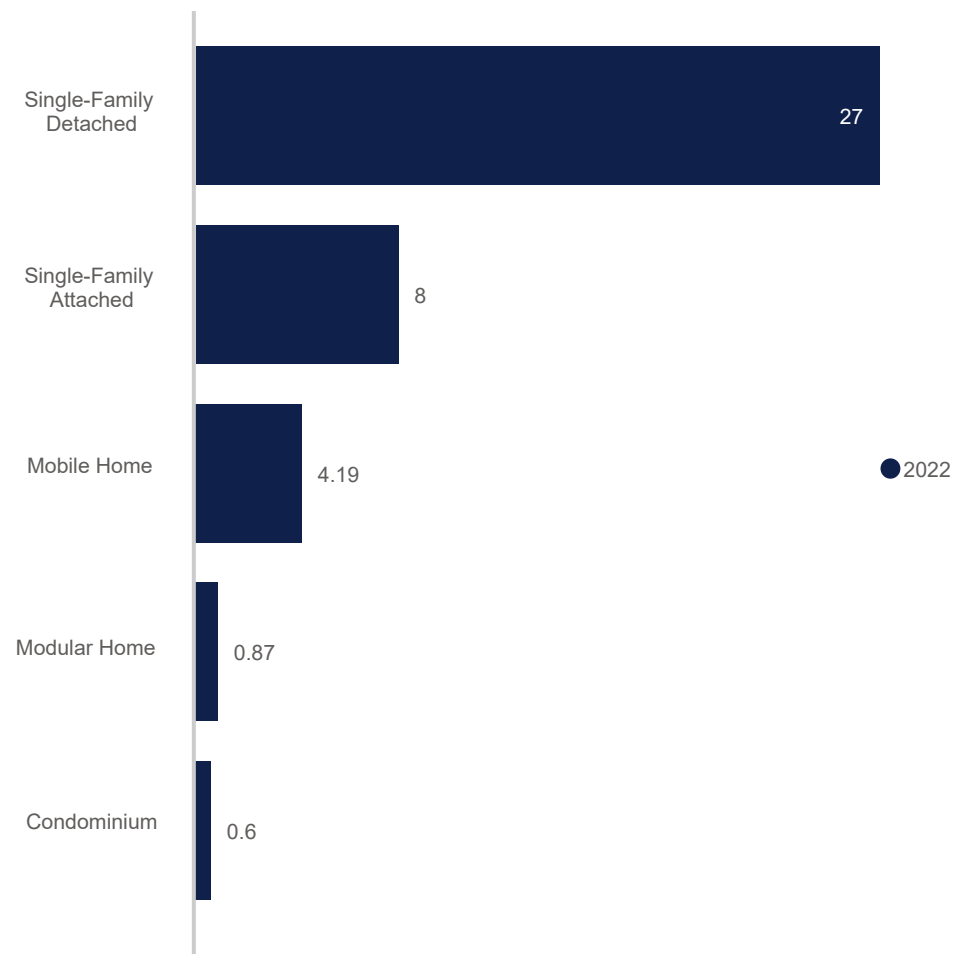
Spent **14%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|--------|----------|
| Total Program Cost (\$) | | | | | 15,492 | 15,492 |
| Total Program Participants (#) | | | | | 39 | 39 |
| Total Gross Incremental Savings (kWh/yr) | | | | | 40,749 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 24,450 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 3 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 2 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 6 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 3 | |
| Total Net Lifetime Savings (kWh) | | | | | 7,866 | 331,263 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 2 | 2 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 3 | 3 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



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





4. ENERGY EFFICIENCY - RESIDENTIAL NEW CONSTRUCTION

The Residential New Construction Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|------------------------------|----|----|
| 8 | RNCR | Residential New Construction | ✓ | |

Figure 4-1 and Figure 4-2 show the cumulative count of residential new construction 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, Chesterfield, and Stafford. Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Chesterfield, Fairfax, and Stafford.

Figure 4-1. Virginia and North Carolina Residential New Construction Program Participation, by County Participants

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

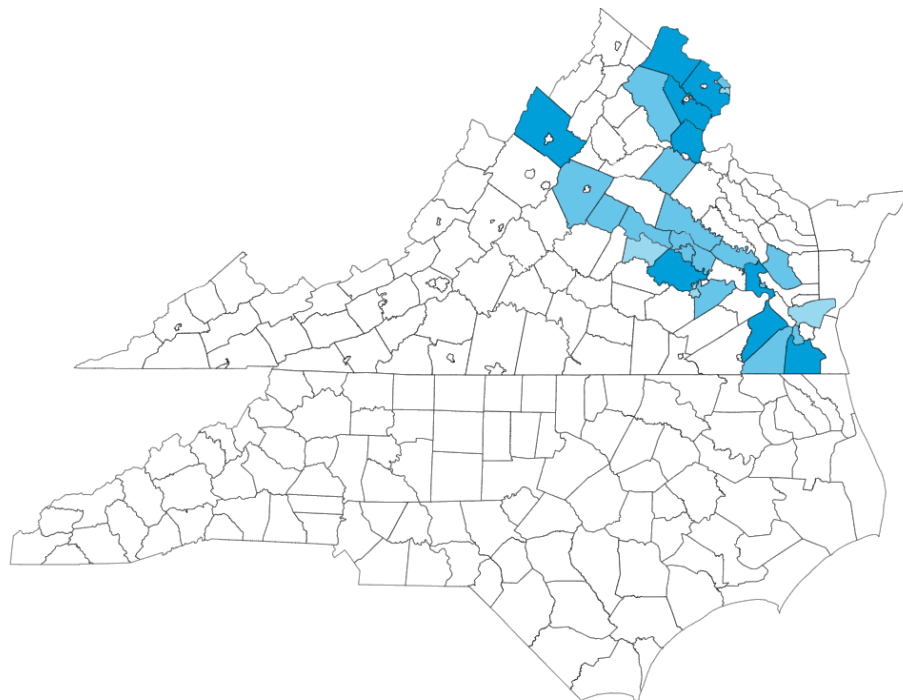
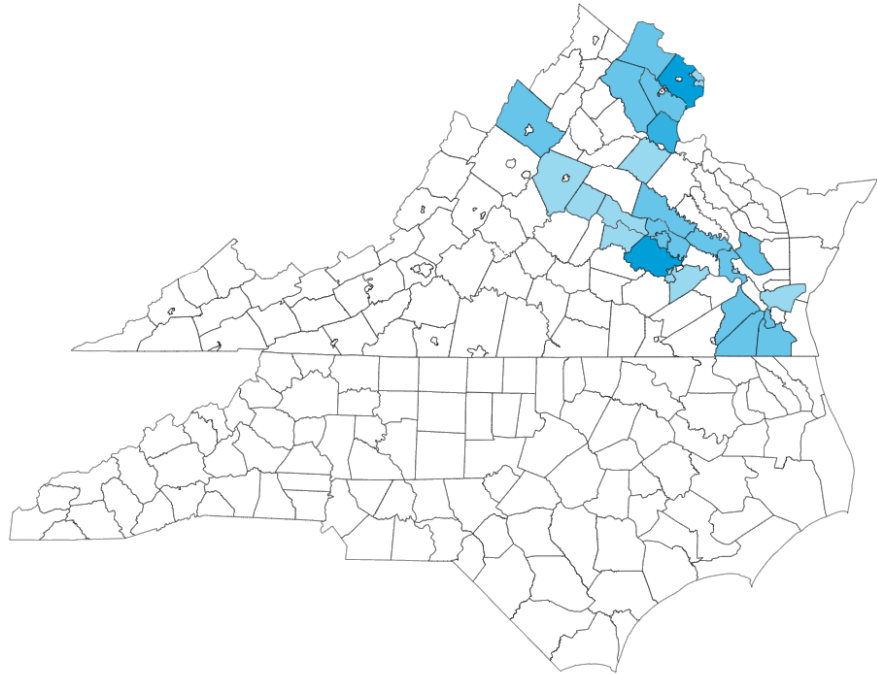




Figure 4-2. Virginia and North Carolina Residential New Construction Program Gross Annualized Energy Savings, by County

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



Case #: PUR-2019-00201

RESIDENTIAL NEW CONSTRUCTION

2020-Present

1,727 kWh/yr Average Net Savings Per Participant

Eligibility

- New homes being constructed that are ENERGY STAR® certified
- Home must receive electric supply service and electric delivery service on a residential rate schedule
- Incentive recipient must be 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



Enrolled **3,578** customers, **41%** of planned participation



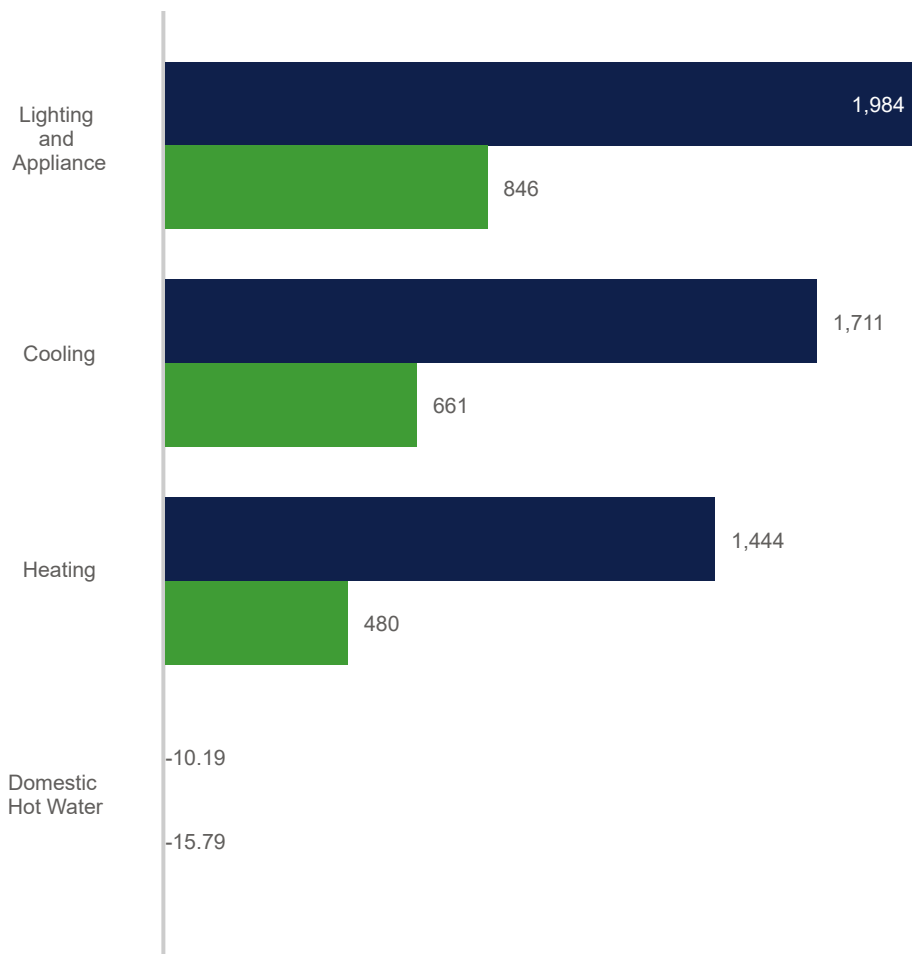
Achieved net annual energy savings of **6,178 MWh/year**, **50%** of planned energy savings



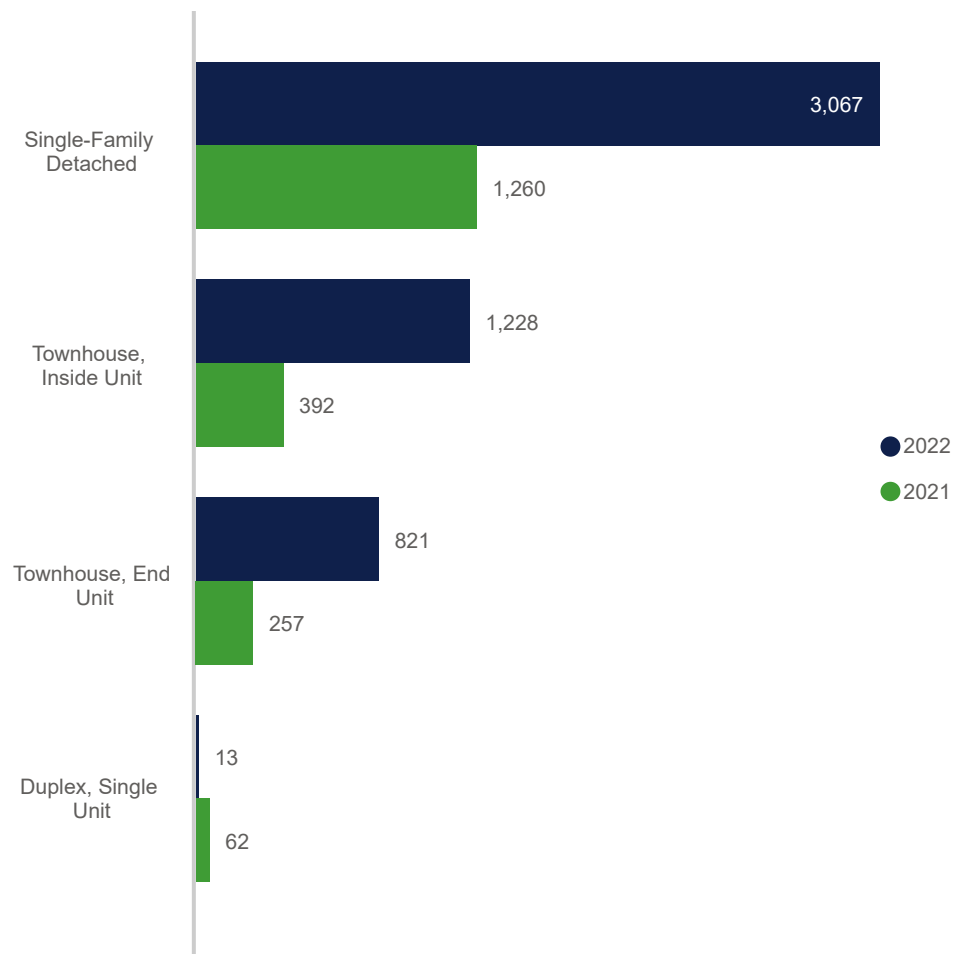
Spent **45%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|-----------|-----------|-------------|
| Total Program Cost (\$) | | | 30,084 | 1,203,424 | 2,688,603 | 3,922,111 |
| Total Program Participants (#) | | | 0 | 1,018 | 2,560 | 3,578 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 1,971,437 | 5,129,363 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 1,715,150 | 4,462,546 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 883 | 2,285 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 769 | 1,988 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 343 | 970 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 298 | 844 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 431,919 | 4,346,236 | 140,756,054 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 769 | 2,757 | 2,757 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 298 | 1,142 | 1,142 |

**TOTAL SAVINGS BY END USE
TOP 5 IN KWH**



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





5. ENERGY EFFICIENCY - INCOME AND AGE QUALIFYING

The Income and Age Qualifying Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|---|----|----|
| 8 | RHVC | Residential HVAC Health and Safety | ✓ | |
| 9 | EAL4 | Residential Income and Age Qualifying Energy Efficiency | ✓ | ✓ |
| 9 | EALS | Income and Age Qualifying Solar Program | ✓ | |

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, Hampton City, and Fairfax. In North Carolina, Halifax, Hertford, and Northampton counties have the highest participation.

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



Figure 5-1. 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

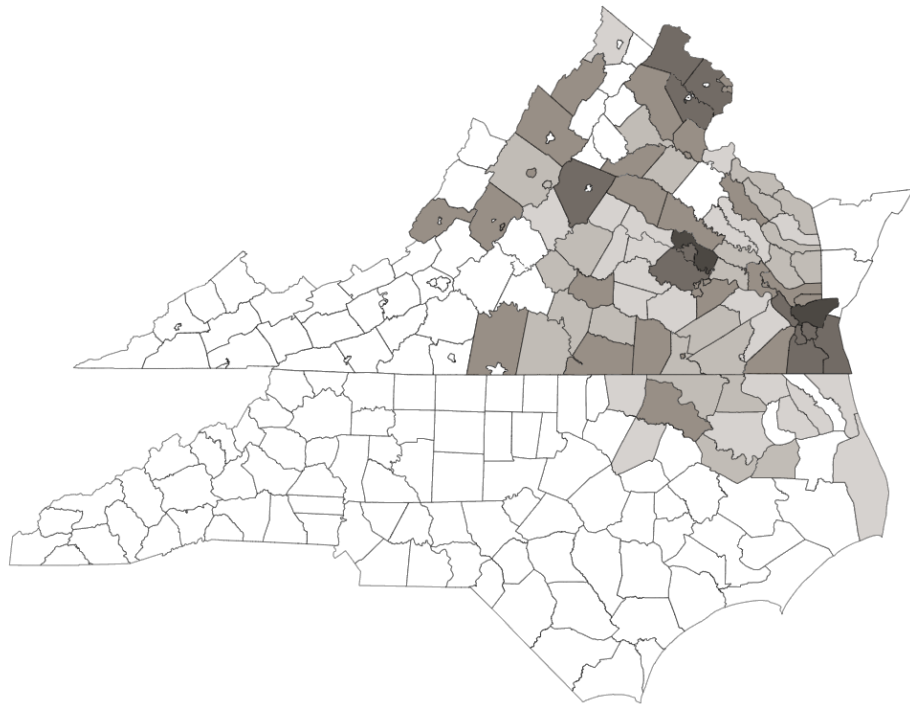
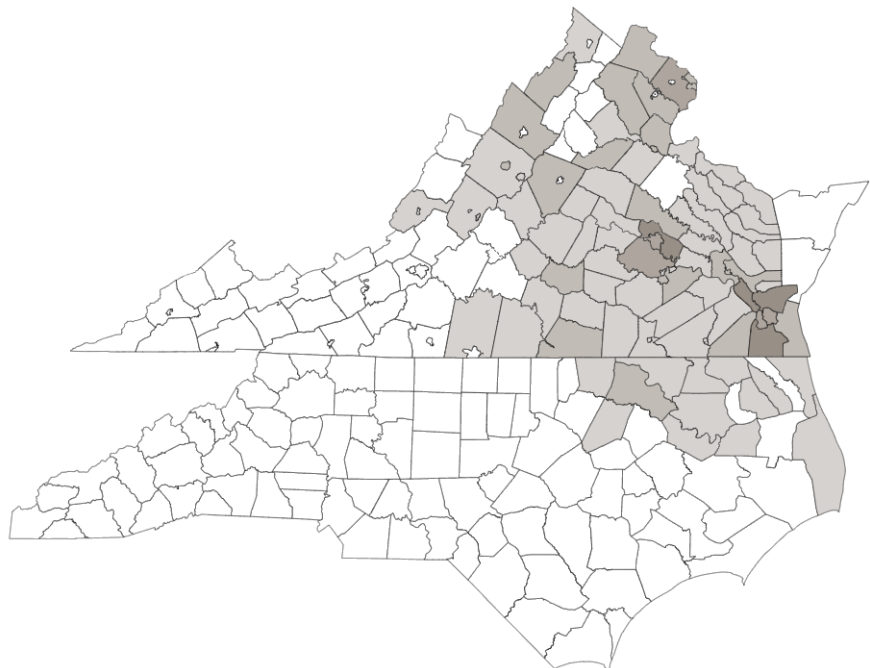


Figure 5-2. Virginia and North Carolina Income and Age Qualifying Program Gross Annualized Energy Savings, by County
Gross Total Electric Impact

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



Case #: PUR-2019-00201

RESIDENTIAL HVAC HEALTH AND SAFETY

2020-Present

267 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 **7,022** customers, **40%** of planned participation



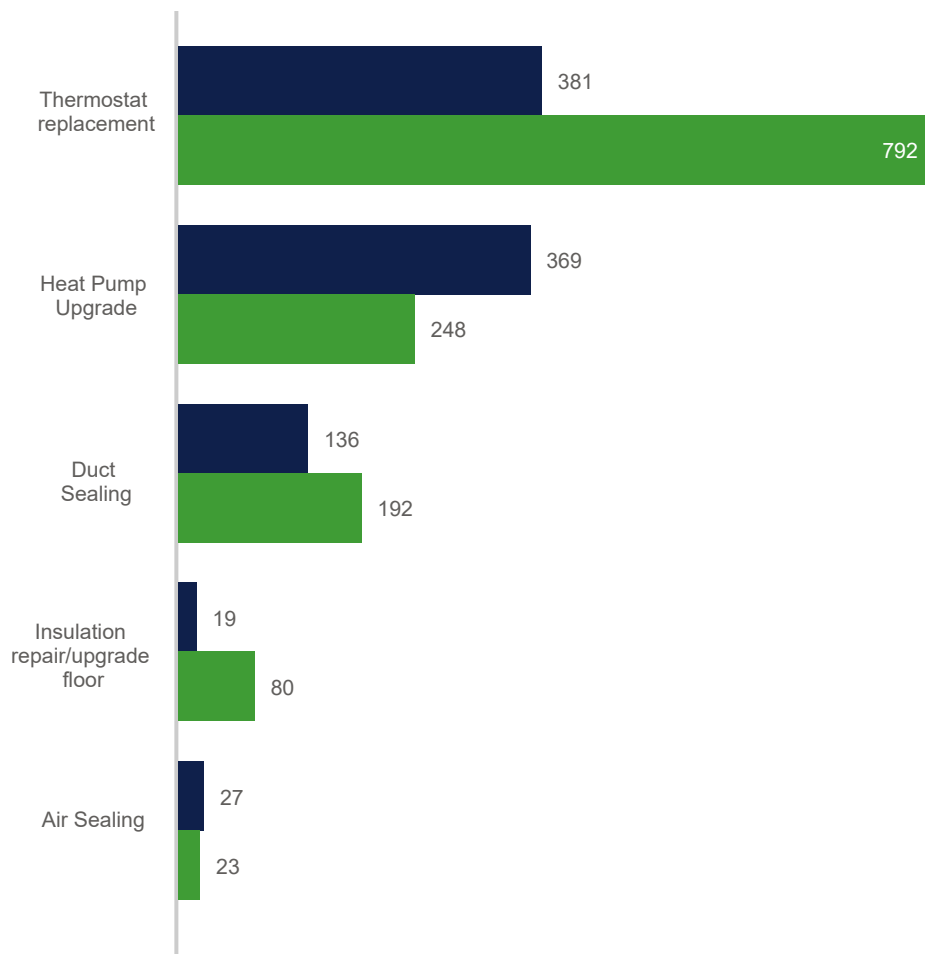
Achieved net annual energy savings of **1,872 MWh/year**, **16%** of planned energy savings



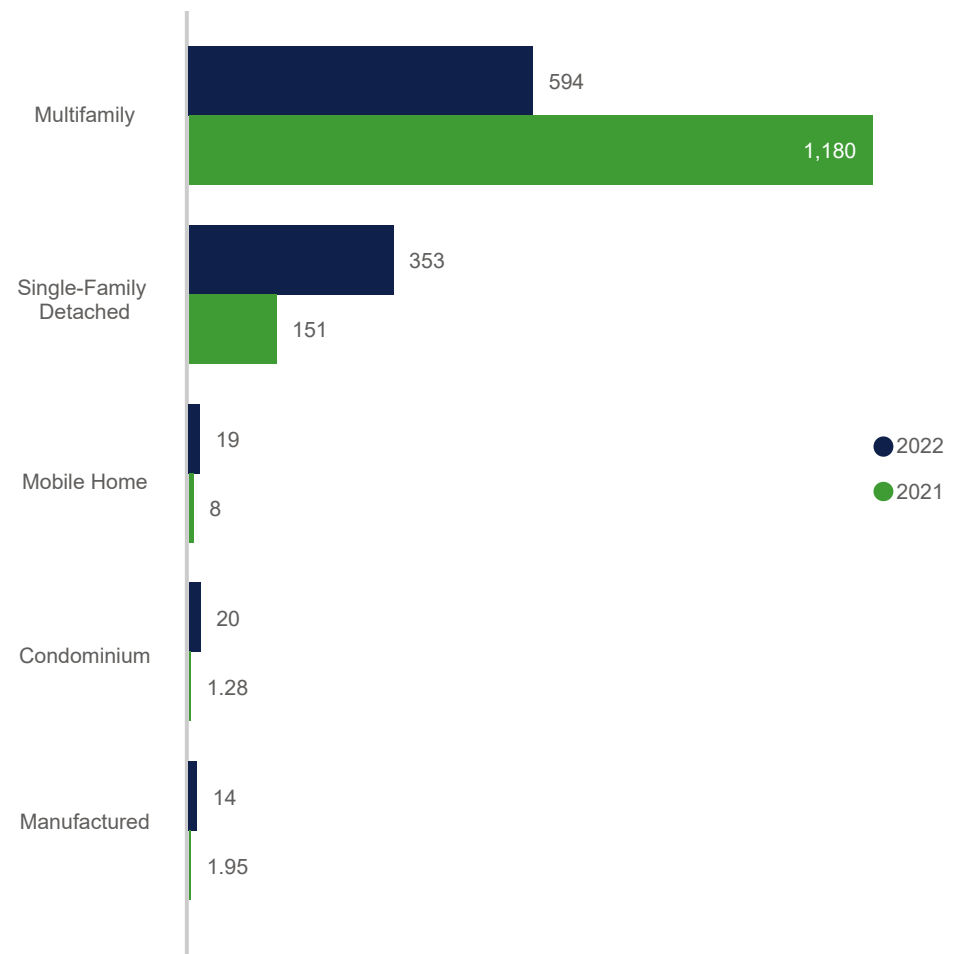
Spent **98%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|-----------|------------|------------|
| Total Program Cost (\$) | | | 49,722 | 9,094,648 | 12,192,181 | 21,336,551 |
| Total Program Participants (#) | | | 0 | 3,361 | 3,661 | 7,022 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 1,341,418 | 999,178 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 1,073,134 | 799,342 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 200 | 194 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 160 | 155 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 295 | 296 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 236 | 237 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 226,115 | 1,658,447 | 24,624,324 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 160 | 315 | 315 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 236 | 473 | 473 |

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



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





Case #: PUR-2020-00274

RESIDENTIAL INCOME AND AGE QUALIFYING ENERGY EFFICIENCY

2021-Present

518 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

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
- Safety, Admin



Enrolled **4,782** customers, **49%** of planned participation



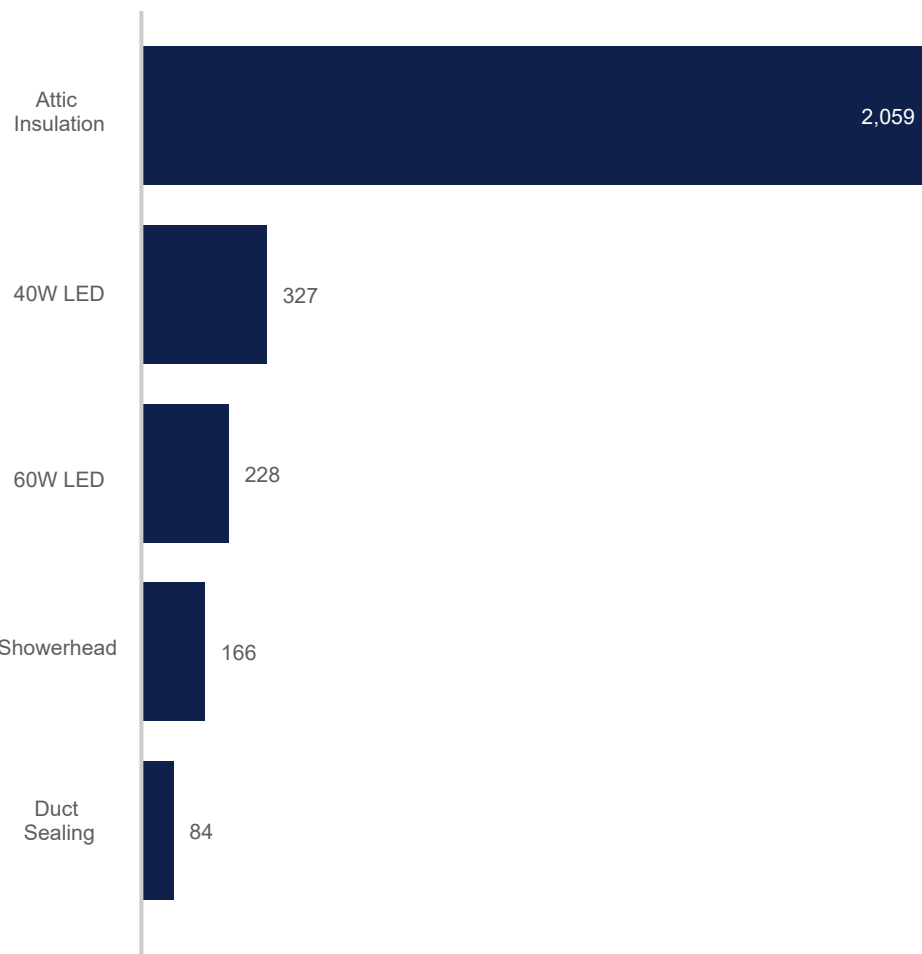
Achieved net annual energy savings of **2,477 MWh/year**, **482%** of planned energy savings



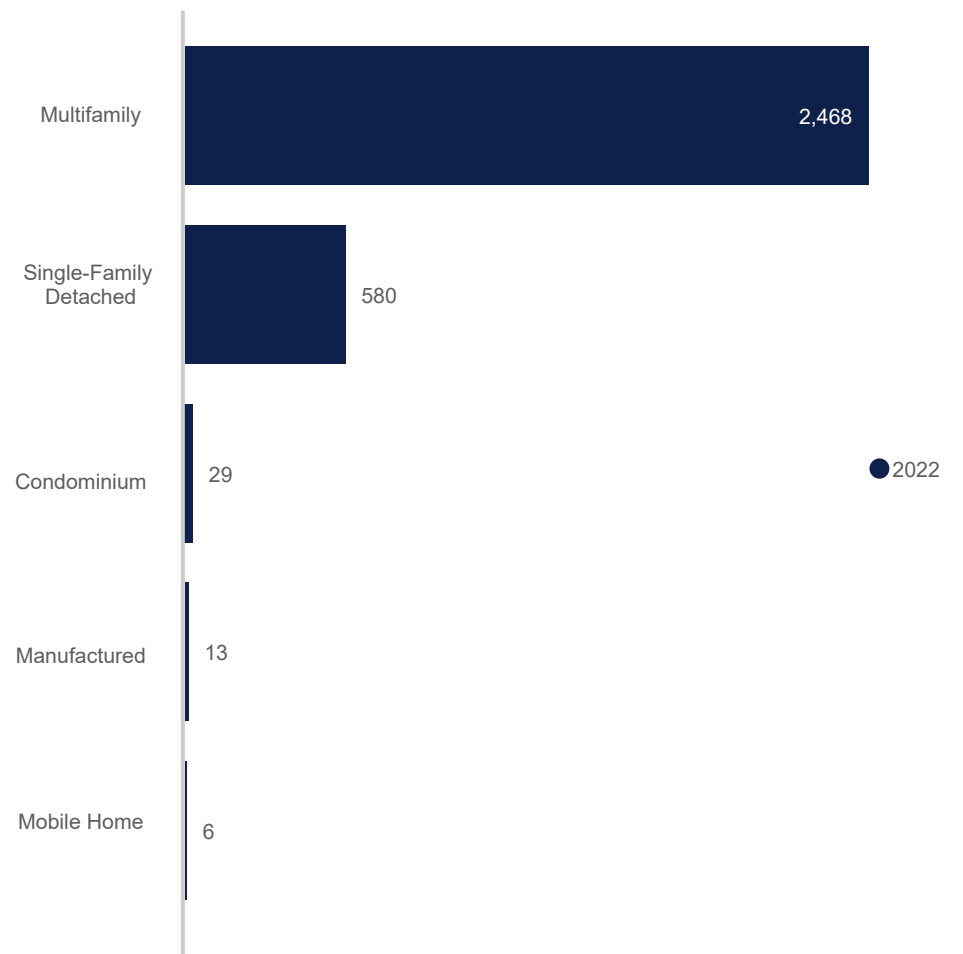
Spent **79%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|-----------|------------|
| Total Program Cost (\$) | | | | 15,696 | 5,853,130 | 5,868,826 |
| Total Program Participants (#) | | | | 0 | 4,782 | 4,782 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 3,096,191 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 2,476,953 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 689 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 551 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 1,714 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 1,371 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 874,068 | 50,981,952 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 551 | 551 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 1,371 | 1,371 |

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



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



RESIDENTIAL INCOME AND AGE QUALIFYING ENERGY EFFICIENCY

2022-Present

1,454 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

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
- Safety, Admin



Enrolled **26** customers, **4%** of planned participation



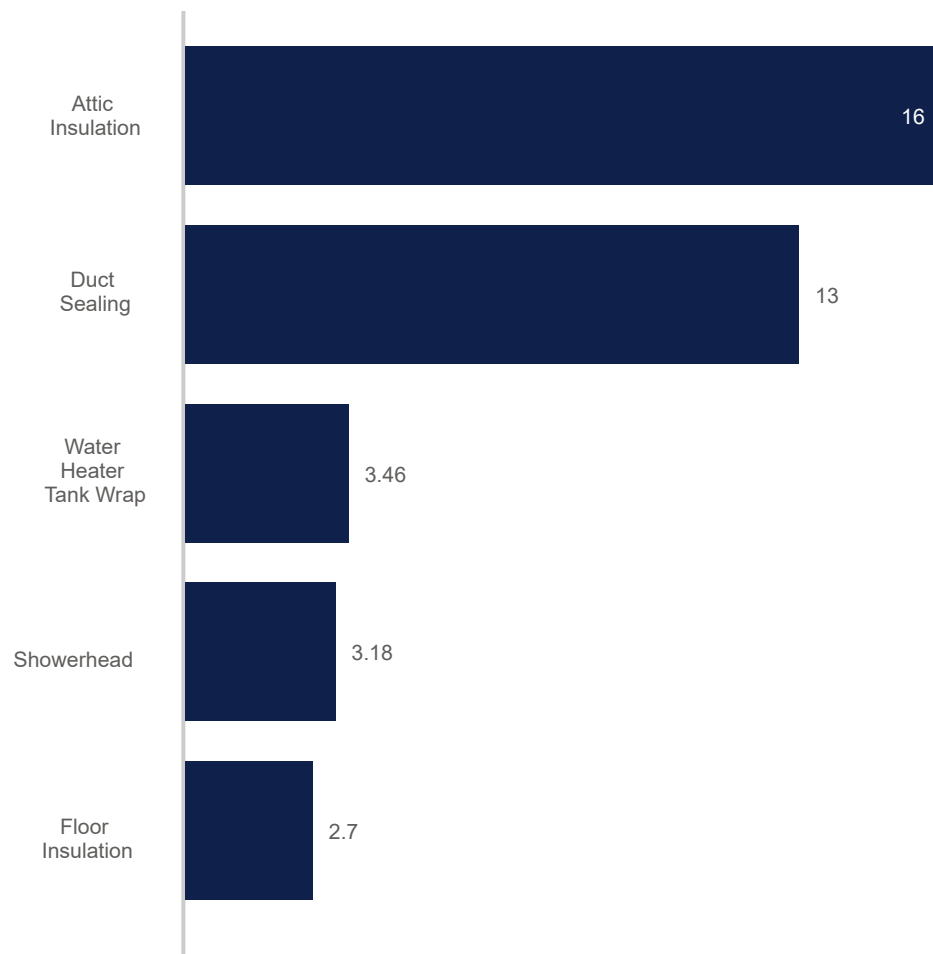
Achieved net annual energy savings of **37,806 kWh/year**, **115%** of planned energy savings



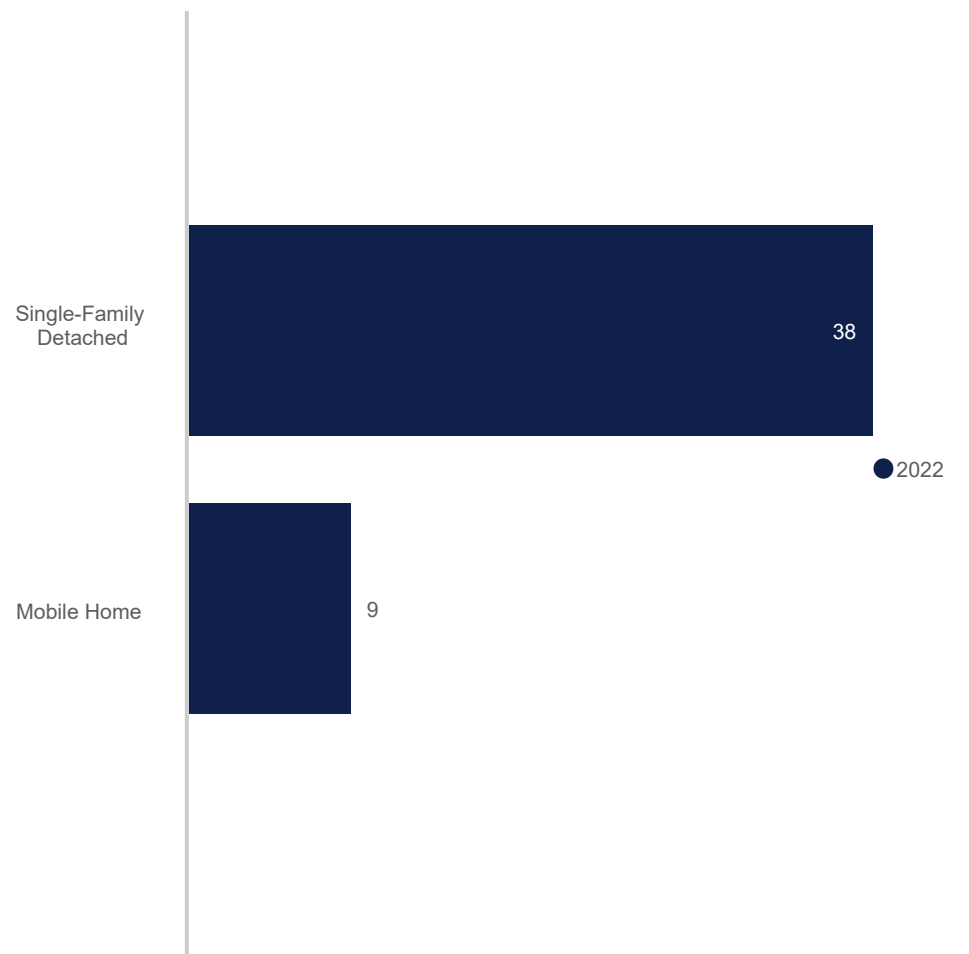
Spent **46%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|---------|----------|
| Total Program Cost (\$) | | | | | 141,404 | 141,404 |
| Total Program Participants (#) | | | | | 26 | 26 |
| Total Gross Incremental Savings (kWh/yr) | | | | | 47,257 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 37,806 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 16 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 12 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 27 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 21 | |
| Total Net Lifetime Savings (kWh) | | | | | 15,750 | 701,870 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 12 | 12 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 21 | 21 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



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



Case #: PUR-2020-00274

INCOME AND AGE QUALIFYING SOLAR PROGRAM

2021-Present

3,950 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 Energy Virginia program that provides measures to reduce heating and cooling.

Measures

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



Enrolled **7** customers, **1%** of planned participation



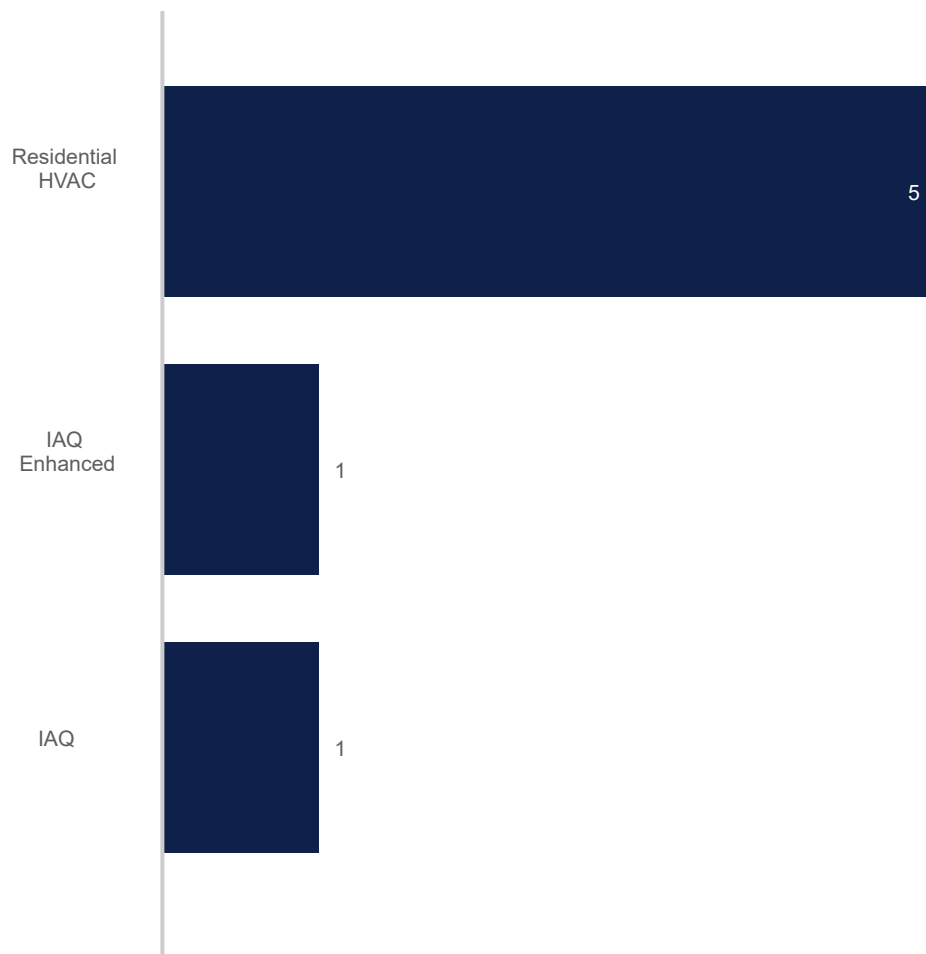
Achieved net annual energy savings of **27,647 kWh/year**, **1%** of planned energy savings



Spent **2%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|---------|----------|
| Total Program Cost (\$) | | | | 10,963 | 196,159 | 207,123 |
| Total Program Participants (#) | | | | 0 | 7 | 7 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 34,559 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 27,647 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 12 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 10 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 0 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 1,828 | 610,067 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 10 | 10 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 0 | 0 |

NUMBER OF PARTICIPANTS BY IAQ PROGRAM





6. ENERGY EFFICIENCY - NON-RESIDENTIAL GENERAL PRODUCTS & SERVICES

The Non-Residential General Products and Services Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|--|----|----|
| 6 | CNRP | Non-Residential Prescriptive | ✓ | ✓ |
| 9 | CNR2 | Non-Residential Prescriptive Enhanced | ✓ | ✓ |
| 7 | CHV3 | Non-Residential Heating and Cooling Efficiency | ✓ | ✓ |
| 7 | CLT3 | Non-Residential Lighting Systems & Controls | ✓ | ✓ |
| 7 | CTSM | Non-Residential Small Manufacturing | ✓ | ✓ |
| 7 | CSW2 | Non-Residential Window Film | ✓ | ✓ |
| 8 | CEEP | Non-Residential Midstream Energy Efficiency Products | ✓ | |

Figure 6-1 and Figure 6-2 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, 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 Henrico. In North Carolina, Dare, Martin, and Halifax counties have the most energy savings.



Figure 6-1. 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

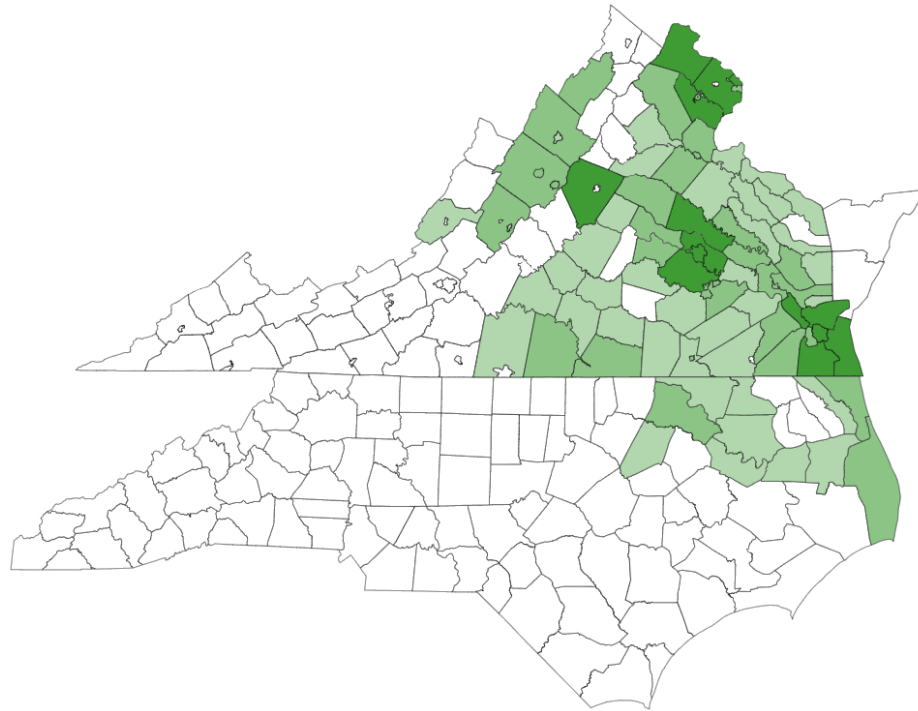
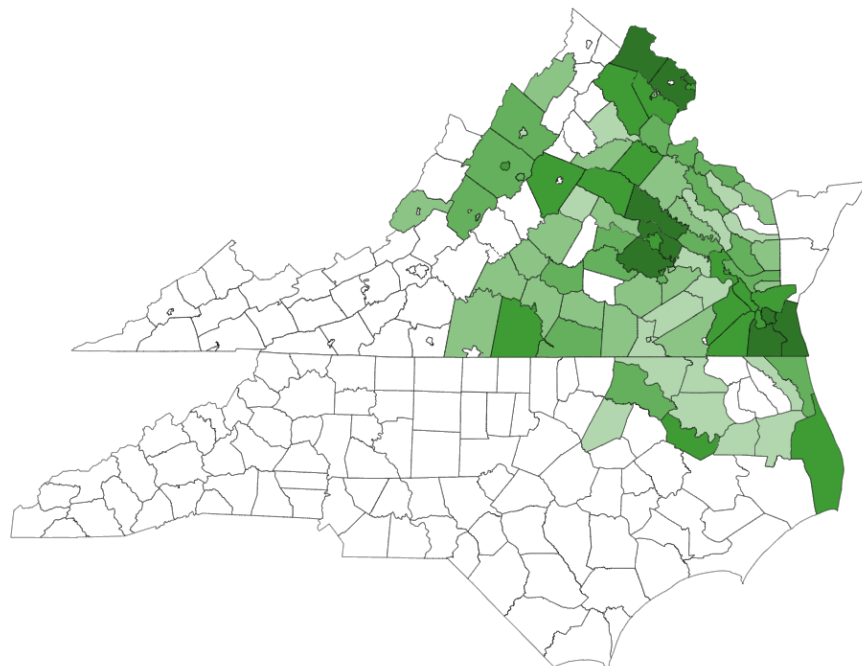


Figure 6-2. Virginia and North Carolina Non-Residential General Products and Services Program Gross Annualized Energy Savings, by County

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



Case #: PUE-2016-00111

NON-RESIDENTIAL PRESCRIPTIVE

2017-2022

14,730 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Properly sealed duct and air distribution systems
- Efficient heating and cooling systems
- Efficient refrigeration system and kitchen appliances



Enrolled **2,835** customers, **143%** of planned participation



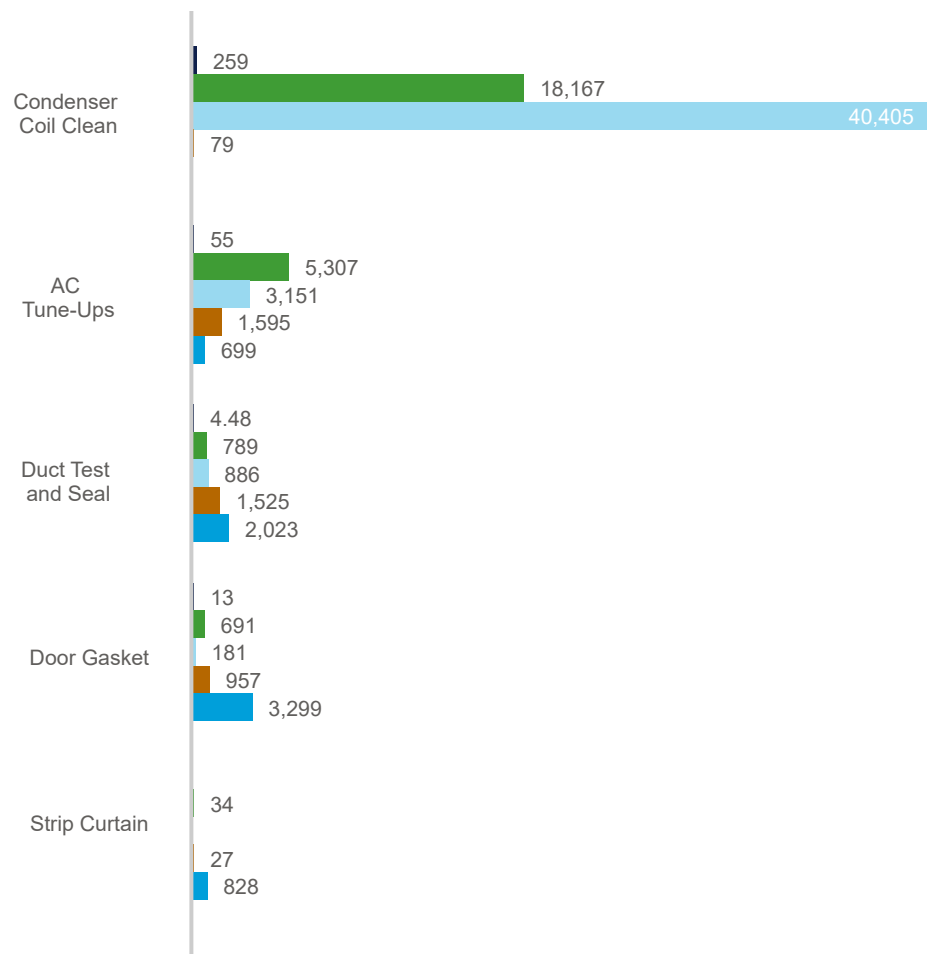
Achieved net annual energy savings of **41,761 MWh/year**, **48%** of planned energy savings



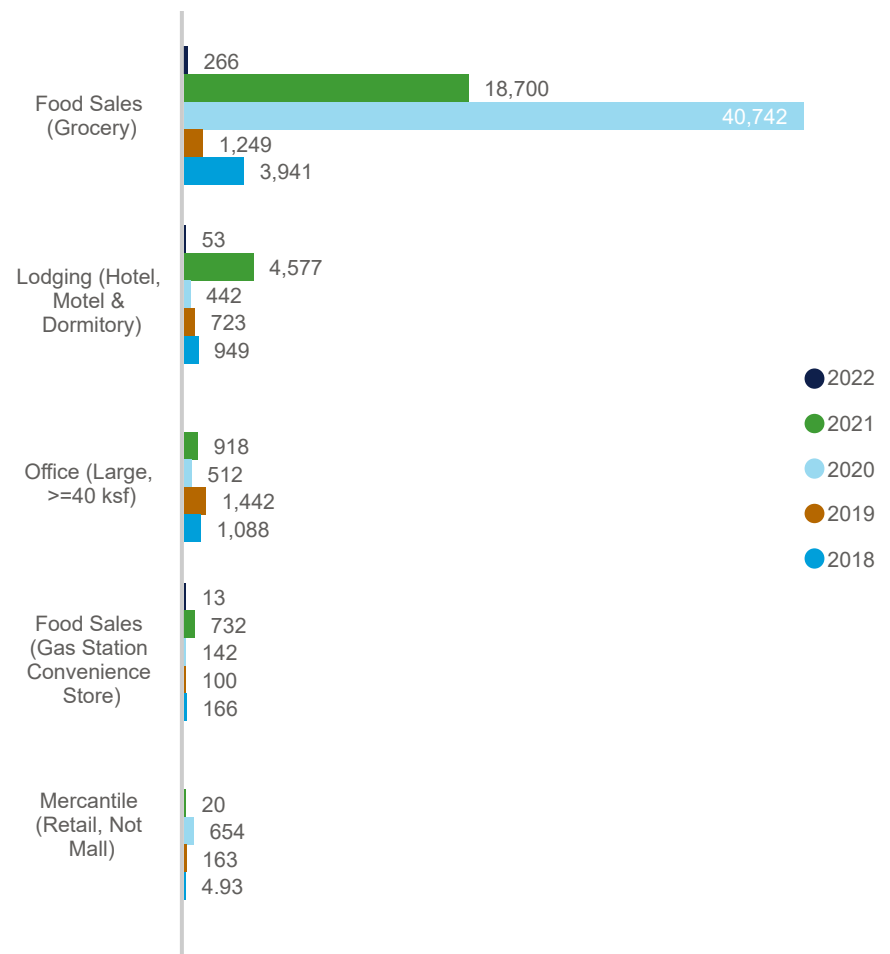
Spent **115%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|-----------|------------|------------|------------|-------------|-------------|
| Total Program Cost (\$) | 6,748,855 | 5,887,581 | 11,128,206 | 8,490,163 | 214,195 | 33,203,410 |
| Total Program Participants (#) | 865 | 666 | 577 | 709 | 14 | 2,835 |
| Total Gross Incremental Savings (kWh/yr) | 7,023,169 | 4,403,947 | 45,108,795 | 25,303,910 | 332,103 | |
| Total Net Incremental Savings (kWh/yr) | 5,969,694 | 3,743,355 | 19,078,531 | 12,810,453 | 158,228 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | 3,366 | 3,385 | 5,921 | 4,218 | 49 | |
| Peak Net Inc. Summer Demand Reduction (kW) | 2,861 | 2,877 | 3,807 | 2,844 | 33 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | 0 | 0 | 0 | 2,978 | 22 | |
| Peak Net Inc. Winter Demand Reduction (kW) | 0 | 0 | 0 | 1,794 | 13 | |
| Total Net Lifetime Savings (kWh) | 3,512,528 | 11,302,975 | 29,336,722 | 62,968,828 | 104,720,406 | 267,504,848 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 2,861 | 5,739 | 9,546 | 12,390 | 12,423 | 12,423 |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0 | 0 | 0 | 1,794 | 1,807 | 1,807 |

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



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



OFFICIAL COPY

Jun 15 2023

NON-RESIDENTIAL PRESCRIPTIVE

2018-2022

13,410 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Properly sealed duct and air distribution systems
- Efficient heating and cooling systems
- Efficient refrigeration system and kitchen appliances



Enrolled **120** customers, **105%** of planned participation



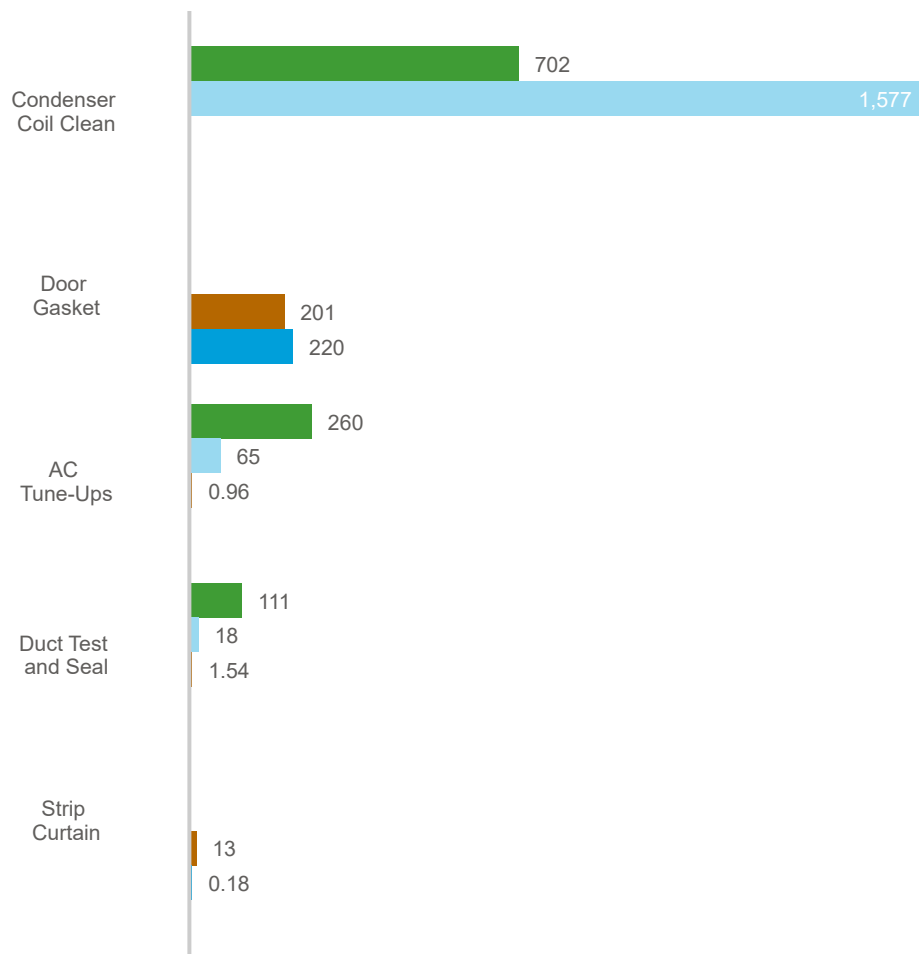
Achieved net annual energy savings of **1,609 MWh/year**, **31%** of planned energy savings



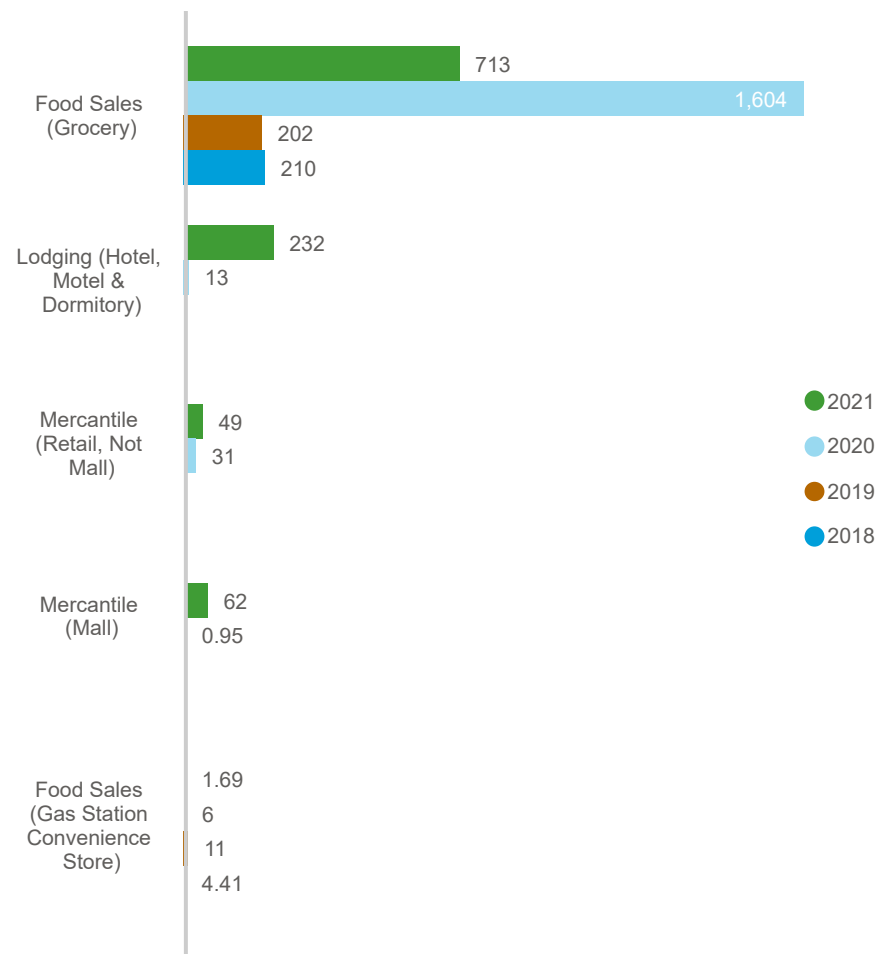
Spent **77%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|---------|---------|-----------|-----------|-------|------------|
| Total Program Cost (\$) | 180,139 | 189,380 | 372,698 | 468,837 | 8,552 | 1,219,606 |
| Total Program Participants (#) | 21 | 36 | 19 | 44 | 0 | 120 |
| Total Gross Incremental Savings (kWh/yr) | 221,779 | 227,788 | 1,671,465 | 1,073,802 | 0 | |
| Total Net Incremental Savings (kWh/yr) | 188,512 | 193,620 | 666,832 | 560,244 | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | 25 | 30 | 180 | 182 | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | 21 | 26 | 112 | 121 | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | 0 | 0 | 0 | 173 | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | 0 | 0 | 0 | 109 | 0 | |
| Total Net Lifetime Savings (kWh) | 20,397 | 372,440 | 946,455 | 2,401,851 | 0 | 10,386,891 |
| Peak Net Lifetime Summer Demand Reduction (kW) | 21 | 47 | 159 | 280 | 0 | 280 |
| Peak Net Lifetime Winter Demand Reduction (kW) | 0 | 0 | 0 | 109 | 0 | 109 |

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



TOTAL SAVINGS BY BUILDING TYPE
(MWH/YR)



Case #: PUR-2020-00274

NON-RESIDENTIAL PRESCRIPTIVE ENHANCED

2021-Present

21,758 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Cooking Appliances
- 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



Enrolled **366** customers, **65%** of planned participation



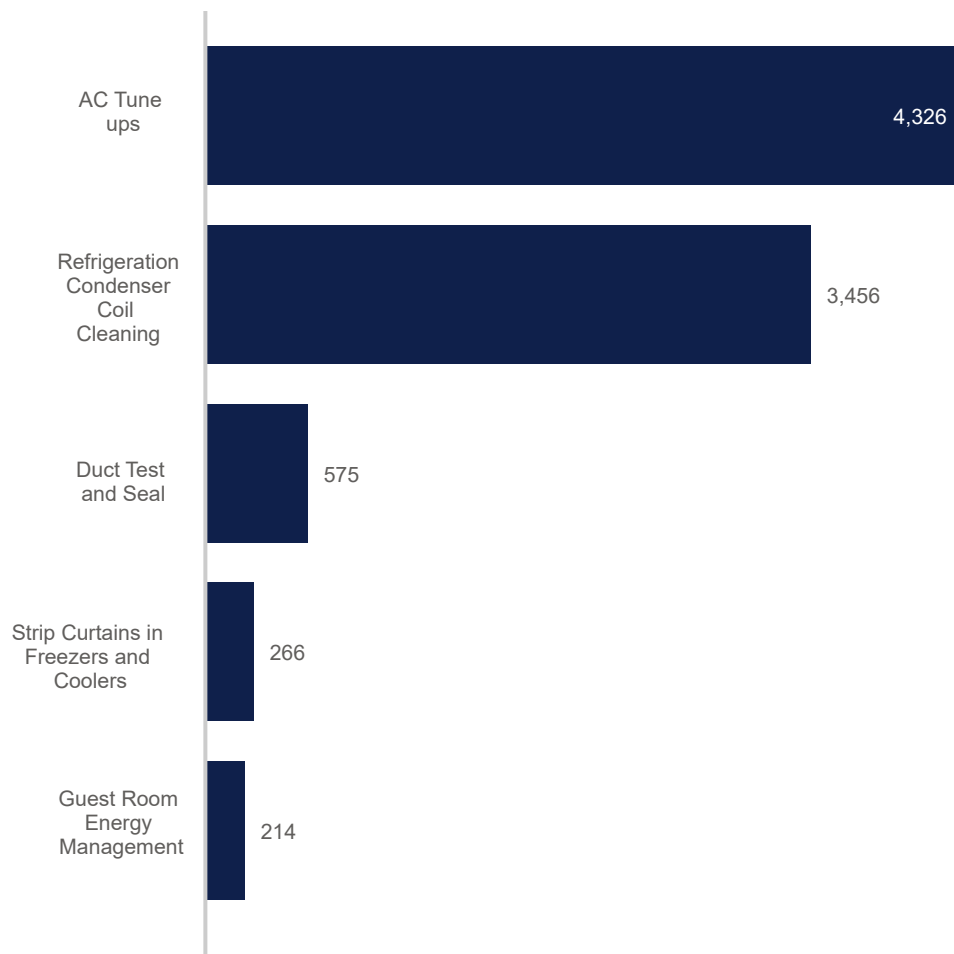
Achieved net annual energy savings of **7,963 MWh/year**, **52%** of planned energy savings



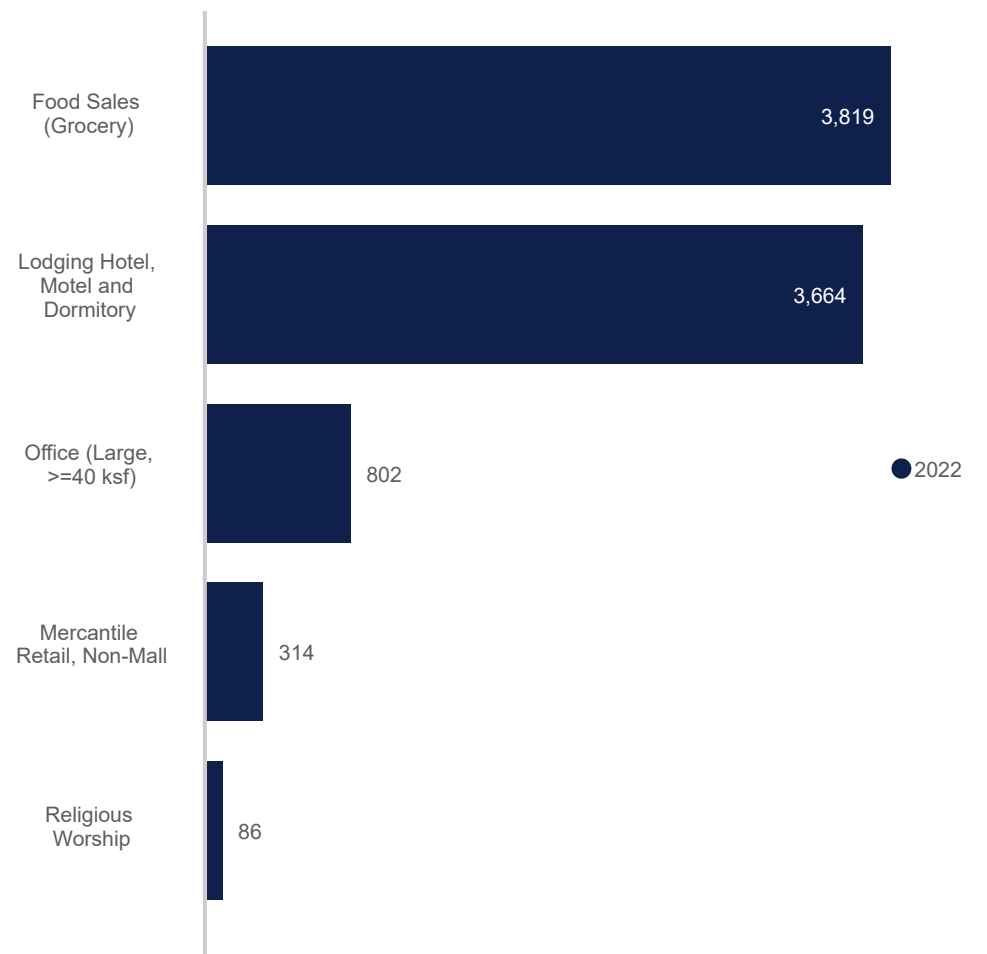
Spent **134%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|-----------|------------|
| Total Program Cost (\$) | | | | 33,042 | 5,652,798 | 5,685,839 |
| Total Program Participants (#) | | | | 0 | 366 | 366 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 8,848,159 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 7,963,344 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 5,598 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 5,038 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 854 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 768 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 838,656 | 78,020,220 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 5,038 | 5,038 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 768 | 768 |

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



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



NON-RESIDENTIAL PRESCRIPTIVE ENHANCED

2022-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Cooking Appliances
- 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



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



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



Spent **20%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|--------|----------|
| Total Program Cost (\$) | | | | | 21,735 | 21,735 |
| Total Program Participants (#) | | | | | 0 | |
| Total Gross Incremental Savings (kWh/yr) | | | | | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Total Net Lifetime Savings (kWh) | | | | | 0 | |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 0 | |

Case #: PUE-2018-00168

NON-RESIDENTIAL HEATING AND COOLING EFFICIENCY

2019-Present

74,129 kWh/yr Average Net Savings Per Participant

Eligibility

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

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



Enrolled **125** customers, **5%** of planned participation



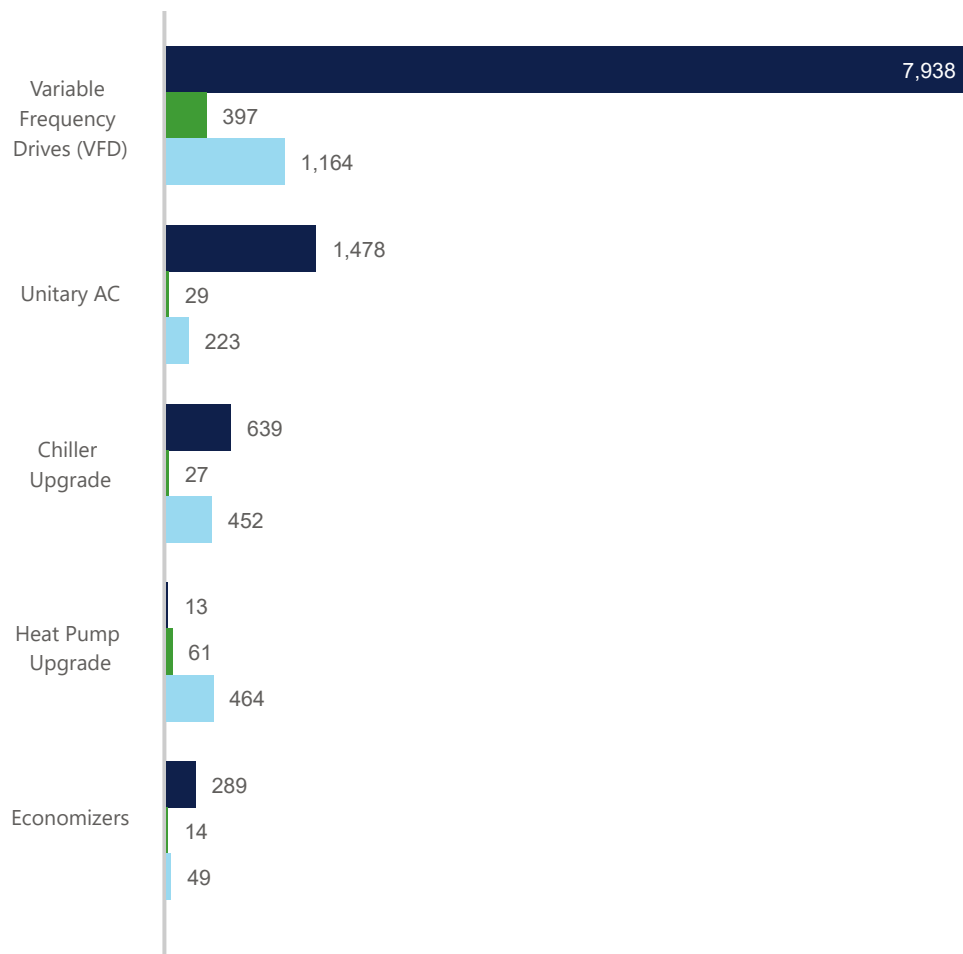
Achieved net annual energy savings of **9,266 MWh/year**, **32%** of planned energy savings



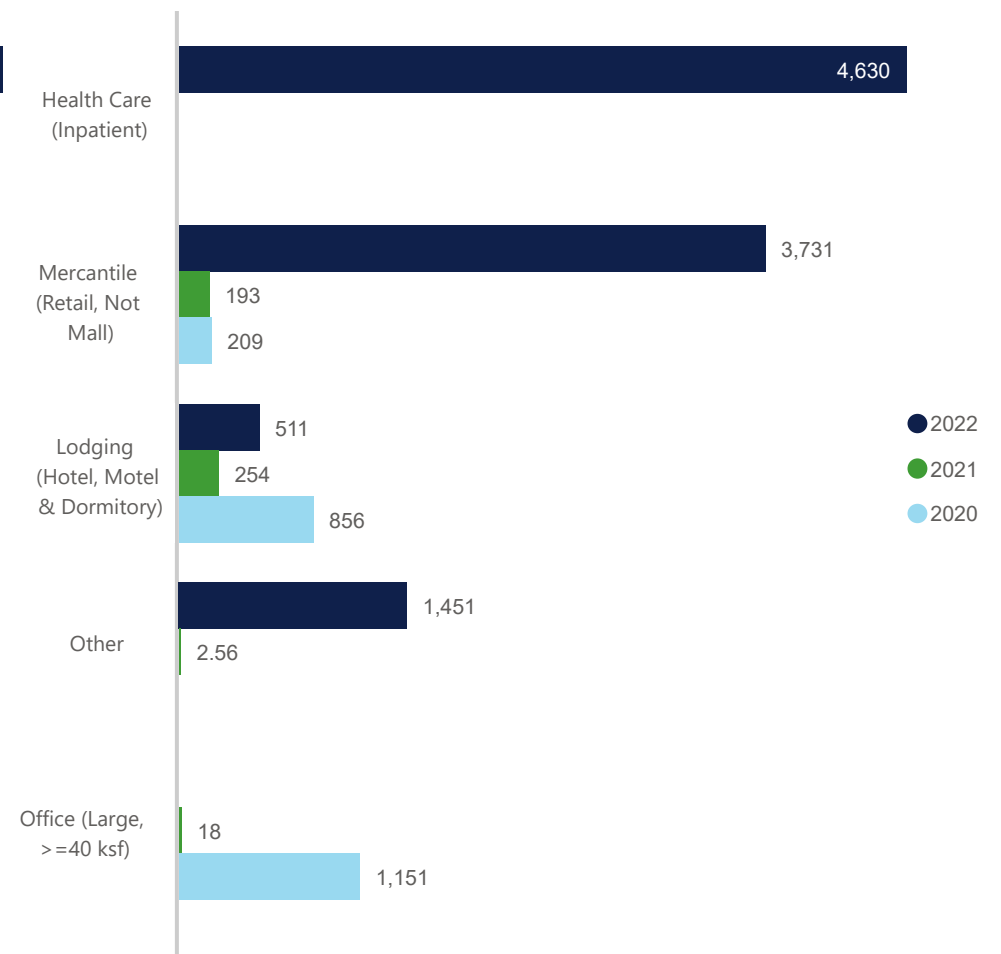
Spent **41%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|---------|-----------|-----------|------------|-------------|
| Total Program Cost (\$) | | 342,194 | 723,971 | 582,157 | 1,173,390 | 2,821,712 |
| Total Program Participants (#) | | 0 | 30 | 44 | 51 | 125 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 2,352,639 | 527,840 | 10,356,854 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 1,646,848 | 369,488 | 7,249,798 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 408 | 59 | 2,809 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 286 | 41 | 1,966 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 29 | 168 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 20 | 118 | |
| Total Net Lifetime Savings (kWh) | | 0 | 562,915 | 2,374,210 | 6,258,605 | 139,003,698 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 286 | 327 | 2,293 | 2,293 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 20 | 138 | 138 |

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



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



NON-RESIDENTIAL HEATING AND COOLING EFFICIENCY

2019-Present

49,877 kWh/yr Average Net Savings Per Participant

Eligibility

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

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



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



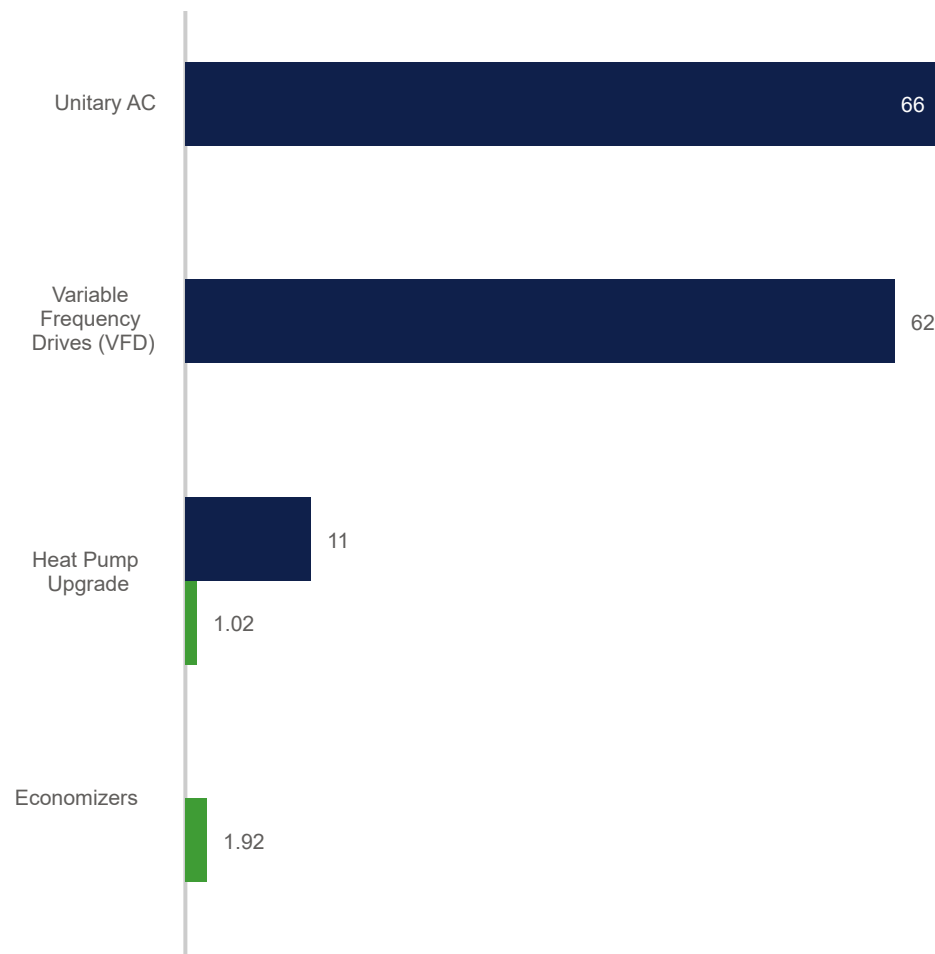
Achieved net annual energy savings of **99,753 kWh/year**, **6%** of planned energy savings



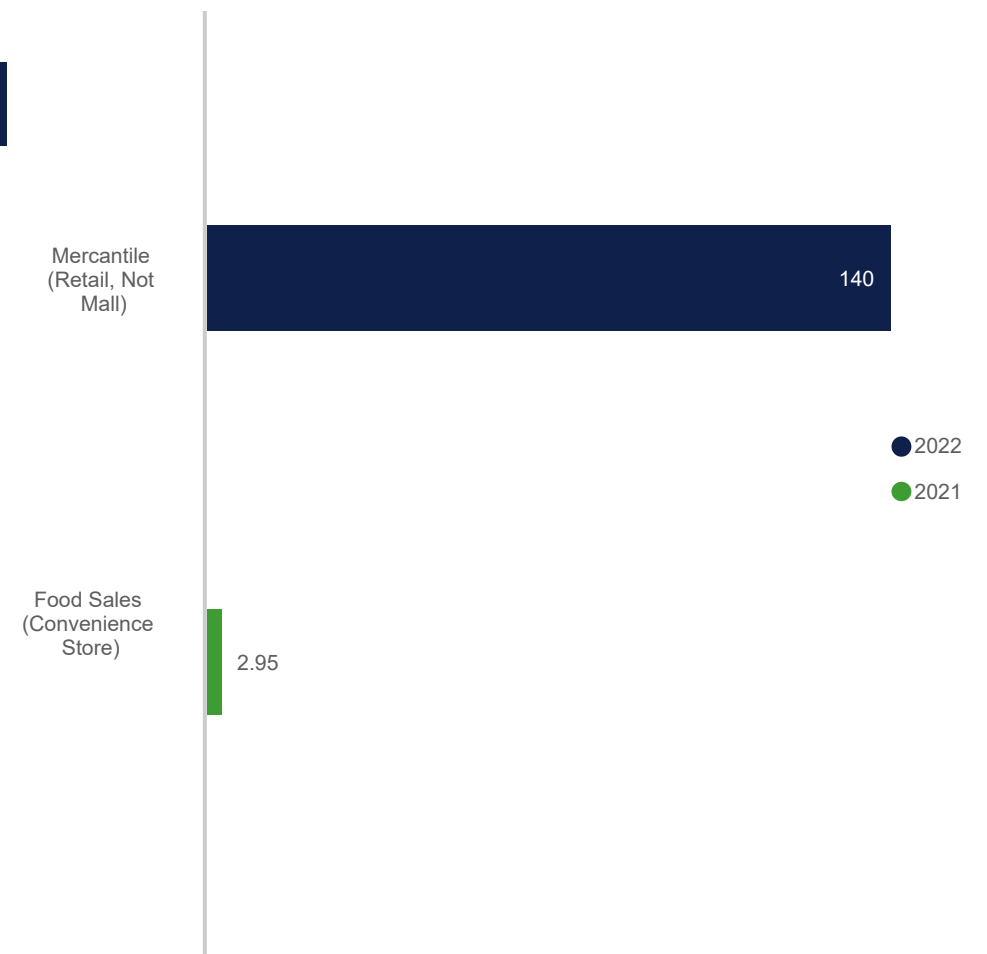
Spent **30%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|--------|---------|-----------|
| Total Program Cost (\$) | | | 30,873 | 33,730 | 43,699 | 108,302 |
| Total Program Participants (#) | | | 0 | 1 | 1 | 2 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 2,946 | 139,559 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 2,062 | 97,691 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 1 | 18 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 12 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 1 | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 0 | 0 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 811 | 33,866 | 1,496,333 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 13 | 13 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



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



Case #: PUE-2018-00168

NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2019-Present

38,624 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- T8s with electronic ballast
- High-performance T8s
- T5s with electronic ballast
- LEDs
- Occupancy sensors



Enrolled **987** customers, **60%** of planned participation



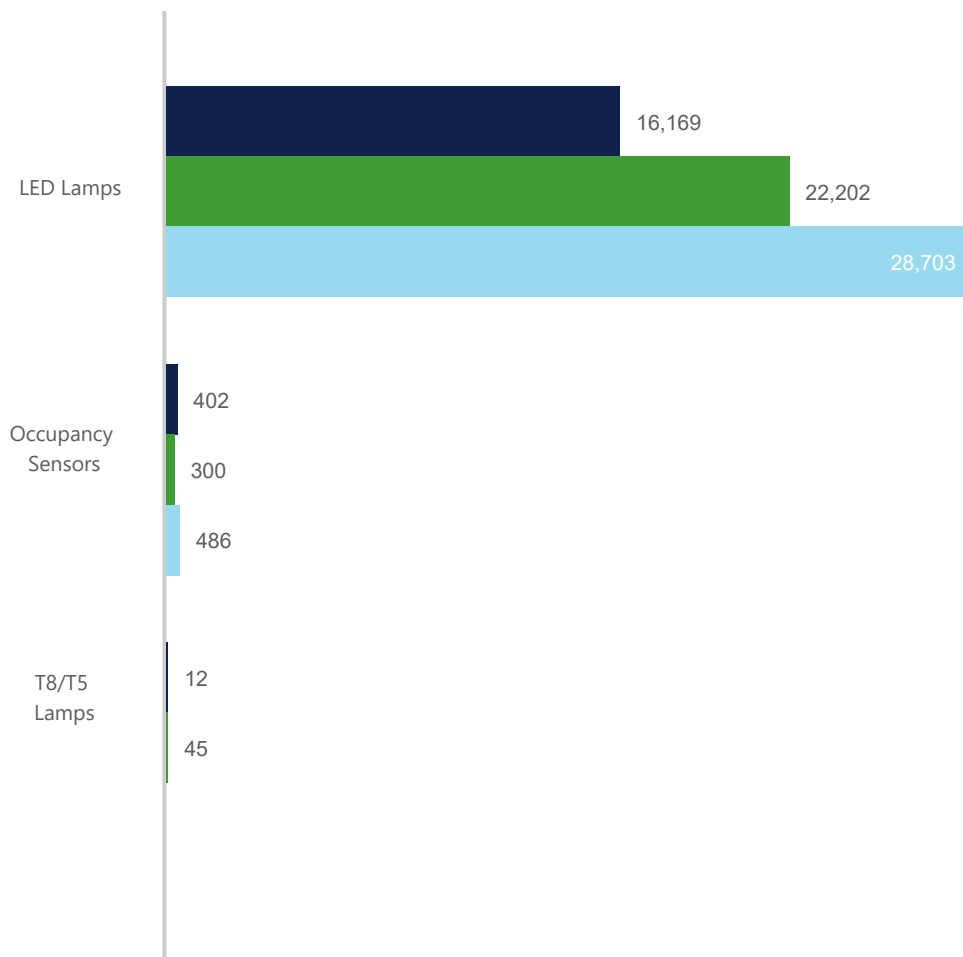
Achieved net annual energy savings of **38,122 MWh/year**, **114%** of planned energy savings



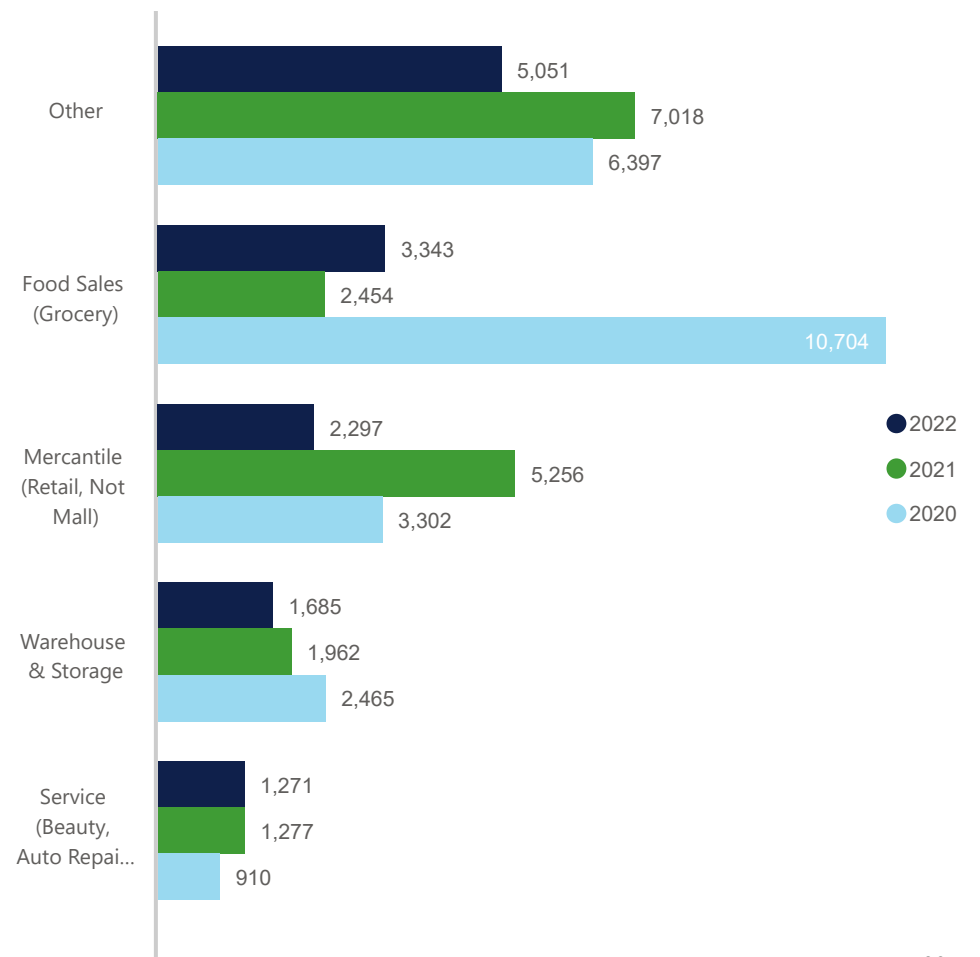
Spent **121%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|---------|------------|------------|------------|-------------|
| Total Program Cost (\$) | | 592,373 | 3,989,872 | 3,537,467 | 2,749,190 | 10,868,902 |
| Total Program Participants (#) | | 0 | 406 | 388 | 193 | 987 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 29,189,250 | 22,546,913 | 16,583,111 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 16,287,601 | 12,581,177 | 9,253,376 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 4,020 | 3,195 | 2,582 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 1,845 | 1,466 | 1,185 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 2,488 | 1,773 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 1,108 | 790 | |
| Total Net Lifetime Savings (kWh) | | 0 | 6,688,884 | 29,597,188 | 62,477,163 | 388,182,585 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 1,845 | 3,312 | 4,497 | 4,497 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 1,108 | 1,898 | 1,898 |

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



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



NON-RESIDENTIAL LIGHTING SYSTEMS & CONTROLS

2019-Present

38,210 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- T8s with electronic ballast
- High-performance T8s
- T5s with electronic ballast
- LEDs
- Occupancy sensors



Enrolled **26** customers, **31%** of planned participation



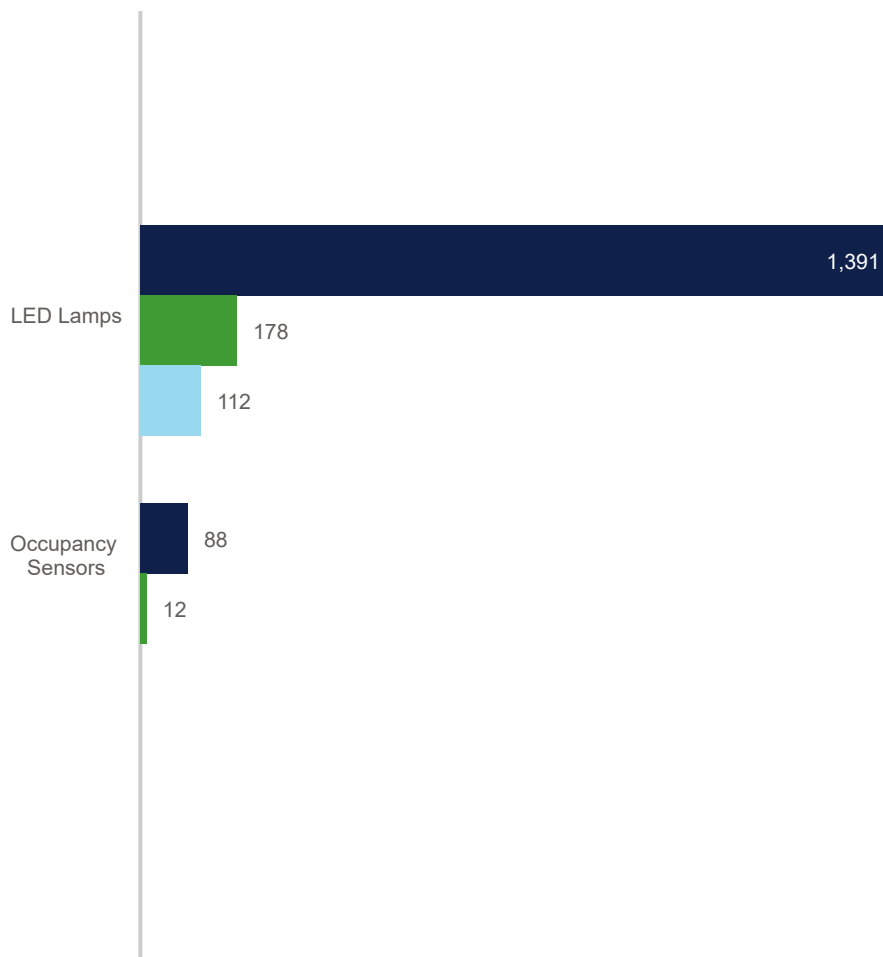
Achieved net annual energy savings of **993,455 kWh/year**, **59%** of planned energy savings



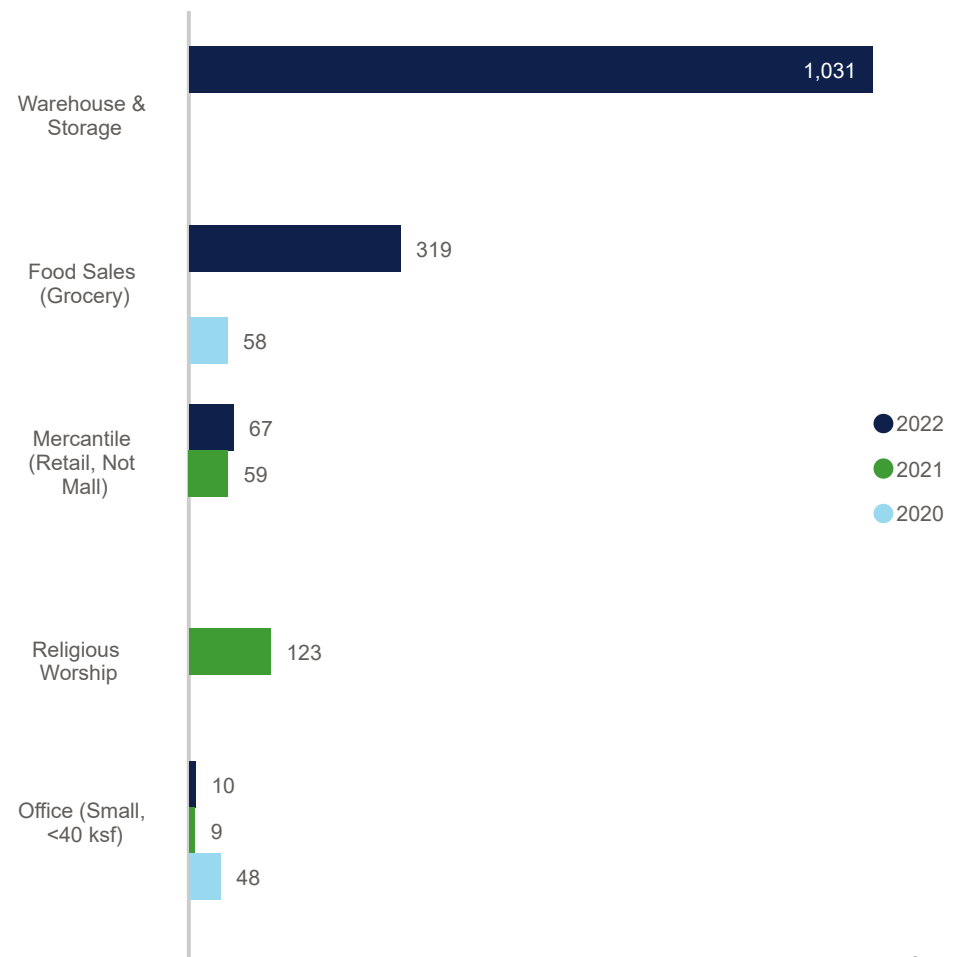
Spent **100%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|---------|---------|-----------|------------|
| Total Program Cost (\$) | | | 160,883 | 92,989 | 209,012 | 462,884 |
| Total Program Participants (#) | | | 9 | 5 | 12 | 26 |
| Total Gross Incremental Savings (kWh/yr) | | | 111,813 | 189,982 | 1,478,591 | |
| Total Net Incremental Savings (kWh/yr) | | | 62,392 | 106,010 | 825,054 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 5 | 41 | 323 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 2 | 19 | 148 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 17 | 108 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 8 | 48 | |
| Total Net Lifetime Savings (kWh) | | | 31,882 | 145,889 | 504,159 | 10,103,852 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 2 | 21 | 170 | 170 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 8 | 56 | 56 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



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



Case #: PUE-2018-00168

NON-RESIDENTIAL SMALL MANUFACTURING

2019-Present

224,925 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



Enrolled **20** customers, **9%** of planned participation



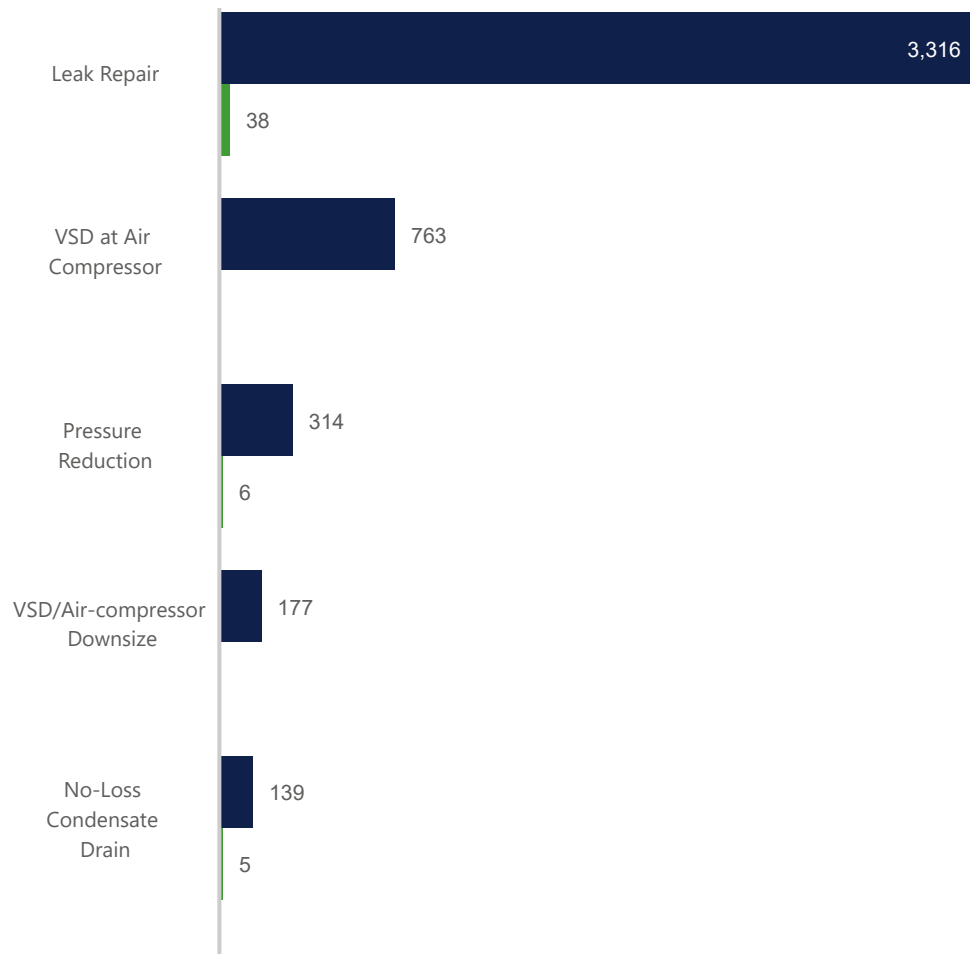
Achieved net annual energy savings of **4,498 MWh/year**, **42%** of planned energy savings



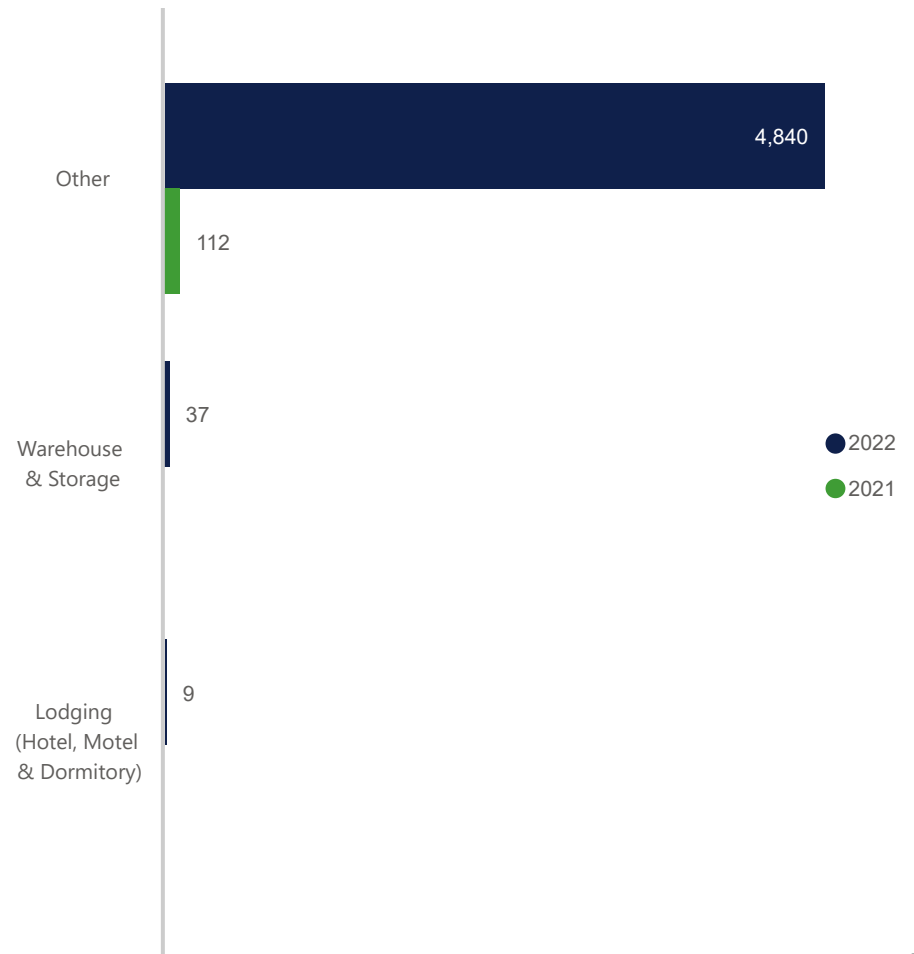
Spent **37%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|---------|---------|---------|-----------|------------|
| Total Program Cost (\$) | | 367,297 | 331,721 | 280,616 | 695,693 | 1,675,327 |
| Total Program Participants (#) | | 0 | 0 | 1 | 19 | 20 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 0 | 112,237 | 4,886,095 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 0 | 101,013 | 4,397,486 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 0 | 23 | 582 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 0 | 21 | 524 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 23 | 582 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 21 | 524 | |
| Total Net Lifetime Savings (kWh) | | 0 | 0 | 24,687 | 1,256,309 | 55,479,183 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 0 | 21 | 545 | 545 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 21 | 545 | 545 |

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



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



NON-RESIDENTIAL SMALL MANUFACTURING

2019-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



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



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



Spent **22%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|--------|--------|----------|
| Total Program Cost (\$) | | | 18,987 | 17,245 | 16,181 | 52,413 |
| 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 | |

Case #: PUE-2018-00168

NON-RESIDENTIAL WINDOW FILM

2019-Present

5,917 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Solar reduction window film



Enrolled **69** customers, **0.02%** of planned participation



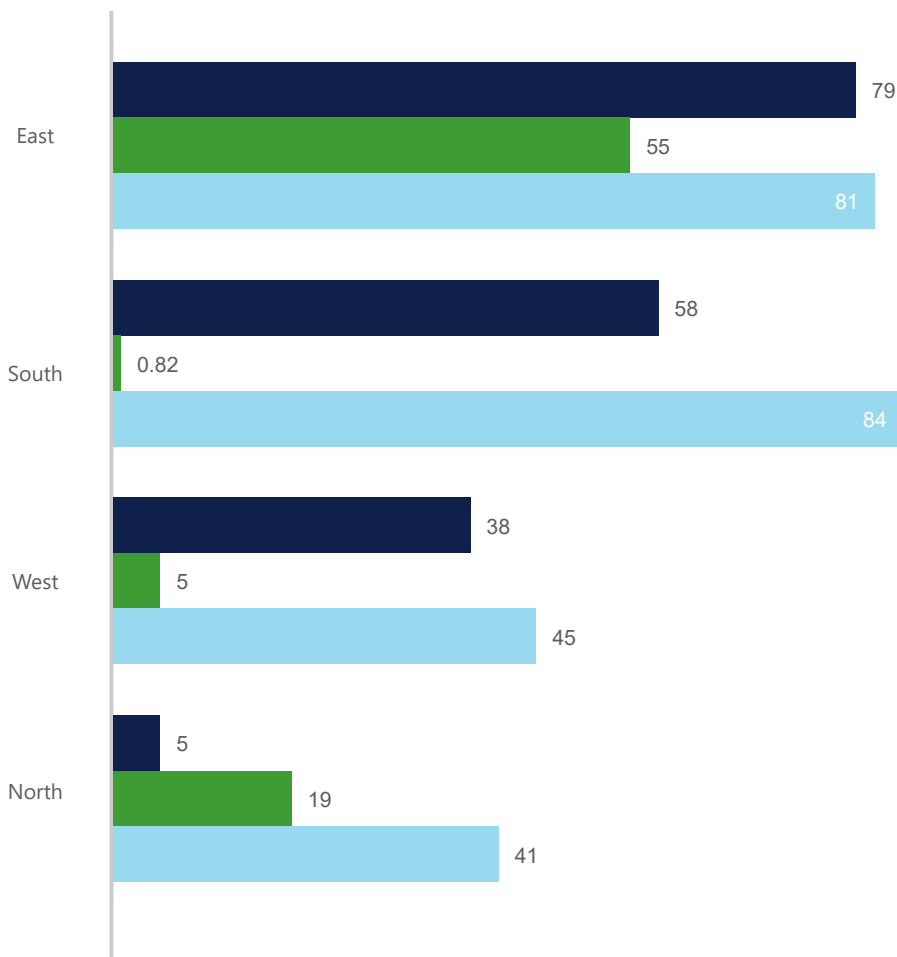
Achieved net annual energy savings of **408,265 kWh/year**, **7%** of planned energy savings



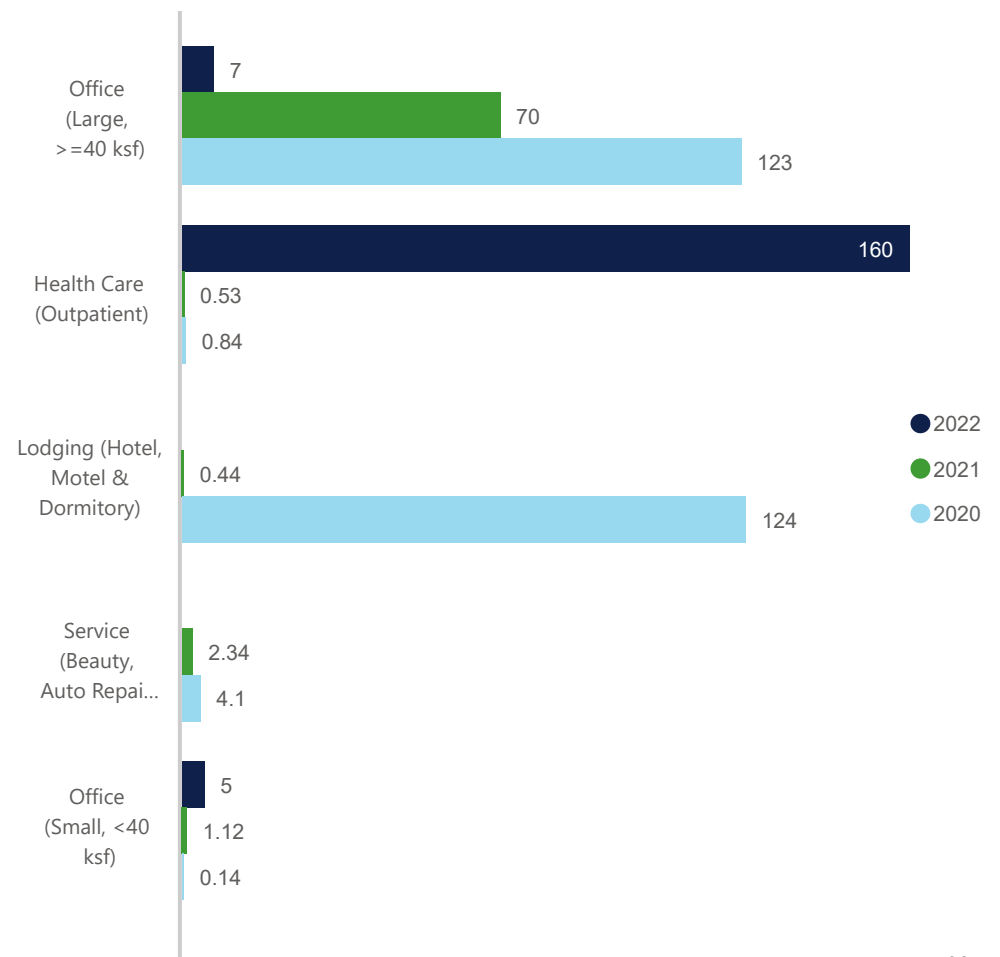
Spent **70%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|---------|---------|---------|---------|-----------|
| Total Program Cost (\$) | | 192,146 | 356,882 | 325,497 | 273,733 | 1,148,259 |
| Total Program Participants (#) | | 0 | 22 | 19 | 28 | 69 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 250,377 | 79,659 | 180,296 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 200,302 | 63,727 | 144,237 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 78 | 0 | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 62 | 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 | 117,854 | 370,378 | 650,428 | 4,083,521 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 62 | 62 | 62 | 62 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY ORIENTATION
(MWH/YR)



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



NON-RESIDENTIAL WINDOW FILM

2019-Present

6,974 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Solar reduction window film



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



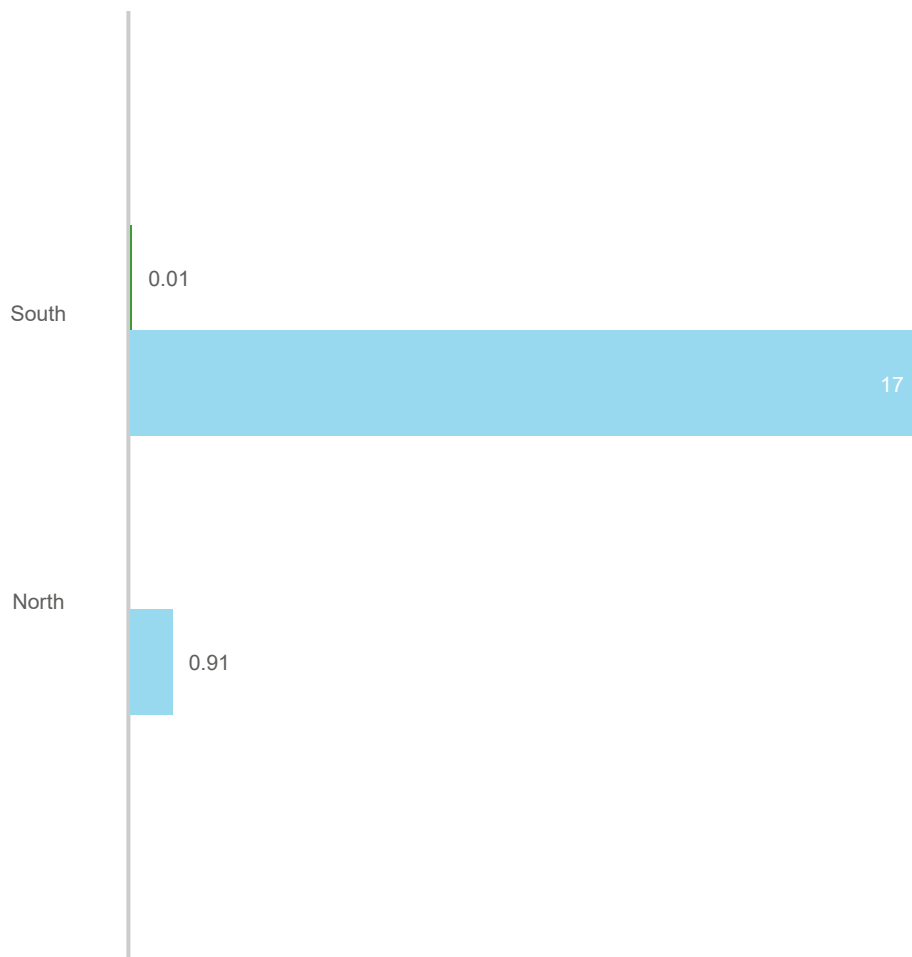
Achieved net annual energy savings of **13,948 kWh/year**, **4%** of planned energy savings



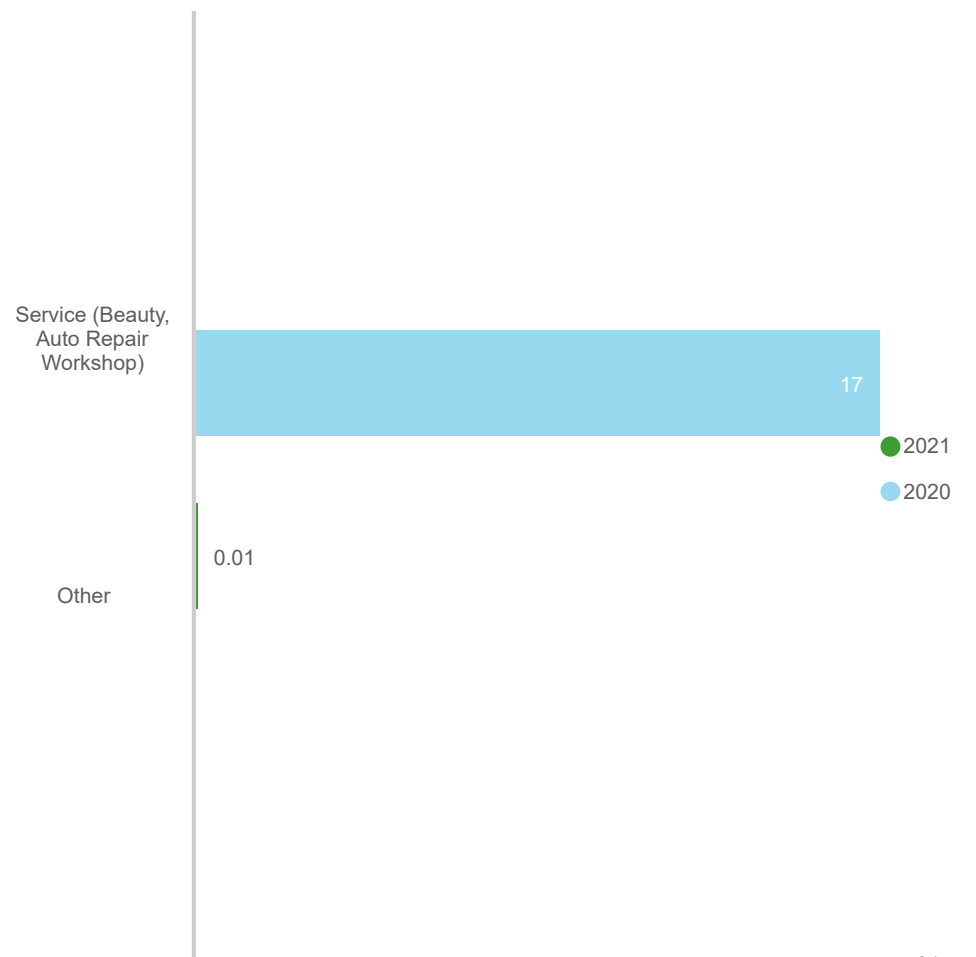
Spent **62%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|--------|--------|----------|
| Total Program Cost (\$) | | | 18,804 | 19,546 | 13,856 | 52,206 |
| Total Program Participants (#) | | | 1 | 1 | 0 | 2 |
| Total Gross Incremental Savings (kWh/yr) | | | 17,430 | 6 | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | 13,944 | 5 | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 5 | 0 | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 4 | 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) | | | 4,849 | 18,794 | 0 | 139,528 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 4 | 4 | 0 | 4 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY ORIENTATION
(MWH/YR)



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





Case #: PUR-2019-00201

NON-RESIDENTIAL MIDSTREAM ENERGY EFFICIENCY PRODUCTS

2020-Present

12,674 kWh/yr Average Net Savings Per Participant

Eligibility

- Distributors or retailers must operate in Dominion Energy's service territory in the Commonwealth of Virginia
- Distributors or retailers must provide Dominion Energy with monthly point-of-sale data for the eligible equipment

Measures

- ENERGY STAR® certified kitchen appliances
- Efficient heating & cooling equipment



Enrolled **120** customers, **20%** of planned participation



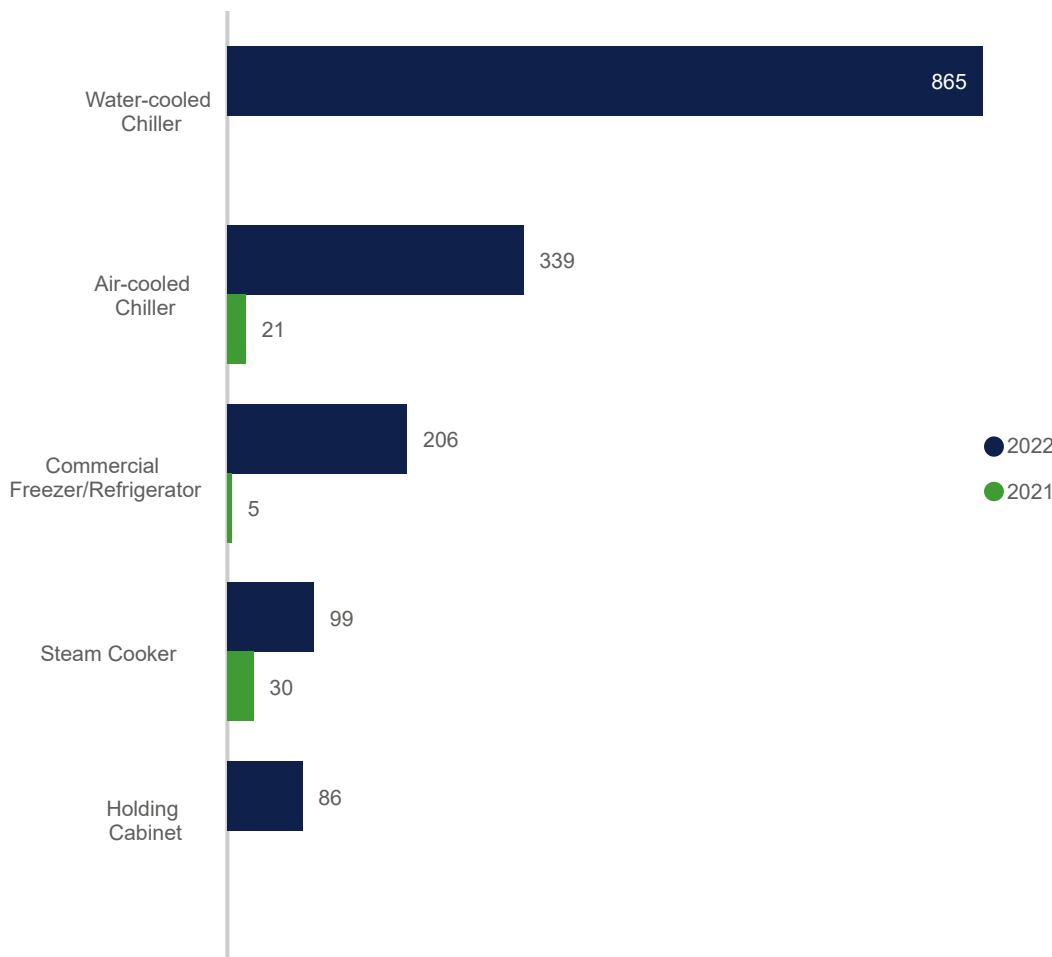
Achieved net annual energy savings of **1,521 MWh/year**, **20%** of planned energy savings



Spent **36%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|-----------|------------|
| Total Program Cost (\$) | | | 46,145 | 488,674 | 845,079 | 1,379,898 |
| Total Program Participants (#) | | | 0 | 7 | 113 | 120 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 65,116 | 1,624,787 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 58,605 | 1,462,308 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 81 | 1,957 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 73 | 1,762 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 11 | 74 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 10 | 67 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 5,897 | 394,027 | 29,475,632 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 73 | 1,835 | 1,835 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 10 | 77 | 77 |

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





7. ENERGY EFFICIENCY - NON-RESIDENTIAL TARGETED SECTORS

The Non-Residential Targeted Sectors Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|---|----|----|
| 8 | CMFP | Non-Residential Multifamily | ✓ | |
| 8 | CNCR | Non-Residential New Construction | ✓ | ✓ |
| 8 | SBI2 | Non-Residential Small Business Improvement Enhanced | ✓ | ✓ |
| 9 | CAGR | Non-Residential Agricultural Energy Efficiency | ✓ | |

Figure 7-1 and Figure 7-2 show the cumulative count of non-residential targeted sectors 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, Fairfax, and Chesterfield. 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 Henrico, Richmond City, and Chesterfield. In North Carolina, Dare, Currituck, and Halifax counties have the most energy savings.



Figure 7-1. Virginia and North Carolina Non-Residential Targeted Sectors Program Participation, by County Participants

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

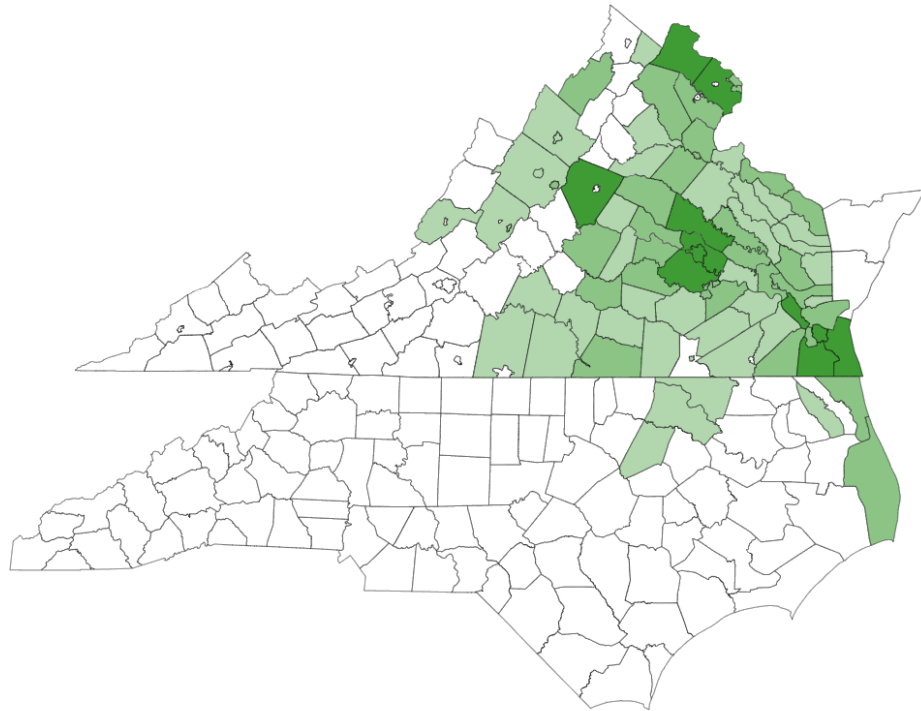
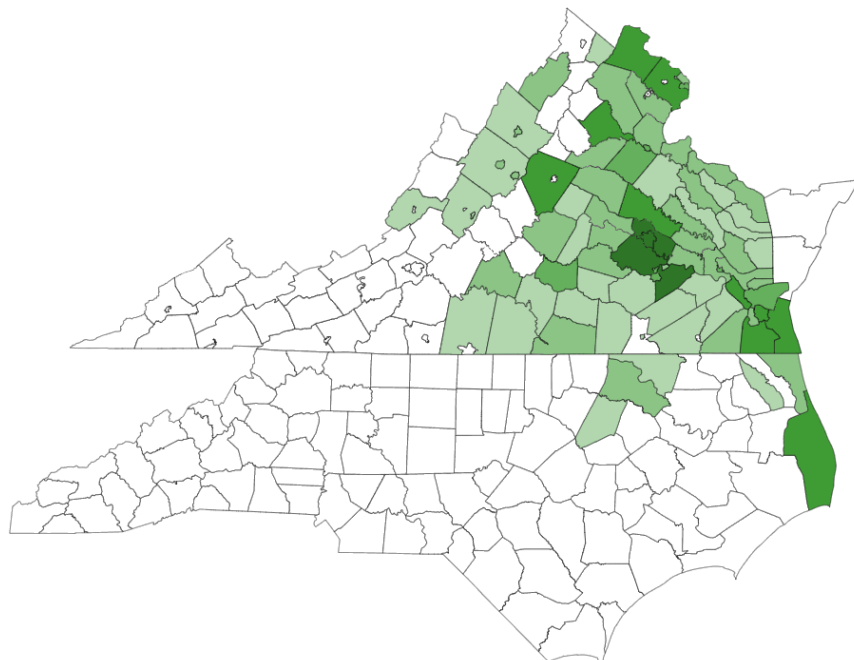


Figure 7-2. Virginia and North Carolina Non-Residential Targeted Sectors Program Gross Annualized Energy Savings, by County

- 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





Case #: PUR-2019-00201

NON-RESIDENTIAL MULTIFAMILY

2020-Present

29,809 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- On-site energy assessment of common areas
- Pipe insulation
- LED lighting
- 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



Enrolled **5** customers, **0.18%** of planned participation



Achieved net annual energy savings of **149,045 kWh/year**, **3%** of planned energy savings



Spent **45%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$) | | | 28,431 | 201,595 | 173,987 | 404,013 |
| Total Program Participants (#) | | | 0 | 0 | 5 | 5 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 0 | 165,606 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 0 | 149,045 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 18 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 0 | 16 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 0 | 18 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 0 | 16 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 0 | 5,648 | 1,267,168 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 16 | 16 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 16 | 16 |

TOTAL SAVINGS BY MEASURE TYPE TOP 5 IN KWH





Case #: PUR-2019-00201

NON-RESIDENTIAL NEW CONSTRUCTION

2020-Present

0 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 have opted-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 **0 kWh/year, 0%** of planned energy savings



Spent **48%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|---------|---------|-----------|
| Total Program Cost (\$) | | | 27,624 | 603,899 | 477,704 | 1,109,227 |
| 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 | |

NON-RESIDENTIAL NEW CONSTRUCTION

2020-Present

0 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 have opted-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 **0 kWh/year, 0%** of planned energy savings



Spent **40%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|--------|----------|
| Total Program Cost (\$) | | | | 27,089 | 30,963 | 58,052 |
| 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 | |



Case #: PUR-2019-00201

NON-RESIDENTIAL SMALL BUSINESS IMPROVEMENT ENHANCED

2020-Present

7,374 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 **898** customers, **71%** of planned participation



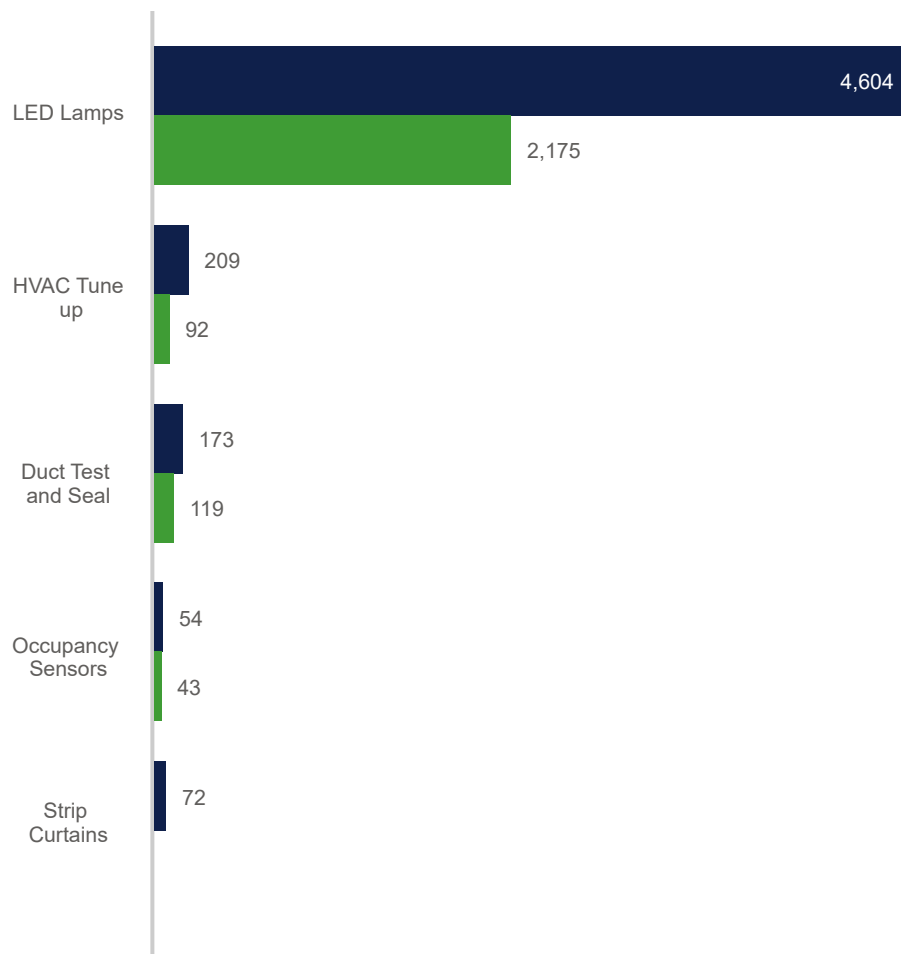
Achieved net annual energy savings of **6,622 MWh/year**, **36%** of planned energy savings



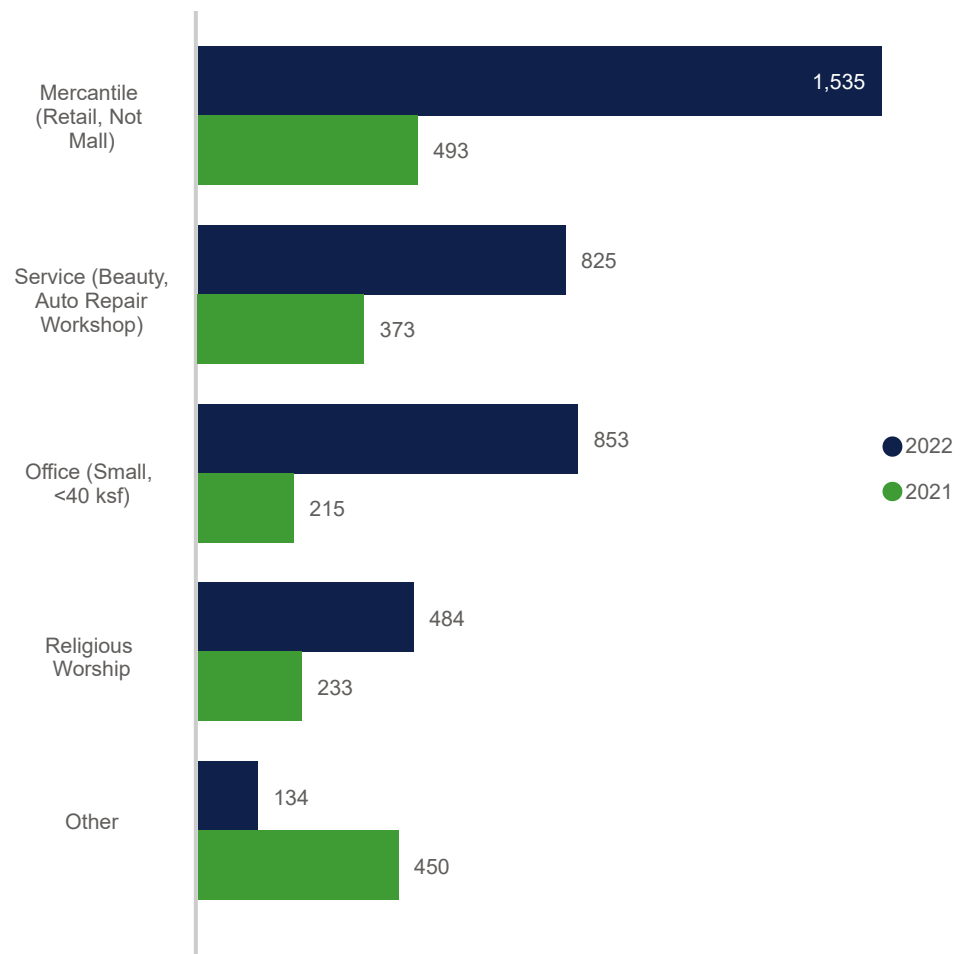
Spent **82%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|-----------|-----------|------------|
| Total Program Cost (\$) | | | 56,290 | 2,443,713 | 3,445,530 | 5,945,533 |
| Total Program Participants (#) | | | 0 | 307 | 591 | 898 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 2,429,201 | 5,119,684 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 2,131,262 | 4,490,565 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | 0 | 449 | 1,077 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | 0 | 354 | 833 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | 0 | 328 | 630 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | 0 | 253 | 478 | |
| Total Net Lifetime Savings (kWh) | | | 0 | 685,239 | 5,372,886 | 67,596,938 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 354 | 1,188 | 1,188 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 253 | 731 | 731 |

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



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



OFFICIAL COPY

Jun 15 2023

NON-RESIDENTIAL SMALL BUSINESS IMPROVEMENT ENHANCED

2020-Present

25,842 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 **16** customers, **20%** of planned participation



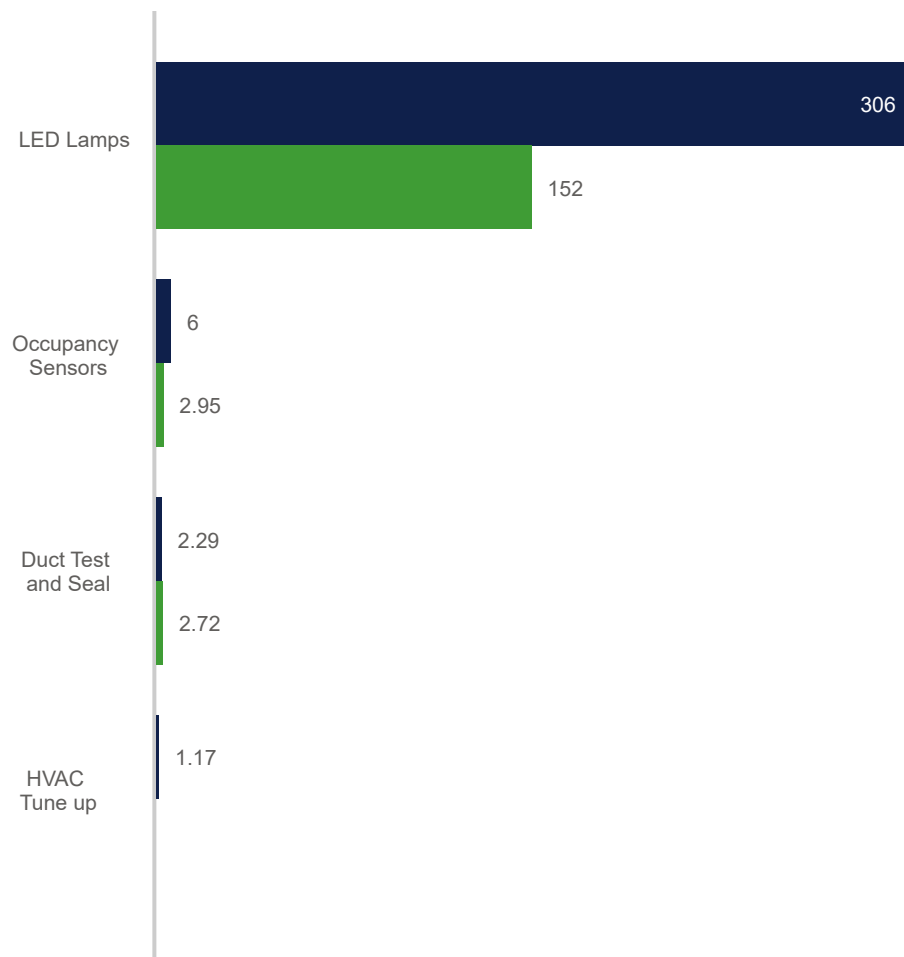
Achieved net annual energy savings of **413,468 kWh/year**, **35%** of planned energy savings



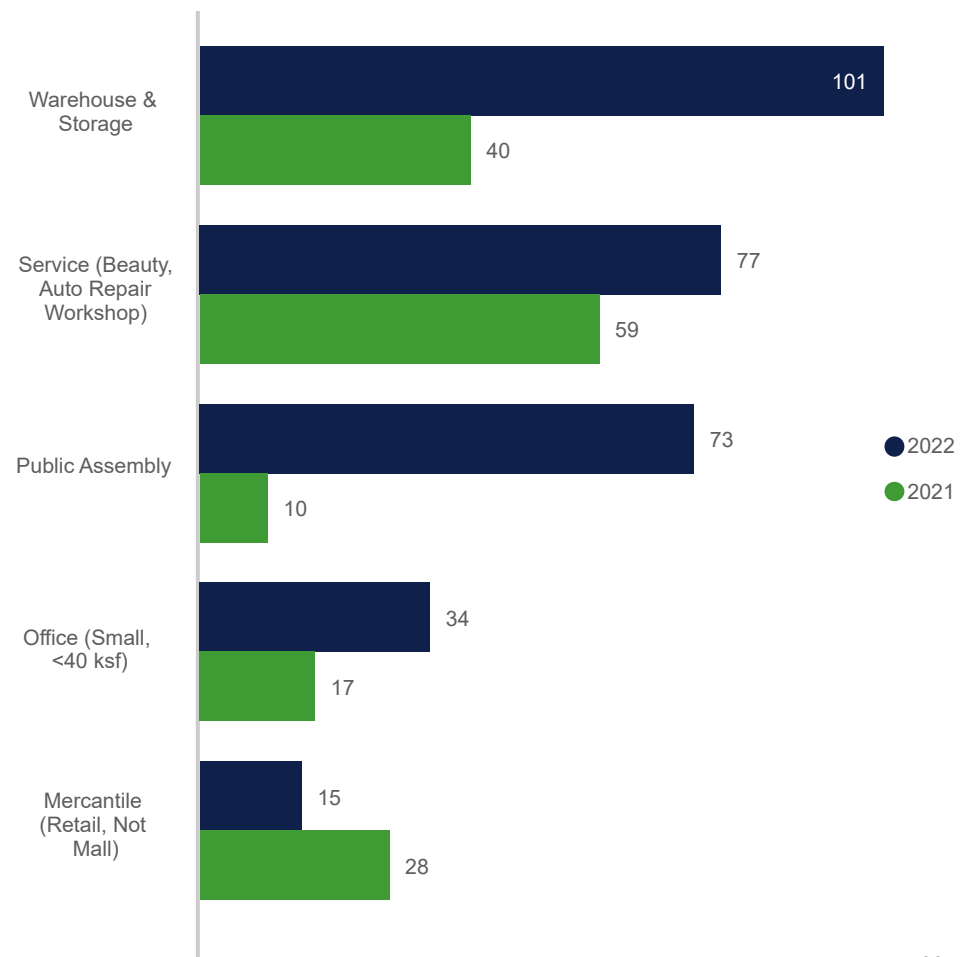
Spent **50%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|---------|---------|-----------|
| Total Program Cost (\$) | | | | 82,440 | 145,320 | 227,760 |
| Total Program Participants (#) | | | | 8 | 8 | 16 |
| Total Gross Incremental Savings (kWh/yr) | | | | 157,603 | 315,960 | |
| Total Net Incremental Savings (kWh/yr) | | | | 137,636 | 275,832 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 30 | 67 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 22 | 49 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 16 | 28 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 11 | 20 | |
| Total Net Lifetime Savings (kWh) | | | | 33,173 | 322,195 | 4,234,347 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 22 | 71 | 71 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 11 | 32 | 32 |

TOTAL SAVINGS BY MEASURE TYPE (MWH/YR)



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





Case #: PUR-2020-00274

NON-RESIDENTIAL AGRICULTURAL ENERGY EFFICIENCY

2021-Present

1,610,392 kWh/yr Average Net Savings Per Participant

Eligibility

- All non-residential customers are eligible except those exempt by statute, special contract, or have opted-out
- 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 **3** customers, **2%** of planned participation



Achieved net annual energy savings of **4,831 MWh/year**, **258%** of planned energy savings



Spent **54%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|--------|-----------|-------------|
| Total Program Cost (\$) | | | | 20,770 | 471,081 | 491,851 |
| Total Program Participants (#) | | | | 0 | 3 | 3 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 4,980,594 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 4,831,176 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 793 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 770 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 0 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 1,951,831 | 289,937,771 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 770 | 770 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 0 | 0 |

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



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





8. ENERGY EFFICIENCY - NON-RESIDENTIAL AUTOMATION & CONTROLS

The Non-Residential Automation and Controls Programs are:

| DSM Phase | Acronym | Program | VA | NC |
|-----------|---------|--|----|----|
| 8 | CTSO | Non-Residential Office | ✓ | ✓ |
| 9 | CBAS | Non-Residential Building Automation System | ✓ | ✓ |
| 9 | CBOT | Non-Residential Building Optimization | ✓ | ✓ |
| 9 | CENG | Non-Residential Engagement | ✓ | ✓ |

Figure 8-1 and Figure 8-2 show the cumulative count of non-residential automation and controls 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, Virginia Beach City and Henrico. In North Carolina, Dare and Halifax were the only two counties with participation in 2022.

Regarding energy savings, the top three jurisdictions in Virginia, in descending order, are Fairfax, Henrico, and Virginia Beach City. In North Carolina, Dare and Halifax were the only two counties with energy savings in 2022.



Figure 8-1. Virginia and North Carolina Non-Residential Automation and Controls Program Participation, by County Participants

- A. Less than 10
- B. 10 - 100

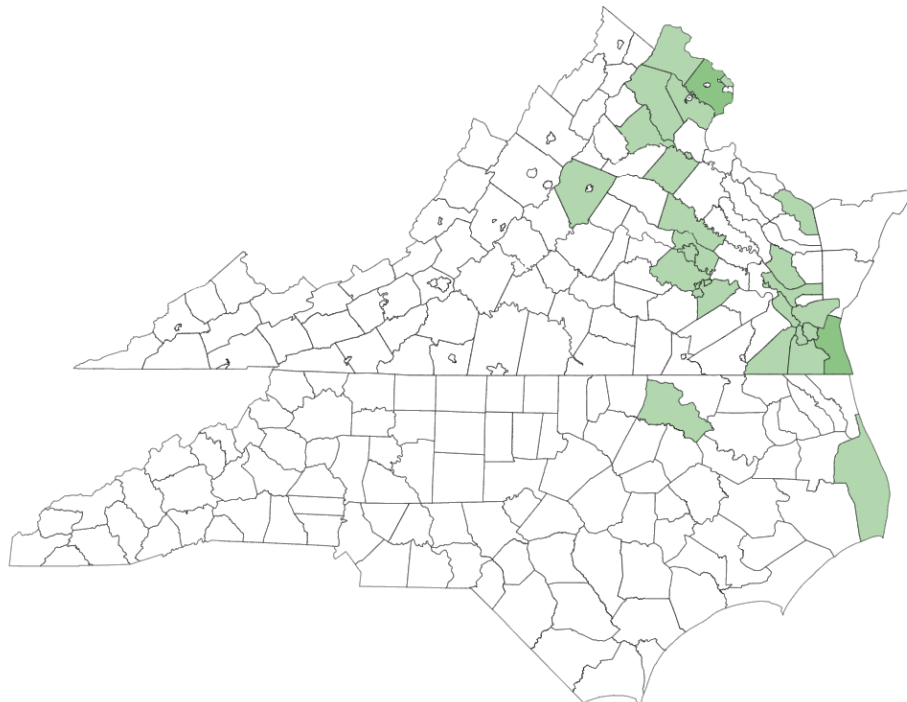
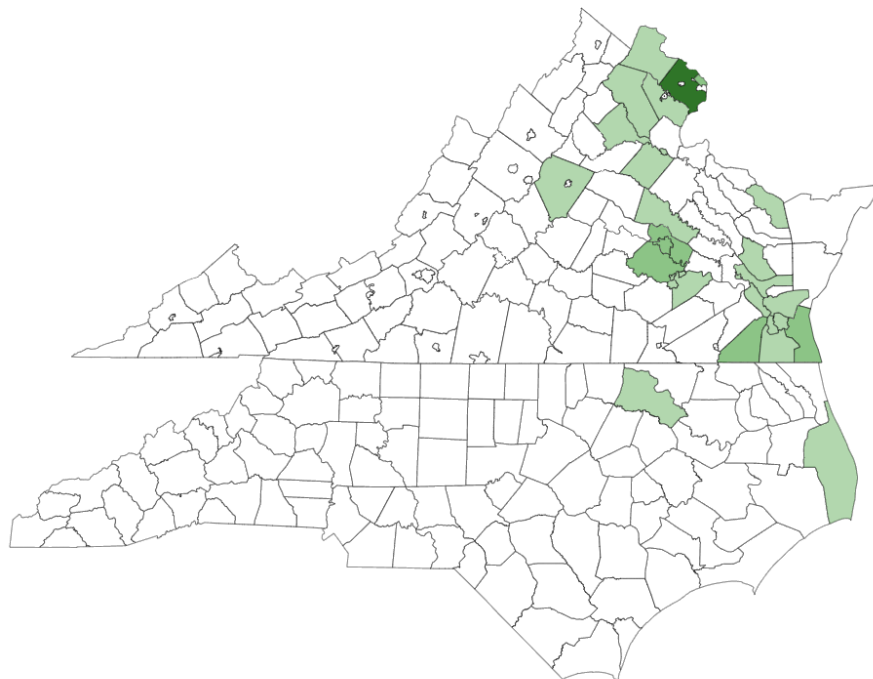


Figure 8-2. Virginia and North Carolina Non-Residential Automation and Controls Program Gross Annualized Energy Savings, by County

- Gross Total Electric Impact**
- A. Less than 100 MWh/year
 - B. 100 - 500 MWh/year
 - E. More than 5 GWh/year



Case #: PUE-2018-00168

NON-RESIDENTIAL OFFICE

2019-Present

61,690 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



Enrolled **81** customers, **29%** of planned participation



Achieved net annual energy savings of **4,997 MWh/year**, **31%** of planned energy savings

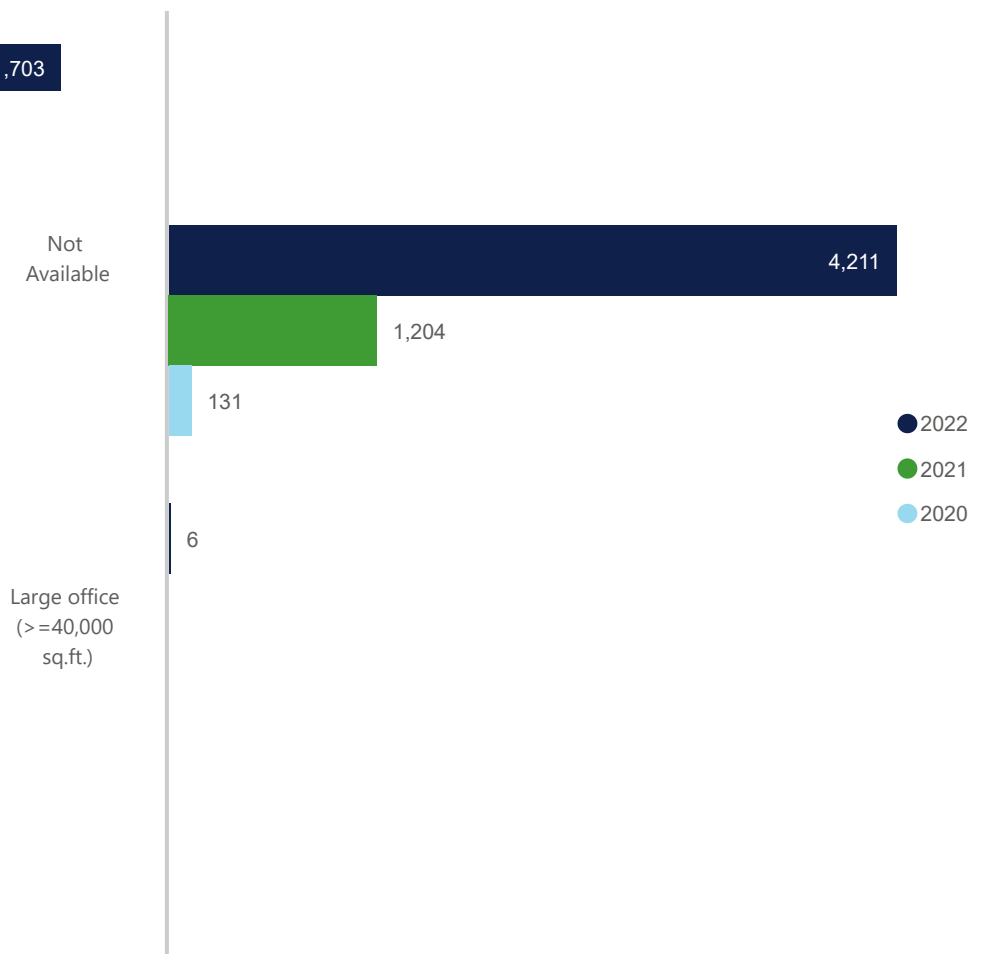
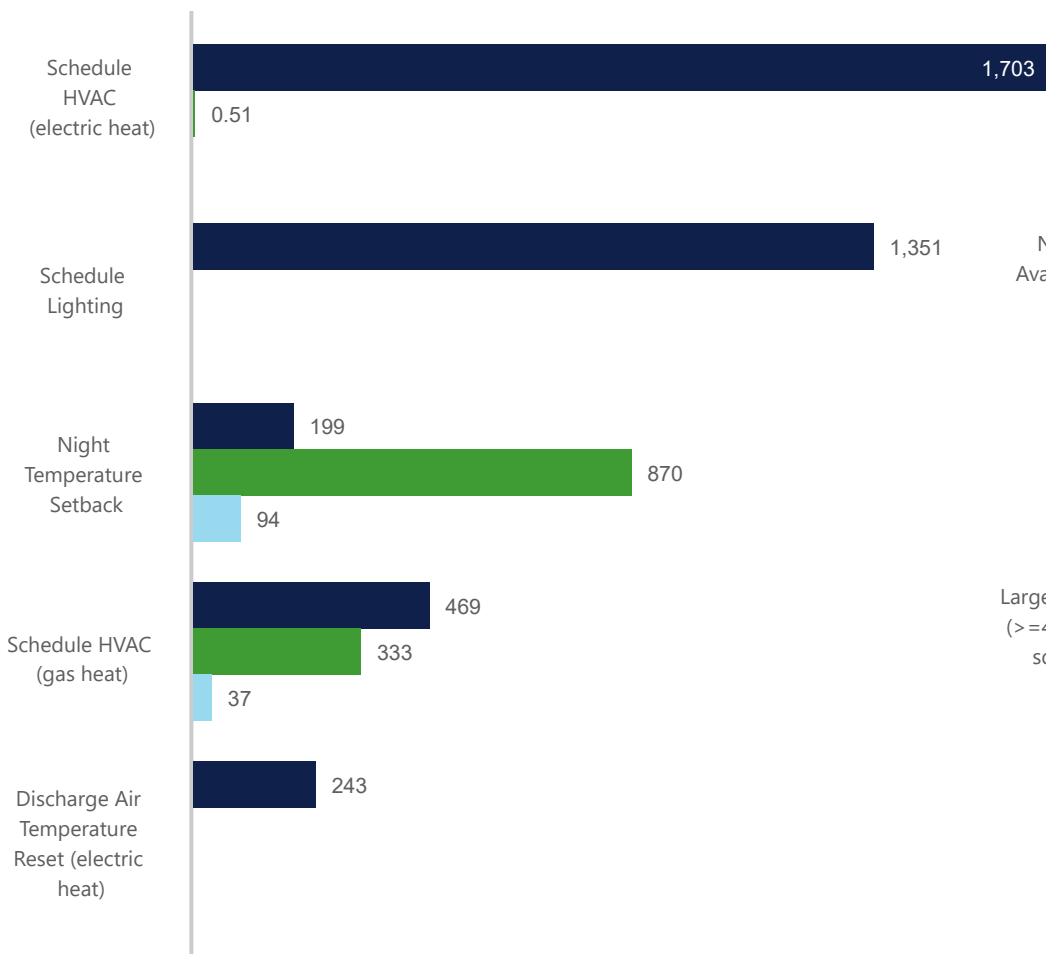


Spent **49%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|---------|---------|-----------|-----------|------------|
| Total Program Cost (\$) | | 405,507 | 408,837 | 804,161 | 477,980 | 2,096,486 |
| Total Program Participants (#) | | 0 | 6 | 59 | 16 | 81 |
| Total Gross Incremental Savings (kWh/yr) | | 0 | 131,417 | 1,203,577 | 4,217,101 | |
| Total Net Incremental Savings (kWh/yr) | | 0 | 118,275 | 1,083,219 | 3,795,391 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | 0 | 0 | 0 | 69 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | 0 | 0 | 0 | 62 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | 0 | 0 | 0 | 41 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | 0 | 0 | 0 | 37 | |
| Total Net Lifetime Savings (kWh) | | 0 | 7,334 | 1,088,672 | 2,745,340 | 34,987,222 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | 0 | 0 | 0 | 62 | 62 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | 0 | 0 | 0 | 37 | 37 |

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

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



OFFICIAL COPY

Jun 15 2023

NON-RESIDENTIAL OFFICE

2019-Present

19,550 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

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



Enrolled **2** customers, **13%** of planned participation



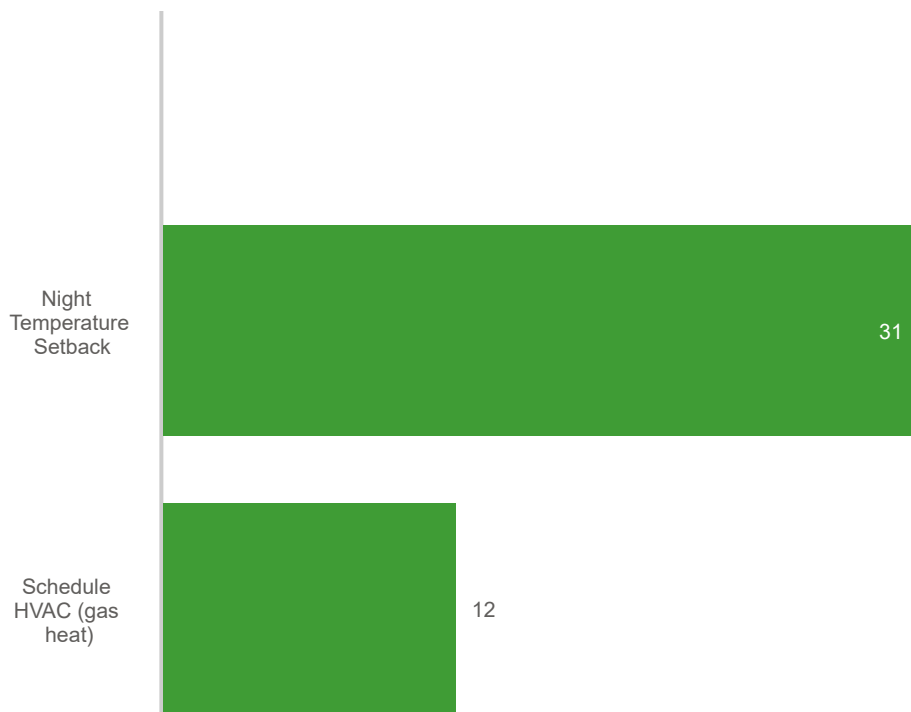
Achieved net annual energy savings of **39,100 kWh/year**, **4%** of planned energy savings



Spent **36%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|--------|--------|--------|----------|
| Total Program Cost (\$) | | | 21,142 | 38,028 | 18,553 | 77,723 |
| Total Program Participants (#) | | | 0 | 2 | 0 | 2 |
| Total Gross Incremental Savings (kWh/yr) | | | 0 | 43,444 | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | 0 | 39,100 | 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 | 20,905 | 0 | 273,790 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | 0 | 0 | 0 | 0 |

TOTAL SAVINGS BY MEASURE TYPE
(MWH/YR)



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





Case #: PUR-2020-00274

NON-RESIDENTIAL BUILDING AUTOMATION SYSTEM

2021-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Efficient building automation system programming



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 2022.



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



Spent **45%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|-------|---------|----------|
| Total Program Cost (\$) | | | | 6,714 | 425,457 | 432,171 |
| 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 | |

NON-RESIDENTIAL BUILDING AUTOMATION SYSTEM

2022-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Efficient building automation system programming



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 2022.



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



Spent **38%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|-------|----------|
| Total Program Cost (\$) | | | | | 9,301 | 9,301 |
| Total Program Participants (#) | | | | | 0 | |
| Total Gross Incremental Savings (kWh/yr) | | | | | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Total Net Lifetime Savings (kWh) | | | | | 0 | |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 0 | |



Case #: PUR-2020-00274

NON-RESIDENTIAL BUILDING OPTIMIZATION

2021-Present

809,047 kWh/yr Average Net Savings Per Participant

Eligibility

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

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



Enrolled **2** customers, **7%** of planned participation



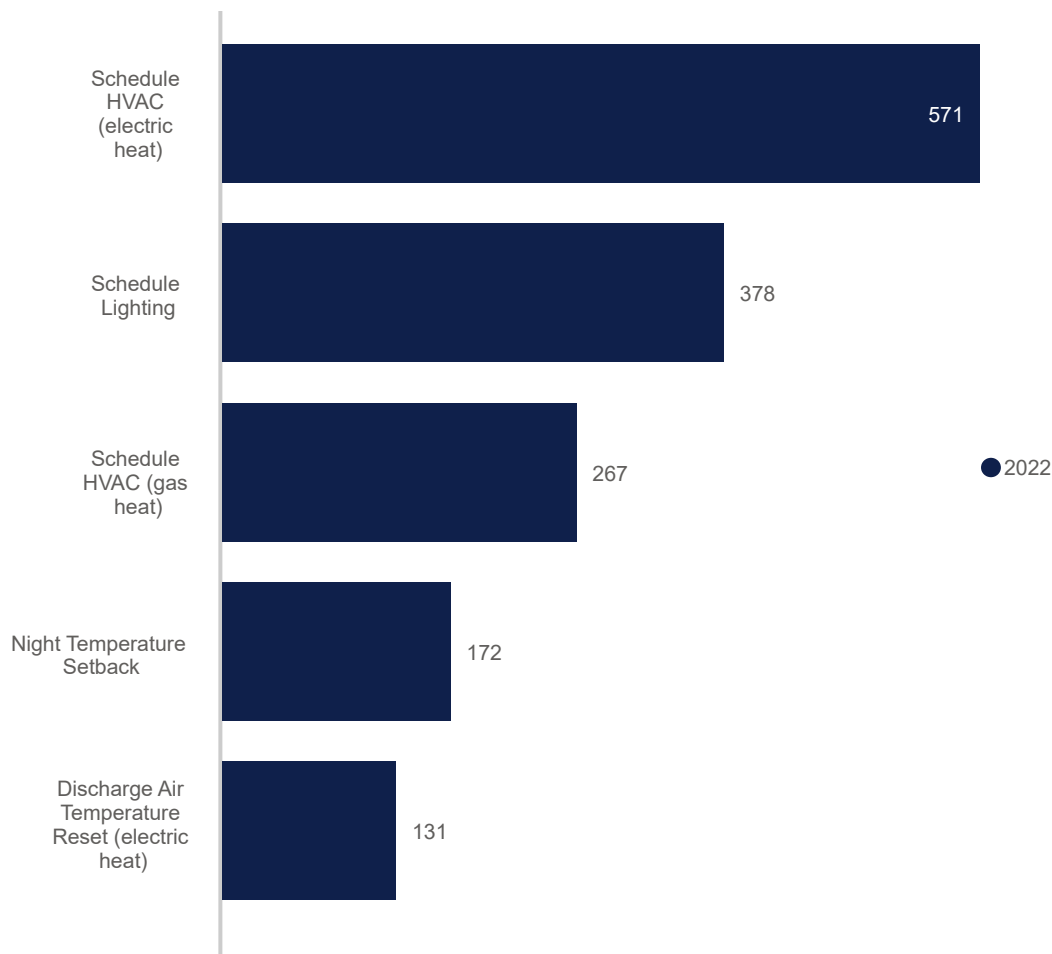
Achieved net annual energy savings of **1,618 MWh/year**, **35%** of planned energy savings



Spent **46%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|-------|-----------|-----------|
| Total Program Cost (\$) | | | | 6,996 | 503,402 | 510,398 |
| Total Program Participants (#) | | | | 0 | 2 | 2 |
| Total Gross Incremental Savings (kWh/yr) | | | | 0 | 1,797,882 | |
| Total Net Incremental Savings (kWh/yr) | | | | 0 | 1,618,094 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | 0 | 47 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | 0 | 42 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | 0 | 12 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | 0 | 11 | |
| Total Net Lifetime Savings (kWh) | | | | 0 | 115,859 | 8,094,592 |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | 0 | 42 | 42 |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | 0 | 11 | 11 |

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



NON-RESIDENTIAL BUILDING OPTIMIZATION

2022-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

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



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



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



Spent **34%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|-------|----------|
| Total Program Cost (\$) | | | | | 9,639 | 9,639 |
| Total Program Participants (#) | | | | | 0 | |
| Total Gross Incremental Savings (kWh/yr) | | | | | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Total Net Lifetime Savings (kWh) | | | | | 0 | |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 0 | |



Case #: PUR-2020-00274

NON-RESIDENTIAL ENGAGEMENT

2021-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Building operator training



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 2022.



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



Spent **40%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|-------|---------|----------|
| Total Program Cost (\$) | | | | 8,109 | 599,509 | 607,618 |
| 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 | |

NON-RESIDENTIAL ENGAGEMENT

2022-Present

0 kWh/yr Average Net Savings Per Participant

Eligibility

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

Measures

- Building operator training



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 2022.



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



Spent **27%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 | Lifetime |
|--|------|------|------|------|--------|----------|
| Total Program Cost (\$) | | | | | 15,022 | 15,022 |
| Total Program Participants (#) | | | | | 0 | |
| Total Gross Incremental Savings (kWh/yr) | | | | | 0 | |
| Total Net Incremental Savings (kWh/yr) | | | | | 0 | |
| Peak Gross Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Gross Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Peak Net Inc. Winter Demand Reduction (kW) | | | | | 0 | |
| Total Net Lifetime Savings (kWh) | | | | | 0 | |
| Peak Net Lifetime Summer Demand Reduction (kW) | | | | | 0 | |
| Peak Net Lifetime Winter Demand Reduction (kW) | | | | | 0 | |



9. PEAK SHAVING

The Peak Shaving Programs are:

| DSM Phase | Sector | Acronym | Program | VA | NC |
|-----------|-----------------|---------|--|----|----|
| 1 | Residential | AC | Residential Smart Cooling Rewards | ✓ | ✓ |
| 2 | Non-Residential | DG | Non-Residential Distributed Generation | ✓ | |
| 8 | Residential | REVDR | Residential Electric Vehicle Rewards | ✓ | |
| 8 | Residential | RTDR | Residential Thermostat Rewards | ✓ | ✓ |

Figure 9-1 and Figure 9-2 show the cumulative count of **peak shaving program participation in the two states, for the active programs, at the county level, through December 31, 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, 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, Williamsburg City, and Virginia Beach City. In North Carolina, Dare, Halifax, and Currituck counties have the most energy savings.



Figure 9-1. 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

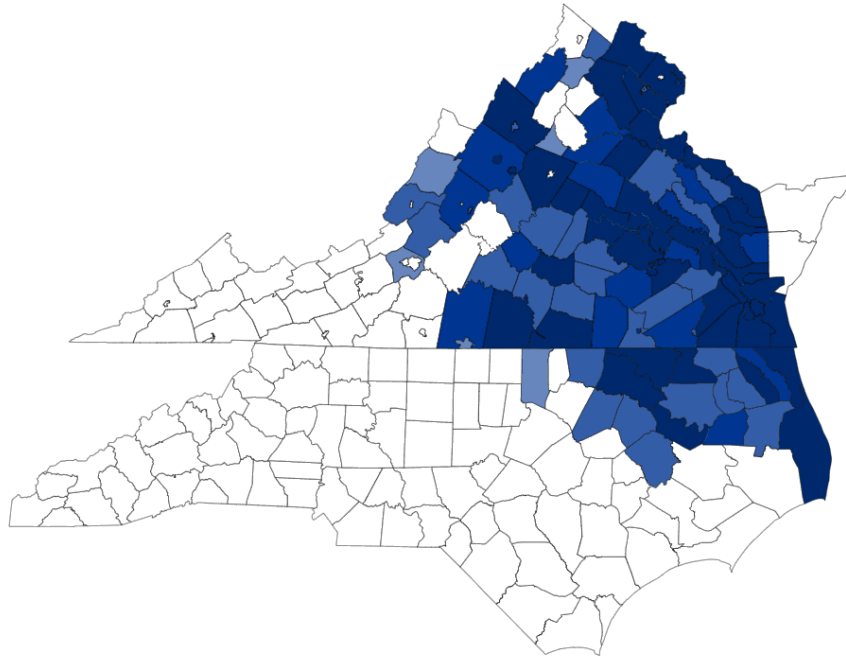
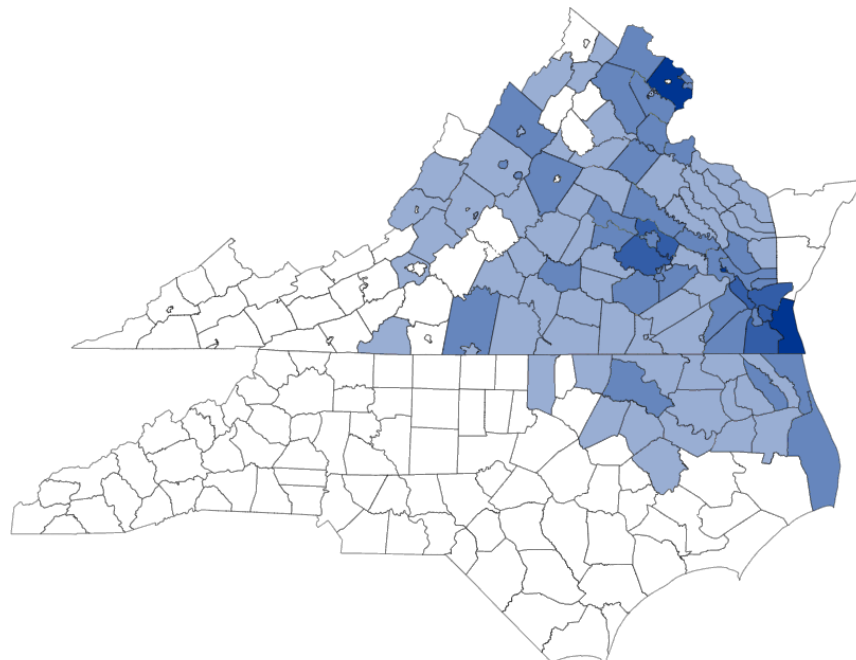


Figure 9-2. Virginia and North Carolina Peak Shaving Program Gross Annualized Energy Savings, by County

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



Case #: PUE-2009-00081

RESIDENTIAL SMART COOLING REWARDS

2010-2022
0.49 kW/participant demand reduction potential

Eligibility

- Residential customers living in an owner-occupied single-family home, townhouse, or condominium with central air conditioners or electric and dual fuel heat pumps are eligible to participate and receive a \$35 rebate by the December billing cycle
- A participant is defined as one customer account but a participant may have multiple AC switches

Events

- The AC Cycling event season spans June 1 through September 30 on non-holiday weekdays
- In 2022 the program called 23 events



54,568 participants as of December 31st, 2022 representing **95.6%** of the planned total participants



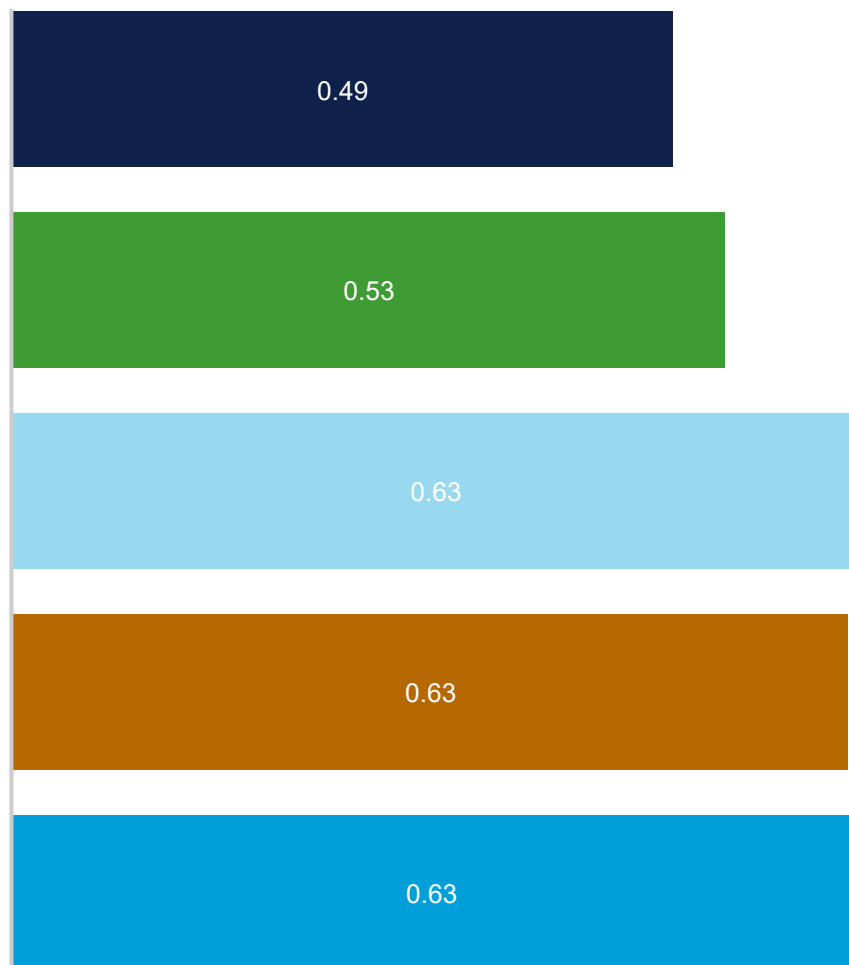
26,958 potential kW reduction which was **88.6%** of the planned total



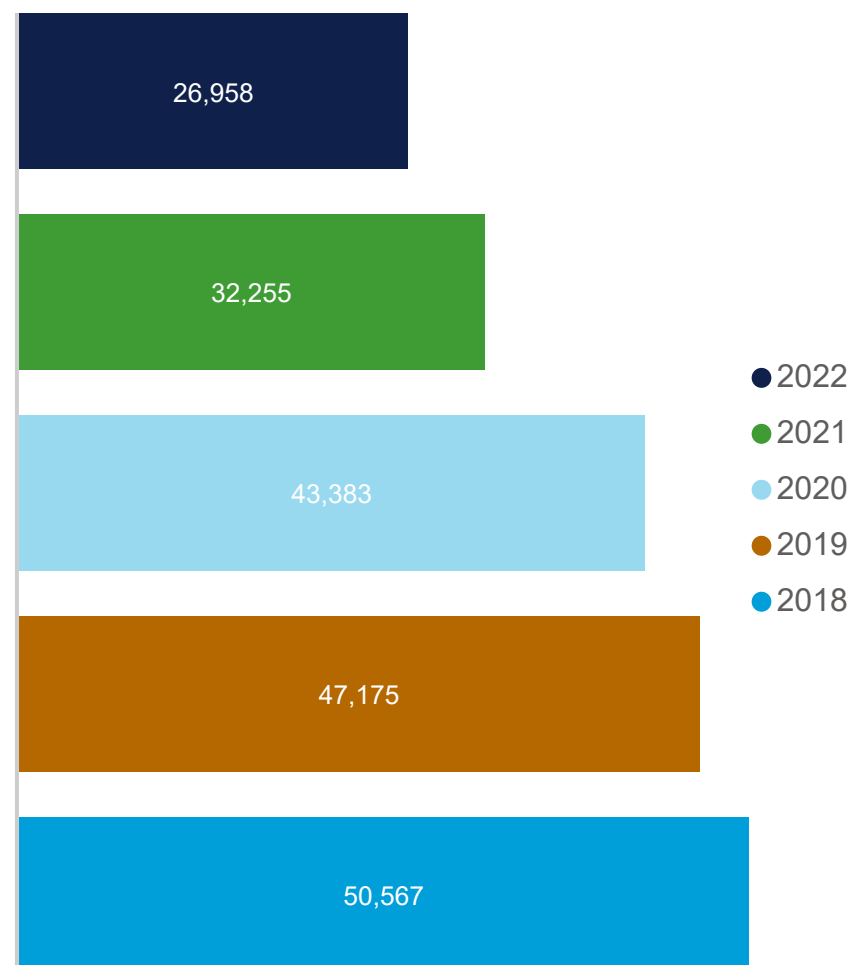
Spent **86%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|-----------|-----------|-----------|-----------|-----------|
| Total Program Cost (\$) | 6,034,693 | 5,781,716 | 5,287,678 | 4,898,125 | 4,513,936 |
| Total Program Participants (adjusted) | 80,627 | 75,386 | 68,463 | 60,477 | 54,568 |
| Demand Reduction at Peak Planning (kW/participant) | 0.63 | 0.63 | 0.63 | 0.53 | 0.49 |
| Dispatchable Peak Shaving Potential (kW) | 50,567 | 47,175 | 43,383 | 32,255 | 26,958 |

ESTIMATED PEAK SAVINGS POTENTIAL
(KW PER PARTICIPANT)



DISPATCHABLE PEAK SHAVING POTENTIAL
(KW)



RESIDENTIAL SMART COOLING REWARDS

2011-2022

0.49 kW/participant demand reduction potential

Eligibility

- Residential customers living in an owner-occupied single-family home, townhouse, or condominium with central air conditioners or electric and dual fuel heat pumps are eligible to participate and receive a \$35 rebate by the December billing cycle
- A participant is defined as one customer account but a participant may have multiple AC switches

Events

- The AC Cycling event season spans June 1 through September 30 on non-holiday weekdays
- In 2022 the program called 23 events



2,324 participants as of December 31st, 2022 representing 63.8% of the planned total



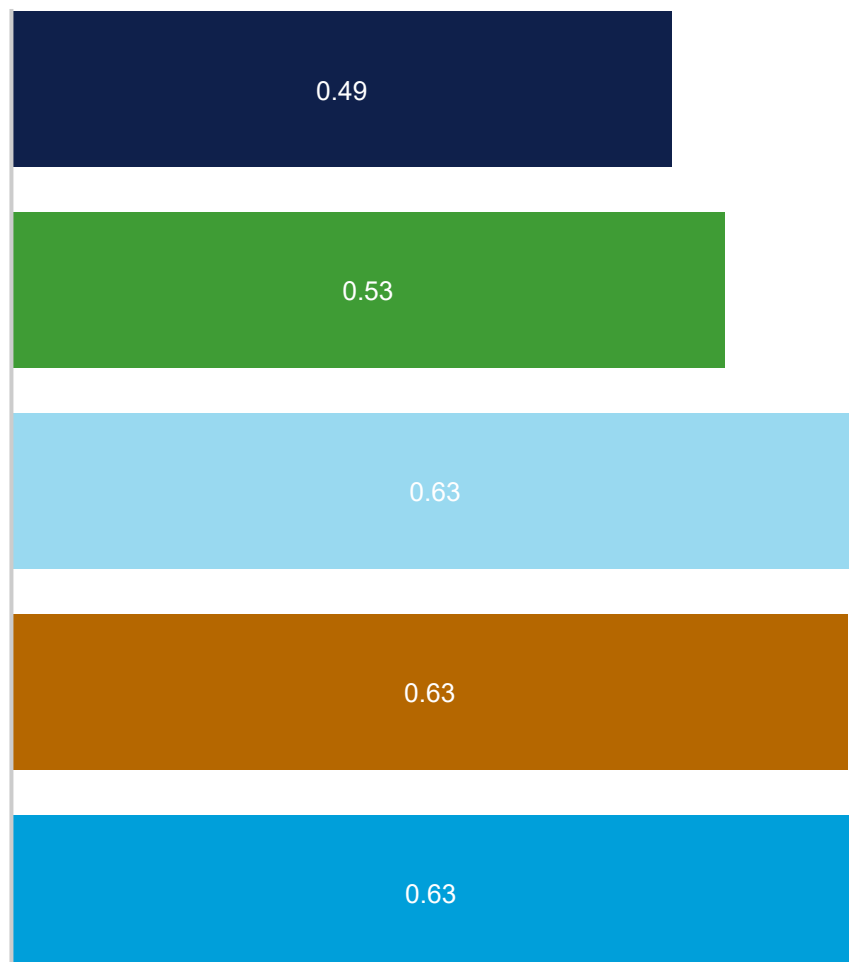
1,148 potential kW reduction was also 59.1% of the planned total potential



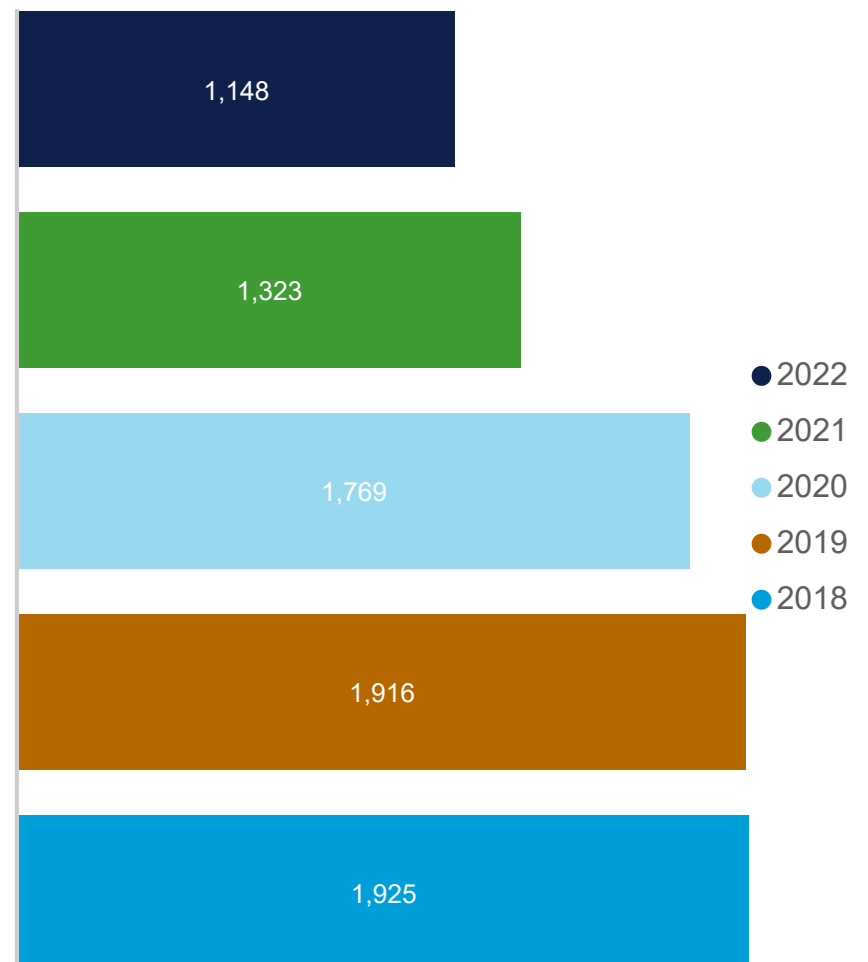
Spent 71% of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|---------|---------|---------|---------|---------|
| Total Program Cost (\$) | 239,609 | 244,525 | 223,870 | 198,710 | 199,147 |
| Total Program Participants (adjusted) | 3,068 | 3,061 | 2,790 | 2,480 | 2,324 |
| Demand Reduction at Peak Planning (kW/participant) | 0.63 | 0.63 | 0.63 | 0.53 | 0.49 |
| Dispatchable Peak Shaving Potential (kW) | 1,925 | 1,916 | 1,769 | 1,323 | 1,148 |

ESTIMATED PEAK SAVINGS POTENTIAL (KW PER PARTICIPANT)



DISPATCHABLE PEAK SHAVING POTENTIAL (KW)



Case #: PUE-2011-00093

NON-RESIDENTIAL DISTRIBUTED GENERATION

2012-PRESENT

5.88 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

Events

- When electric demand is high, DG sites operate backup generators to reduce load on the system
- 30 events were called in 2022; 28 were summer and 2 were winter



21 sites enrolled **5.88 MW**, achieving **82%** of planned participation



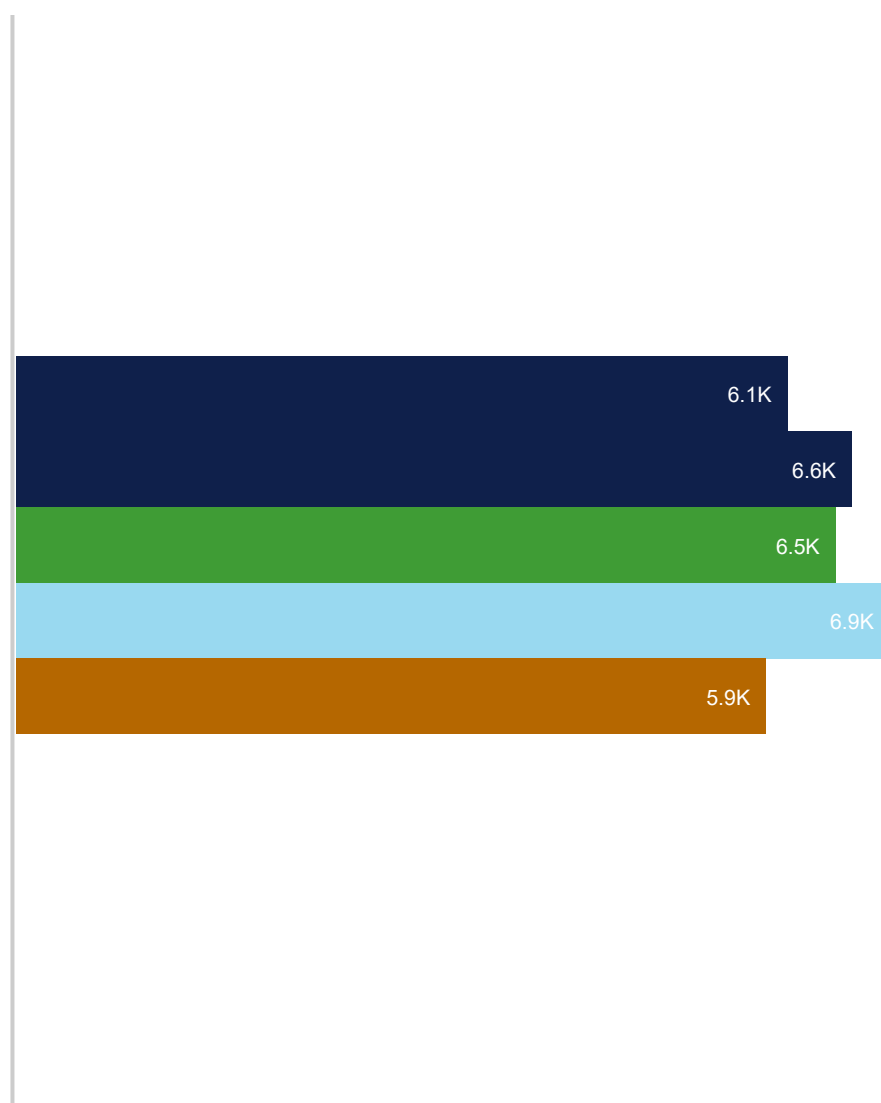
Achieved overall annual **realization rate of 104%**



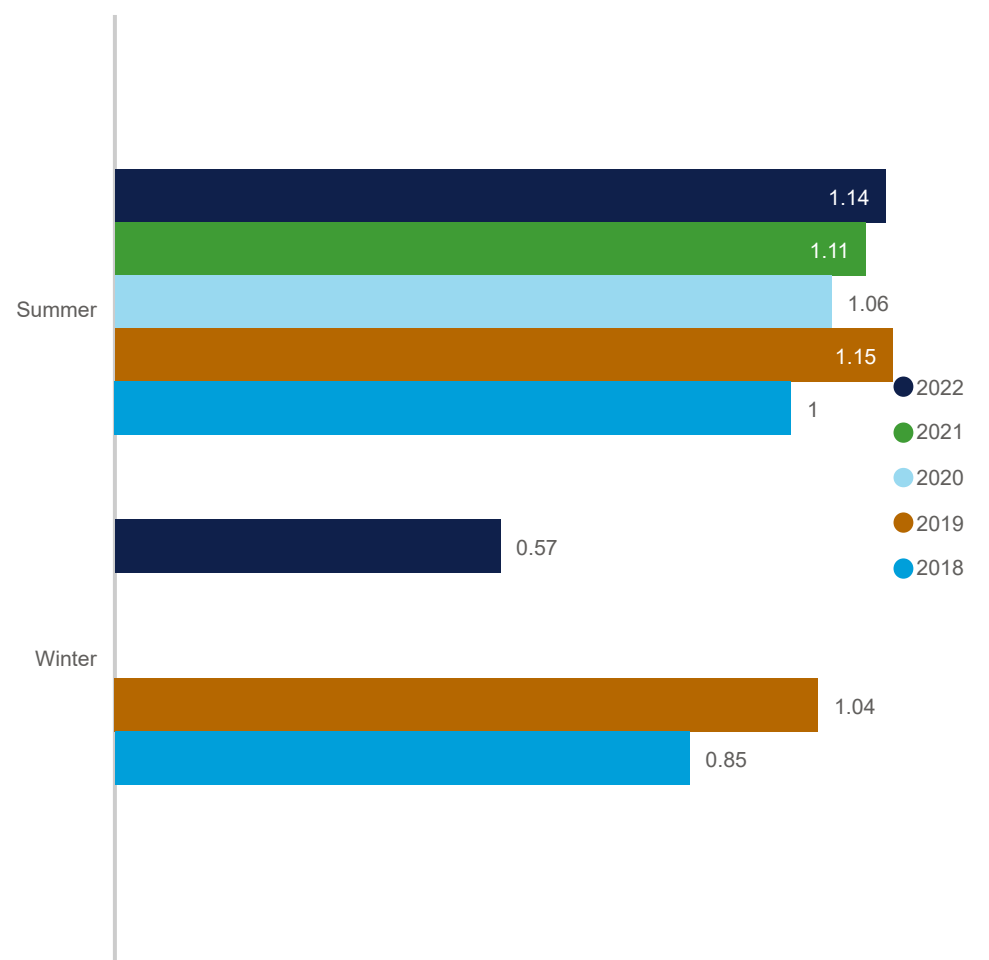
Spent **54%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|---------|---------|---------|---------|---------|
| Total Program Cost (\$) | 557,961 | 589,631 | 570,747 | 608,132 | 620,104 |
| Total Program Participants (adjusted) | 6.1 | 6.1 | 6.1 | 6.0 | 5.9 |
| Dispatchable Peak Shaving Potential (kW) | 5,946 | 6,927 | 6,498 | 6,627 | 6,115 |
| Realization Rate | 97% | 113% | 106% | 111% | 104% |

TOTAL DEMAND SAVINGS BY YEAR



REALIZATION RATE BY YEAR/SEASON
MEASURED GENERATION / DISPATCHED GENERATION





Case #: PUR-2019-00201

RESIDENTIAL ELECTRIC VEHICLE REWARDS

2020-PRESENT
0 kW demand reduction potential

Eligibility

- Customer must own an eligible level 2 EV charger

Measures

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



Enrolled **686** customers, **83%** of planned participation



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



Spent **57%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|------|---------|
| Total Program Cost (\$) | | | | | 178,959 |
| Total Program Participants (adjusted) | | | | | 686 |
| Demand Reduction at Peak Planning (kW/participant) | | | | | 0.00 |
| Dispatchable Peak Shaving Potential (kW) | | | | | 0 |

Case #: PUR-2019-00201

RESIDENTIAL SMART THERMOSTAT REWARDS

2020-PRESENT
0.94 kW/participant demand reduction potential

Eligibility

- Single-family detached, attached, and manufactured homes with a heat pump or a central air conditioning system
- Customers who are not enrolled in the Smart Cooling Rewards program
- Residential customers who have a qualifying smart thermostat

Measures

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



Enrolled **10,610** customers, **55%** of planned participation



Achieved **9,973.4 kW** of demand reduction, **32%** of planned potential



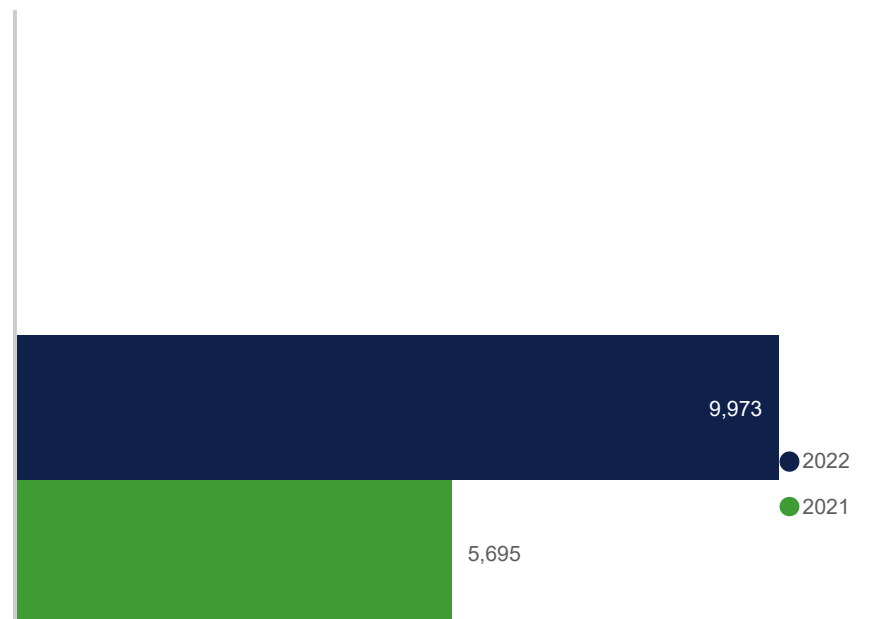
Spent **60%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|---------|-----------|
| Total Program Cost (\$) | | | | 724,644 | 1,143,292 |
| Total Program Participants (adjusted) | | | | 5,347 | 10,610 |
| Demand Reduction at Peak Planning (kW/participant) | | | | 1.07 | 0.94 |
| Dispatchable Peak Shaving Potential (kW) | | | | 5,695 | 9,973 |

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.

RESIDENTIAL SMART THERMOSTAT REWARDS

2020-PRESENT

0.94 kW/participant demand reduction potential

Eligibility

- Single-family detached, attached, and manufactured homes with a heat pump or a central air conditioning system
- Customers who are not enrolled in the Smart Cooling Rewards program
- Residential customers who have a qualifying smart thermostat

Measures

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



Enrolled **198** customers, **16%** of planned participation



Achieved **186.12 kW** of demand reduction, **7%** of planned potential



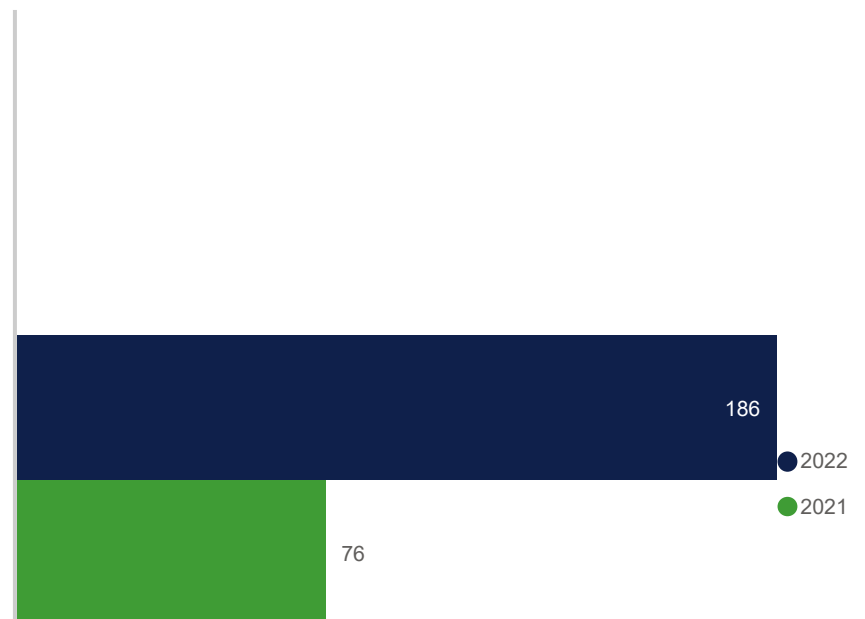
Spent **44%** of planned expenditures

| Category | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|--------|--------|
| Total Program Cost (\$) | | | | 18,350 | 44,643 |
| Total Program Participants (adjusted) | | | | 71 | 198 |
| Demand Reduction at Peak Planning (kW/participant) | | | | 1.07 | 0.94 |
| Dispatchable Peak Shaving Potential (kW) | | | | 76 | 186 |

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.



About DNV

DNV is a global quality assurance and risk management company. Driven by our purpose of safeguarding life, property and the environment, we enable our customers to advance the safety and sustainability of their business. We provide classification, technical assurance, software and independent expert advisory services to the maritime, oil & gas, power and renewables industries. We also provide certification, supply chain and data management services to customers across a wide range of industries. Operating in more than 100 countries, our experts are dedicated to helping customers make the world safer, smarter and greener.



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 GTSA proposed spending targets | SCC EM&V Order p.19 | Yes | Portfolio | Executive Summary |
| 3 | Projections towards GTSA 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 O. Program Performance Indicator Tables for Virginia 2010-2022 Appendix P. Program Performance Indicator Tables for North Carolina 2010-2022 |
| 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 O and P |
| 30 | Annual (net and gross) energy savings | VCEA | | Program | Appendices O and P |
| 31 | Capacity savings (net and gross) | VCEA | | Program | Appendices O and P |
| 32 | Lifecycle capacity savings (net and gross) | VCEA | | Program | Appendix Q. Incremental and Cumulative Participation, Gross, and Net Energy Savings, and Non-coincidental 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 2022 |
| 36 | Measure-level estimates of kWh, kW (net, gross) | SCC EM&V Rule 5-318-40 C | No | Measure | Appendices O and P |
| 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 - X programs. |
| 38 | Describe method by which measured data was collected to include at minimum: Sampling plan Statistical calculation upon which reported data is based when applicable 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 | Appendix D. Methodologies Appendix E. Evaluation, Measurement, and Verification Plans Appendix F. Dominion Energy Technical Reference Manual 2022 Appendix G. Residential Energy Efficient Products Marketplace Program Impact Evaluation Appendix H. Residential Home Energy Assessment Program Impact Analysis Appendix I. Residential Customer Engagement Program Impact Analysis Appendix J. Residential New Construction Program Baseline Study Appendix K. Non-Residential Lighting End-Use Baseline, Gross and Net Impact, and Persistence Study Appendix L. Residential Smart Reward Program Impact Evaluation Appendix M. Non-Residential Distributed Generation Program Impact Evaluation Appendix N. Residential Thermostat Reward Program Impact Evaluation |
| 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 O and P |
| 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 O and P |
| 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: 1. Nameplate efficiency rating; 2. Serial numbers; 3. Model numbers 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 DSM/EE 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 DSM/EE measure/programs | NCUC Rule R8-68(3)(v) | No | Measure, Program, Portfolio | Appendices O and P |
| 46 | Evaluate, measure, verify, and validate energy and peak demand savings estimated in program application | NCUC Rule R8-68(3)(ii) | No | Program, Portfolio | This instant report |
| 47 | Track cost savings to support annual cost recovery cases. | See NCUC Rule R8-69(f)(1)(ii)-(iii) | No | Program, Portfolio | N/A |
| 48 | Verify kWh sales reductions and kW savings to support recoverable net lost revenues. | NC DSM/EE Cost Recovery Mechanism, Item No. 59 (NCUC Docket No. E-22, Sub 464, May 2017) (NC Mechanism) | No | Program | Appendices F, O, P, and Q |
| 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 |
| 50 | Be based on industry-accepted protocols for the particular program or measure | NC Mechanism, Item. No. 45 | No | Measure, Program, Portfolio | Appendix D. Methodologies Appendix E. Evaluation, Measurement, and Verification Plans Appendix F. Dominion Energy Technical Reference Manual 2022 Appendix G. Residential Energy Efficient Products Marketplace Program Impact Evaluation Appendix H. Residential Home Energy Assessment Program Impact Analysis Appendix I. Residential Customer Engagement Program Impact Analysis Appendix J. Residential New Construction Program Baseline Study Appendix K. Non-Residential Lighting End-Use Baseline, Gross and Net Impact, and Persistence Study Appendix L. Residential Smart Reward Program Impact Evaluation Appendix M. Non-Residential Distributed Generation Program Impact Evaluation Appendix N. Residential Thermostat Reward Program Impact Evaluation |
| 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 [^] | No | Program | Appendices O and P |

* 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. Titled 56. 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/agency55/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>



Appendix B Detailed Evaluation, Measurement, and Verification Report for Virginia Electric and Power Company (Dominion Energy)

PUBLIC VERSION

Date: June 15, 2023

Prepared by DNV Energy Insights USA Inc. (DNV)





Table of contents

| | | |
|-------|--|-----|
| 1 | INTRODUCTION..... | 11 |
| 2 | ENERGY EFFICIENCY – RESIDENTIAL EFFICIENT PRODUCTS | 12 |
| 2.1 | Residential Efficient Products Marketplace Program – Virginia and North Carolina | 12 |
| 2.1.1 | Program description | 12 |
| 2.1.2 | Methods for the current reporting period | 13 |
| 2.1.3 | Assessment of program progress toward plan | 14 |
| 2.2 | Residential Electric Vehicle Energy Efficiency and Demand Response Program – Virginia | 31 |
| 2.2.1 | Program description | 31 |
| 2.2.2 | Methods for the current reporting period | 31 |
| 2.2.3 | Assessment of program progress toward plan | 32 |
| 2.3 | Residential Kits Program – Virginia and North Carolina | 37 |
| 2.3.1 | Program description | 37 |
| 2.3.2 | Methods for the current reporting period | 37 |
| 2.3.3 | Assessment of program progress toward plan | 38 |
| 2.4 | Residential Thermostat Purchase and WeatherSmart SM Program – Virginia and North Carolina | 47 |
| 2.4.1 | Program description | 47 |
| 2.4.2 | Methods for the current reporting period | 47 |
| 2.4.3 | Assessment of program progress toward plan | 48 |
| 2.5 | Residential Smart Home Program – Virginia and North Carolina | 59 |
| 2.5.1 | Program description | 59 |
| 2.5.2 | Methods for the current reporting period | 59 |
| 2.5.3 | Assessment of program progress toward plan | 60 |
| 2.6 | Residential Water Savings Program – Virginia and North Carolina | 69 |
| 2.6.1 | Program description | 69 |
| 2.6.2 | Methods for the current reporting period | 69 |
| 2.6.3 | Assessment of program progress toward plan | 70 |
| 3 | ENERGY EFFICIENCY – RESIDENTIAL ENERGY SERVICES | 78 |
| 3.1 | Residential Appliance Recycling Program – Virginia and North Carolina | 78 |
| 3.1.1 | Program description | 78 |
| 3.1.2 | Methods for the current reporting period | 78 |
| 3.1.3 | Assessment of program progress toward plan | 79 |
| 3.2 | Residential Home Energy Assessment Program – Virginia and North Carolina | 88 |
| 3.2.1 | Program description | 88 |
| 3.2.2 | Methods for the current reporting period | 89 |
| 3.2.3 | Assessment of program progress toward plan | 89 |
| 3.3 | Residential Customer Engagement Program – Virginia | 104 |
| 3.3.1 | Program description | 104 |
| 3.3.2 | Methods for the current reporting period | 104 |
| 3.3.3 | Assessment of program progress toward plan | 105 |
| 3.4 | Residential Manufactured Housing Program – Virginia | 111 |
| 3.4.1 | Program description | 111 |
| 3.4.2 | Methods for the current reporting period | 112 |
| 3.4.3 | Assessment of program progress toward plan | 112 |



| | | |
|-------|---|-----|
| 3.5 | Residential Multifamily Program – Virginia | 117 |
| 3.5.1 | Program description | 117 |
| 3.5.2 | Methods for the current reporting period | 118 |
| 3.5.3 | Assessment of program progress toward plan | 118 |
| 3.6 | Residential Home Retrofit Program – Virginia and North Carolina | 124 |
| 3.6.1 | Program description | 124 |
| 3.6.2 | Methods for the current reporting period | 125 |
| 3.6.3 | Assessment of program progress toward plan | 126 |
| 3.7 | Residential Virtual Energy Audit Program – Virginia and North Carolina | 132 |
| 3.7.1 | Program description | 132 |
| 3.7.2 | Methods for the current reporting period | 132 |
| 3.7.3 | Assessment of program progress toward plan | 133 |
| 4 | ENERGY EFFICIENCY – RESIDENTIAL NEW CONSTRUCTION | 141 |
| 4.1 | Residential New Construction Program – Virginia | 141 |
| 4.1.1 | Program description | 141 |
| 4.1.2 | Methods for the current reporting period | 141 |
| 4.1.3 | Assessment of program progress toward plan | 142 |
| 5 | ENERGY EFFICIENCY – INCOME AND AGE QUALIFIED..... | 147 |
| 5.1 | Residential HVAC Health and Safety Program – Virginia | 147 |
| 5.1.1 | Program description | 147 |
| 5.1.2 | Methods for the current reporting period | 148 |
| 5.1.3 | Assessment of program progress toward plan | 149 |
| 5.2 | Residential Income and Age Qualifying Energy Efficiency Program – Virginia and North Carolina | 155 |
| 5.2.1 | Program description | 155 |
| 5.2.2 | Methods for the current reporting period | 156 |
| 5.2.3 | Assessment of program progress toward plan | 156 |
| 5.3 | Income and Age Qualifying Solar Program – Virginia | 165 |
| 5.3.1 | Program description | 165 |
| 5.3.2 | Methods for the current reporting period | 165 |
| 5.3.3 | Assessment of program progress toward plan | 166 |
| 6 | ENERGY EFFICIENCY – NON-RESIDENTIAL GENERAL PRODUCTS & SERVICES..... | 170 |
| 6.1 | Non-Residential Prescriptive Program – Virginia and North Carolina | 170 |
| 6.1.1 | Program description | 170 |
| 6.1.2 | Methods for the current reporting period | 171 |
| 6.1.3 | Assessment of program progress toward plan | 171 |
| 6.2 | Non-Residential Prescriptive Enhanced Program – Virginia and North Carolina | 191 |
| 6.2.1 | Program description | 191 |
| 6.2.2 | Methods for the current reporting period | 192 |
| 6.2.3 | Assessment of program progress toward plan | 192 |
| 6.3 | Non-Residential Heating and Cooling Efficiency Program – Virginia and North Carolina | 201 |
| 6.3.1 | Program description | 201 |
| 6.3.2 | Methods for the current reporting period | 201 |
| 6.3.3 | Assessment of program progress toward plan | 202 |
| 6.4 | Non-Residential Lighting Systems & Controls Program – Virginia and North Carolina | 216 |
| 6.4.1 | Program description | 216 |



| | | |
|-------|---|-----|
| 6.4.2 | Methods for the current reporting period | 217 |
| 6.4.3 | Assessment of program progress toward plan | 217 |
| 6.5 | Non-Residential Small Manufacturing Program – Virginia and North Carolina | 236 |
| 6.5.1 | Program description | 236 |
| 6.5.2 | Methods for the current reporting period | 236 |
| 6.5.3 | Assessment of program progress toward plan | 237 |
| 6.6 | Non-Residential Window Film Program – Virginia and North Carolina | 244 |
| 6.6.1 | Program description | 244 |
| 6.6.2 | Methods for the current reporting period | 244 |
| 6.6.3 | Assessment of program progress toward plan | 245 |
| 6.7 | Non-Residential Midstream Energy Efficiency Products Program – Virginia | 257 |
| 6.7.1 | Program description | 257 |
| 6.7.2 | Methods for the current reporting period | 258 |
| 6.7.3 | Assessment of program progress toward plan | 258 |
| 7 | ENERGY EFFICIENCY – NON-RESIDENTIAL TARGETED SECTORS..... | 263 |
| 7.1 | Non-Residential Multifamily Program – Virginia | 263 |
| 7.1.1 | Program description | 263 |
| 7.1.2 | Methods for the current reporting period | 264 |
| 7.1.3 | Assessment of program progress toward plan | 264 |
| 7.2 | Non-Residential New Construction Program – Virginia and North Carolina | 269 |
| 7.2.1 | Program description | 269 |
| 7.2.2 | Methods for the current reporting period | 269 |
| 7.2.3 | Assessment of program progress toward plan | 270 |
| 7.3 | Non-Residential Small Business Improvement Enhanced Program – Virginia and North Carolina | 275 |
| 7.3.1 | Program description | 275 |
| 7.3.2 | Methods for the current reporting period | 276 |
| 7.3.3 | Assessment of program progress toward plan | 277 |
| 7.4 | Non-Residential Agriculture Program – Virginia | 295 |
| 7.4.1 | Program description | 295 |
| 7.4.2 | Methods for the current reporting period | 296 |
| 7.4.3 | Assessment of program progress toward plan | 296 |
| 8 | ENERGY EFFICIENCY – NON-RESIDENTIAL AUTOMATION & CONTROLS | 299 |
| 8.1 | Non-Residential Office Program – Virginia and North Carolina | 299 |
| 8.1.1 | Program description | 299 |
| 8.1.2 | Methods for the current reporting period | 300 |
| 8.1.3 | Assessment of program progress toward plan | 300 |
| 8.2 | Non-Residential Building Optimization Program – Virginia and North Carolina | 311 |
| 8.2.1 | Program description | 311 |
| 8.2.2 | Methods for the current reporting period | 311 |
| 8.2.3 | Assessment of program progress toward plan | 312 |
| 8.3 | Non-Residential Building Automation and Controls Program – Virginia and North Carolina | 319 |
| 8.3.1 | Program description | 319 |
| 8.3.2 | Methods for the current reporting period | 319 |
| 8.3.3 | Assessment of program progress toward plan | 320 |
| 8.4 | Non-Residential Engagement Program – Virginia and North Carolina | 325 |



| | | |
|-------|--|-----|
| 8.4.1 | Program description | 325 |
| 8.4.2 | Methods for the current reporting period | 326 |
| 8.4.3 | Assessment of program progress toward plan | 326 |
| 9 | PEAK SHAVING | 331 |
| 9.1 | Residential Smart Cooling Rewards – Virginia and North Carolina | 331 |
| 9.1.1 | Program description | 331 |
| 9.1.2 | Program performance | 331 |
| 9.1.3 | Assessment of program progress toward plan | 331 |
| 9.2 | Non-Residential Distributed Generation Program – Virginia | 335 |
| 9.2.1 | Program description | 335 |
| 9.2.2 | Methods for the current reporting period | 335 |
| 9.2.3 | Computation of demand reduction | 335 |
| 9.2.4 | Impact analysis of 2022 dispatch events | 335 |
| 9.2.5 | Assessment of program progress toward plan | 337 |
| 9.3 | Residential Electric Vehicle Rewards Program – Virginia | 339 |
| 9.3.1 | Program description | 339 |
| 9.3.2 | Methods for the current reporting period | 339 |
| 9.3.3 | Assessment of program progress toward plan | 340 |
| 9.4 | Residential Smart Thermostat Rewards Program – Virginia and North Carolina | 342 |
| 9.4.1 | Program description | 342 |
| 9.4.2 | Program performance | 342 |
| 9.4.3 | Impact analysis of 2022 events | 343 |
| 9.4.4 | Assessment of program progress toward plan | 343 |



List of figures

Figure 2-1. Virginia Residential Efficient Products Marketplace Program participation by lighting measure and year20

Figure 2-2. Virginia Residential Efficient Products Marketplace Program participation by appliance measure and year21

Figure 2-3. Virginia Residential Efficient Products Marketplace Program gross annualized energy savings by lighting measure and year (MWh/year)22

Figure 2-4. Virginia Residential Efficient Products Marketplace Program gross annualized energy savings by appliance measure and year (MWh/year)23

Figure 2-5. Virginia Residential Efficient Products Marketplace Program gross annualized energy savings (MWh/year) by lighting retailer and year24

Figure 2-6 Virginia Residential Efficient Products Marketplace Program gross annualized energy savings (MWh/year) by lighting retailer and year (continued)25

Figure 2-7. North Carolina Residential Efficient Products Marketplace Program participation by lighting measure and year .26

Figure 2-8. North Carolina Residential Efficient Products Marketplace Program participation by appliance measure and year27

Figure 2-9. North Carolina Residential Efficient Products Marketplace Program gross annualized energy savings by lighting measure and year (MWh/year)28

Figure 2-10. North Carolina Residential Efficient Products Marketplace Program gross annualized energy savings by appliance measure and year (MWh/year)29

Figure 2-11. North Carolina Residential Efficient Products Marketplace Program gross annualized energy savings (MWh/year) by lighting retailer and year30

Figure 2-12. Number of installed electric vehicle Level 2 chargers by model.....35

Figure 2-13. Residential Electric Vehicle Program gross annualized energy savings by charger model (kWh/year)36

Figure 2-14. Virginia Residential Kits program participation by measure and year42

Figure 2-15. Virginia Residential Kits program gross annualized energy savings by measure and year (MWh/year).....43

Figure 2-16. North Carolina Residential Kits program participation by measure and year45

Figure 2-17. North Carolina Residential Kits program gross annualized energy savings by measure and year (MWh/year) .46

Figure 2-18. Virginia Residential Smart Thermostat Purchase and WeatherSmartSM participation by measure and year54

Figure 2-19. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program gross annualized energy savings by measure and year (MWh/year).....55

Figure 2-20. North Carolina Residential Smart Thermostat Purchase and WeatherSmart participation by measure and year57

Figure 2-21. North Carolina Residential Smart Thermostat Purchase and WeatherSmart gross annualized energy savings by measure and year (MWh/year)58

Figure 2-22. Virginia Residential Smart Home Program participation by measure and year65

Figure 2-23. Virginia Residential Smart Home Program gross annualized energy savings by measure and year (MWh/year)66

Figure 2-24. North Carolina Residential Smart Home Program participation by measure and year67

Figure 2-25. North Carolina Residential Smart Home Program gross annualized energy savings by measure and year (MWh/year)68

Figure 2-26. Virginia Residential Water Savings Program participation by measure and year74

Figure 2-27. Virginia Residential Water Savings Program gross annualized energy savings by measure and year (MWh/year)75

Figure 2-28. Virginia Residential Water Savings Program participation by building type and year76

Figure 2-29. Virginia Residential Water Savings Program gross annualized energy savings by building type and year (MWh/year)77

Figure 3-1. Virginia Residential Appliance Recycling Program participation by measure and year84

Figure 3-2. Virginia Residential Appliance Recycling Program gross annualized energy savings by measure and year (MWh/year)85

Figure 3-3. North Carolina Residential Appliance Recycling Program participation by measure and year86

Figure 3-4. North Carolina Residential Appliance Recycling Program gross annualized energy savings by measure and year (MWh/year)87

Figure 3-5. Virginia Residential Home Energy Assessment Program participation by measure and year97

Figure 3-6. Virginia Residential Home Energy Assessment Program gross annualized energy savings by measure and year (MWh/year)98

Figure 3-7. Virginia Residential Home Energy Assessment Program net annualized energy savings by measure and year (MWh/year)99

Figure 3-8. North Carolina Residential Home Energy Assessment Program participation by measure and year 101

Figure 3-9. North Carolina Residential Home Energy Assessment Program gross annualized energy savings by measure and year (MWh/year) 102



Figure 3-10. North Carolina Residential Home Energy Assessment Program net annualized energy savings by measure and year 103

Figure 3-11. Residential Customer Engagement Program participation by home energy report delivery method 108

Figure 3-12. Virginia Residential Customer Engagement Program gross annualized energy savings by home energy report delivery method (MWh/year) 109

Figure 3-13. Virginia Residential Customer Engagement Program net annualized energy savings by home energy report delivery method (MWh/year) 110

Figure 3-14. Residential Manufactured Housing Program participation by measure and year 115

Figure 3-15. Virginia Residential Manufactured Housing Program gross annualized energy savings by measure and year (MWh/year) 116

Figure 3-16. Residential Multifamily Housing Program participation by measure and year 122

Figure 3-17. Virginia Residential Multifamily Housing Program gross annualized energy savings by measure and year (MWh/year) 123

Figure 3-18. Residential Home Retrofit Program participation by measure and year 130

Figure 3-19. Virginia Residential Home Retrofit Program gross annualized energy savings by measure and year (MWh/year) 131

Figure 3-20. Virginia Residential Virtual Audit Program participation by measure and year 137

Figure 3-21. Virginia Residential Virtual Audit Program gross annualized energy savings by measure and year 138

Figure 3-22. North Carolina Virtual Audit Program participation by measure and year 139

Figure 3-23. North Carolina Residential Virtual Audit Program gross annualized energy savings by measure and year 140

Figure 4-1. Virginia Residential New Construction Program participation by end use and year 145

Figure 4-2. Virginia Residential New Construction Program gross annualized energy savings end use and year (MWh/year) 146

Figure 5-1. Virginia Residential HVAC Health and Safety Program participation by measure and year 153

Figure 5-2. Virginia Residential HVAC Health and Safety Program gross annualized energy savings by measure and year (MWh/year) 154

Figure 5-3. Virginia Residential Income and Age Qualifying Energy Efficiency Program participation by measure and year 161

Figure 5-4. Virginia Residential Income and Age Qualifying Energy Efficiency Program gross annualized energy savings by measure and year (MWh/year) 162

Figure 5-5. North Carolina Residential Income and Age Qualifying Energy Efficiency Program participation by measure and year 163

Figure 5-6. North Carolina Residential Income and Age Qualifying Energy Efficiency Program gross annualized energy savings by measure and year (MWh/year) 164

Figure 5-7. Virginia Residential IAQ Solar Program participation by IAQ program 168

Figure 5-8. Virginia Residential IAQ Solar Program gross annualized savings (MWh/year) by IAQ program 169

Figure 6-1. Virginia Non-Residential Prescriptive Program participation by measure and year 178

Figure 6-2. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by measure and year 179

Figure 6-3. Virginia Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by measure and year 180

Figure 6-4. Virginia Non-Residential Prescriptive Program gross participation by building type and year 181

Figure 6-5. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by building type and year 182

Figure 6-6. Virginia Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by building type and year 183

Figure 6-7. North Carolina Non-Residential Prescriptive Program participation by measure 185

Figure 6-8. North Carolina Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by measure 186

Figure 6-9. North Carolina Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by measure 187

Figure 6-10. North Carolina Non-Residential Prescriptive Program gross participation by building type 188

Figure 6-11. North Carolina Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by building type 189

Figure 6-12. North Carolina Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by building type 190

Figure 6-13. Virginia Non-Residential Prescriptive Program participation by measure and year 197

Figure 6-14. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by measure and year 198

Figure 6-15. Virginia Non-Residential Prescriptive Program gross participation by building type and year 199



Figure 6-16. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by building type and year200

Figure 6-17. Virginia Non-Residential Heating and Cooling Efficiency Program participation by measure and year209

Figure 6-18. Virginia Non-Residential Heating and Cooling Efficiency Program gross annualized energy savings (MWh/year) by measure and year210

Figure 6-19. Virginia Non-Residential Heating and Cooling Efficiency (DSM Phase VII) Program participation by building type and year211

Figure 6-20. Virginia Non-Residential Heating and Cooling Efficiency gross annualized energy savings (MWh/year per participant) by building type and year.....212

Figure 6-21. North Carolina Non-Residential Heating and Cooling Efficiency participation by measure and year213

Figure 6-22. North Carolina Non-Residential Heating and Cooling Efficiency (DSM Phase VII) gross annualized energy savings (MWh/year) by measure and year.....214

Figure 6-23. North Carolina Non-Residential Heating and Cooling Efficiency (DSM Phase VII) gross annualized energy savings per participant (MWh/Year per participant) by building type and year.....215

Figure 6-24. Virginia Non-Residential Lighting Systems & Controls Program participation by measure and year223

Figure 6-25. Virginia Non-Residential Lighting Systems & Controls Program gross annualized energy savings by measure and year (MWh/year)224

Figure 6-26. Virginia Non-Residential Lighting Systems & Controls Program net annualized energy savings by measure and year (MWh/year)225

Figure 6-27. Virginia Non-Residential Lighting Systems & Controls Program participation by building type and year226

Figure 6-28. Virginia Non-Residential Lighting Systems & Controls Program gross annualized energy savings by building type and year (MWh/year).....227

Figure 6-29. Virginia Non-Residential Lighting Systems & Controls Program net annualized energy savings by building type and year (MWh/year)228

Figure 6-30. North Carolina Non-Residential Lighting Systems and Controls Program participation by measure and year .230

Figure 6-31. North Carolina Non-Residential Lighting Systems & Controls Program gross annualized energy savings (MWh/year) by measure and year.....231

Figure 6-32. North Carolina Non-Residential Lighting Systems & Controls Program net annualized energy savings (MWh/year) by measure and year.....232

Figure 6-33. North Carolina Non-Residential Lighting Systems & Controls Program participation by building type and year233

Figure 6-34. North Carolina Non-Residential Lighting Systems & Controls Program gross annualized energy savings by building type and year (MWh/year)234

Figure 6-35. North Carolina Non-Residential Lighting Systems & Controls Program net annualized energy savings by building type and year (MWh/year)235

Figure 6-36. Virginia Non-Residential Small Manufacturing Program participation by measure and year242

Figure 6-37. Virginia Non-Residential Small Manufacturing Program gross annualized energy savings (MWh/year) by measure and year243

Figure 6-38. Virginia Non-Residential Window Film Program participation by window orientation and year252

Figure 6-39. Virginia Non-Residential Window Film Program gross annualized energy savings by window orientation and year (MWh/year)253

Figure 6-40. Virginia Non-Residential Window Film Program participation by building type and year254

Figure 6-41. Virginia Non-Residential Window Film Program gross annualized energy savings by building type and year (MWh/year)255

Figure 6-42. North Carolina Non-Residential Window Film Program gross annualized energy savings by window orientation and year (MWh/year)256

Figure 6-43. Virginia Non-Residential Midstream Energy Efficiency Products Program participation by measure and year 261

Figure 6-44. Virginia Non-Residential Midstream Energy Efficiency Products Program gross annualized energy savings (MWh/year) by measure and year.....262

Figure 7-1. Non-Residential Multifamily Housing Program participation by measure and year267

Figure 7-2. Virginia Non-Residential Multifamily Housing Program gross annualized energy savings by measure and year (MWh/year)268

Figure 7-3. Virginia Small Business Improvement Enhanced Program participation by measure and year282

Figure 7-4. Virginia Non-Residential Small Business Improvement Enhanced Program gross annualized energy savings by measure and year (MWh/year)283

Figure 7-5. Virginia Non-Residential Small Business Improvement Enhanced Program net annualized energy savings by measure and year (MWh/year)284

Figure 7-6. Virginia Non-Residential Small Business Improvement Enhanced Program participation by building type and year285



Figure 7-7. Virginia Non-Residential Small Business Improvement Enhanced Program gross annualized energy savings by building type and year (MWh/year)286

Figure 7-8. Virginia Non-Residential Small Business Improvement Enhanced Program net annualized energy savings by building type and year (MWh/year)287

Figure 7-9. North Carolina Non-Residential Small Business Improvement Enhanced Program participation by measure and year289

Figure 7-10. North Carolina Non-Residential Small Business Improvement Enhanced Program gross annualized energy savings (MWh/year) by measure and year.....290

Figure 7-11. North Carolina Non-Residential Small Business Improvement Enhanced Program net annualized energy savings (MWh/year) by measure and year.....291

Figure 7-12. North Carolina Non-Residential Small Business Improvement Enhanced Program participation by building type and year292

Figure 7-13. North Carolina Non-Residential Small Business Improvement Enhanced Program gross annualized energy savings by building type and year (MWh/year)293

Figure 7-14. North Carolina Non-Residential Small Business Improvement Enhanced Program net annualized energy savings by building type and year (MWh/year)294

Figure 8-1. Virginia Non-Residential Office Program participation by measure and year.....305

Figure 8-2. Virginia Non-Residential Office Program gross annualized energy savings (MWh/year) by measure and year .306

Figure 8-3. Virginia Non-Residential Office Program participants by building type and year307

Figure 8-4. Virginia Non-Residential Office Program gross annualized energy savings (MWh/year) by building type and year308

Figure 8-5. North Carolina Non-Residential Office Program participation by measure and year309

Figure 8-6. North Carolina Non-Residential Office Program gross annualized energy savings (MWh/year) by measure and year310

Figure 8-7. Virginia Non-Residential Building Optimization Program participation by measure and year317

Figure 8-8. Virginia Non-Residential Building Optimization Program gross annualized energy savings (MWh/year) by measure and year318

Figure 9-1. Non-Residential DG annual and seasonal realization rates, 2014–2022336

List of tables

Table 2-1. Residential Efficient Products Marketplace Program planning assumptions..... 14

Table 2-2. Virginia Residential Efficient Products Marketplace Program performance indicators (2019-2022), 14

Table 2-3. North Carolina Residential Efficient Products Marketplace Program performance indicators (2020–2022). 17

Table 2-4. Residential Electric Vehicle (EE) Program planning assumptions system-wide..... 32

Table 2-5. Virginia Residential Electric Vehicle (EE) Program performance indicators (2020–2022). 32

Table 2-6. Residential Kits Program planning assumptions system-wide37

Table 2-7. Virginia Residential Kits program performance indicators (2020-2022)38

Table 2-8. North Carolina Residential Kits program performance indicators (2021-2022).40

Table 2-9. Residential Smart Thermostat Purchase Program planning assumptions system-wide48

Table 2-10. Residential Thermostat WeatherSmart Program planning assumptions system-wide48

Table 2-11. Virginia Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2020–2022).49

Table 2-12. North Carolina Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2021–2022).51

Table 2-13. Residential Smart Home Program planning assumptions system-wide60

Table 2-14. Virginia Residential Smart Home Program performance indicators (2021–2022).60

Table 2-15. North Carolina Residential Smart Home Program performance indicators (2022).62

Table 2-16. Residential Water Saving Program planning assumptions system-wide.....70

Table 2-17. Virginia Residential Water Savings Program performance indicators (2021–2022).70

Table 2-18. North Carolina Residential Water Savings Program performance indicators (2022).72

Table 3-1. Residential Appliance Recycling Program planning assumptions system-wide79

Table 3-2. Virginia Residential Appliance Recycling Program performance indicators (2019–2022).....79

Table 3-3. North Carolina Residential Appliance Recycling Program performance indicators (2020–2022).....81

Table 3-4. Residential Home Energy Assessment Program planning assumptions system-wide.....89

Table 3-5. Virginia Residential Home Energy Assessment Program performance indicators (2019–2022).90

Table 3-6. North Carolina Residential Home Energy Assessment Program Performance Indicators (2020–2022).93

Table 3-7. Residential Customer Engagement Program planning assumptions system-wide105

Table 3-8. Virginia Residential Customer Engagement Program Performance Indicators (2020–2022).105

Table 3-9. Residential Manufactured Housing Program planning assumptions system-wide112



Table 3-10. Virginia Residential Manufactured Housing Program performance indicators (2020–2022). 112

Table 3-11. Measures offered through Residential Multifamily Program..... 117

Table 3-12. Residential Multifamily Housing program planning assumptions system-wide..... 118

Table 3-13. Residential Multifamily Housing Program performance indicators (2020-2022). 119

Table 3-14. Measures offered through Residential Home Retrofit Program..... 124

Table 3-15. Residential Home Retrofit Program planning assumptions system-wide 125

Table 3-16. Virginia Residential Home Retrofit Program performance indicators (2020–2022). 126

Table 3-17. North Carolina Residential Home Retrofit Program performance indicators (2021-2022). 128

Table 3-18. Residential Virtual Audits program planning assumptions system-wide 133

Table 3-19. Virginia Residential Virtual Audit Program performance indicators (2022)..... 133

Table 3-20. North Carolina Residential Virtual Audit Program performance indicators (2022)..... 135

Table 4-1. Residential New Construction program planning assumptions system-wide 142

Table 4-2. Virginia Residential New Construction program performance indicators (2020–2022). 142

Table 5-1. Energy-saving products for Residential Health and Safety Program 147

Table 5-2. Residential HVAC Health and Safety Program planning assumptions system-wide 149

Table 5-3. Virginia Residential HVAC Health and Safety indicators (2020-2022). 149

Table 5-4. Energy-saving products for Residential Income and Age Qualifying Energy Efficiency Program 155

Table 5-5. Residential Income and Age Qualifying Energy Efficiency Program planning assumptions system-wide..... 156

Table 5-6. Virginia Residential Income and Age Qualifying Energy Efficiency Program performance indicators (2021–2022) 157

Table 5-7. North Carolina Residential Income and Age Qualifying Energy Efficiency Program performance indicators (2022) 159

Table 5-8. Income and Age Qualifying Solar Program planning assumptions, system-wide..... 165

Table 5-9. Virginia Residential Income and Age Qualifying Solar Program performance indicators (2021-2022)..... 166

Table 6-1. Measures offered through Non-Residential Prescriptive Program 170

Table 6-2. Virginia Non-Residential Prescriptive Program performance indicators (2017–2022). 172

Table 6-3. North Carolina Non-Residential Prescriptive Program performance indicators (2018–2022). 175

Table 6-4. Measures offered through Non-Residential Prescriptive Enhanced Program 191

Table 6-5. Non-Residential Prescriptive Enhanced Program planning assumptions 192

Table 6-6. Virginia Non-Residential Prescriptive Enhanced Program performance indicators (2021–2022). 193

Table 6-7. North Carolina Non-Residential Prescriptive Program performance indicators (2022) 195

Table 6-8. Non-Residential Heating and Cooling Efficiency Program planning assumptions system-wide..... 202

Table 6-9. Virginia Non-Residential Heating and Cooling Efficiency program performance indicators (2019–2022). 203

Table 6-10. North Carolina Non-Residential Heating and Cooling Efficiency Program performance indicators (2020–2022). 206

Table 6-11. Non-Residential Lighting Impact Evaluation, Baseline Study, and Persistence Study results 217

Table 6-12. Non-Residential Lighting Systems and Controls Program (Phase VII) planning assumptions system-wide 217

Table 6-13. Virginia Non-Residential Lighting Systems and Controls Program performance indicators (2019–2022)..... 218

Table 6-14. North Carolina Non-Residential Lighting Systems and Controls Program performance indicators (2020–2021) 220

Table 6-15. Non-Residential Small Manufacturing Program (Phase VII) planning assumptions system-wide 236

Table 6-16. Virginia Non-Residential Small Manufacturing Program performance indicators (2019–2022). 237

Table 6-17. North Carolina Non-Residential Small Manufacturing Program performance indicators (2020–2022). 239

Table 6-18. Non-Residential Window Film Program (Phase VII) planning assumptions system-wide 245

Table 6-19. Virginia Non-Residential Window Film Program performance indicators (2019–2022). 246

Table 6-20. North Carolina Non-Residential Window Film program performance indicators (2020-2022). 249

Table 6-21. Measures offered through Non-Residential Midstream Energy Efficiency Products Program 257

Table 6-22. Non-Residential Midstream Energy Efficiency Products Program planning assumptions system-wide 258

Table 6-23. Virginia Non-Residential Midstream Energy Efficiency Products Program performance indicators (2020- 2022). 258

Table 7-1. Measures offered through Non-Residential Multifamily Program 263

Table 7-2. Non-Residential Multifamily Housing Program planning assumptions system-wide 264

Table 7-3. Non-Residential Multifamily Housing Program performance indicators (2020-2022). 265

Table 7-4. Non-Residential New Construction Program (Phase VII) planning assumptions system-wide 270

Table 7-5. Virginia Non-Residential New Construction Program performance indicators (2020–2022). 270

Table 7-6. North Carolina Non-Residential New Construction Program performance indicators (2022)..... 272

Table 7-7. Measures offered through Small Business Improvement Program 276

Table 7-8. Non-Residential Small Business Improvement Enhanced Program (Phase VII) planning assumptions system-wide 277



Table 7-9. Virginia Non-Residential Small Business Improvement Enhanced Program performance indicators (2020–2022).
277

Table 7-10. North Carolina Non-Residential Small Business Improvement Enhanced Program performance indicators (2021–2022).
279

Table 7-11. Non-Residential Heating and Cooling Efficiency Program (Phase VII) planning assumptions system-wide296

Table 7-12. Virginia Non-Residential Agriculture Program performance indicators (2021–2022)297

Table 8-1. Non-Residential Office Program planning assumptions system-wide300

Table 8-2. Virginia Non-Residential Office Program performance indicators (2019–2022).300

Table 8-3. North Carolina Non-Residential Office Program performance indicators (2020–2022).303

Table 8-4. Non-Residential Building Optimization Program (Phase IX) Planning Assumptions System-wide.....312

Table 8-5. Virginia Non-Residential Building Optimization Program performance indicators (2021-2022)312

Table 8-6. North Carolina Non-Residential Building Optimization Program performance indicators (2022).....314

Table 8-7. Non-Residential Building Automation and Controls (Phase IX) planning assumptions system-wide320

Table 8-8. Virginia Non-Residential Building Automation and Controls (Phase IX) program performance indicators (2021–2022).320

Table 8-9. North Carolina Non-Residential Building Automation and Controls (Phase IX) program performance indicators (2022).....322

Table 8-10. Non-Residential Engagement (Phase IX) planning assumptions system-wide326

Table 8-11. Virginia Non-Residential Engagement Program performance indicators (2021–2022).326

Table 8-12. North Carolina Non-Residential Engagement (Phase IX) Program performance indicators (2022).328

Table 9-1. AC Cycling Program planning assumptions332

Table 9-2. Virginia Residential AC Cycling Program performance indicators (2010–2022).332

Table 9-3. North Carolina Residential AC Cycling Program performance indicators (2011–2022).333

Table 9-4. Disposition from cumulative and net participants, and peak shaving potential (kW) (through December 31, 2022)334

Table 32-5. DG Program performance for 2022 events by kW and month336

Table 32-6. Non-Residential DG Program planning assumptions337

Table 32-7. Virginia Non-Residential Distributed Generation Program performance indicators (2012–2022).337

Table 9-8. Residential Electric Vehicle Rewards Program planning assumptions system-wide.....339

Table 9-9. Virginia Residential Electric Vehicle Rewards Program performance indicator data (2020–2022)340

Table 9-10. Residential Smart Thermostat Rewards Program planning assumptions343

Table 9-11. Virginia Residential Smart Thermostat Rewards Program performance indicators (2020–2022)343

Table 9-12. North Carolina Residential Smart Thermostat Rewards Program performance indicators (2021–2022)344

Table 9-13. Disposition from cumulative and net participants, and peak shaving potential (kW) (through December 31, 2022)345



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 2022.



2 ENERGY EFFICIENCY – RESIDENTIAL EFFICIENT PRODUCTS

2.1 Residential Efficient Products Marketplace Program – Virginia and North Carolina

2.1.1 Program description

The Residential Efficient Products Marketplace Program provides rebates for the purchase of ENERGY STAR® qualified LED lamps and fixtures as well as appliances.



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 with permission from the homeowner to participate.

To be eligible for program rebates or discounts, products must be purchased from authorized providers, be ENERGY STAR qualified, and be installed at the service address of the account holder. The list of qualified products is located at <https://dominion.myrebateportal.com/>.

The program has four delivery channels: 1) lighting discounts taken at the point of sale; 2) appliance rebates processed through the Dominion Energy rebate portal. 3). coupons provided through the in-store rebate portal and redeemed at the point of purchase, and 4) the





Dominion Energy Marketplace²⁰ Customers who obtain rebates through the online rebate portal are required to provide a copy of the sales receipt. 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, 2019.²¹ 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, 2020.²² The point-of-sale lighting channel of this program and lighting sales through the Dominion Energy Marketplace ended in December 2022.

Over 15 million measures were rebated through the program in Virginia and North Carolina from 2019 to 2022. This represented 452.8 million gross annualized kWh savings and 41,651 gross coincident summer kW reduction. Lighting measures have comprised over 99% of measures rebated and 98% of savings in the program. In 2022, 5.25 million measures were rebated which was 180% of the planned participation goal. This represented 77.3 million net annualized kWh savings which was 92% of planned net savings.

DNV conducted a second impact evaluation of this program this year, reviewing program year 2021's performance. To verify the gross savings, the evaluation approach included:

1. Analyzing invoices from participating lighting suppliers to ensure that quantities listed in the invoices matched those in the program tracking data
2. Asking participating lighting suppliers to verify their lighting sales through the program after emailing them their sales total from the program tracking data
3. Asking participating homeowners to verify that their program-rebated appliances were installed within the Dominion Energy service territory.

The net savings estimation approach included:

1. Asking participating lighting suppliers to estimate how their product sales would be impacted if the program discounts were not available
2. Asking participating homeowners how the efficiency and timing of their appliance purchases might have changed if the program rebates were not available.

The detailed impact evaluation report can be found in Appendix G.

2.1.2 Methods for the current reporting period

The next section describes the program's progress toward planned participant, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the gross savings estimation approach included reviewing the tracking data and then estimating gross energy savings and demand reduction using the DE TRM calculations located in Appendix F. The net savings estimation approach follows the approach outlined in Appendix E, and detailed in the impact evaluation report in Appendix G.

Table 2-1 outlines Dominion Energy's initial program planning assumptions that were used to design the program.

²⁰ The Dominion rebate portal (<https://dominion.myrebateportal.com/>); The in-store rebate portal (<https://dominion.clearesult.com/>); The Dominion Energy Marketplace. (<https://www.poweredbyme.org/dominionenergy/>).

²¹ Virginia Residential Efficient Products Marketplace Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/va-ee-marketplace-terms-conditions.pdf>. Accessed March 21, 2023.

²² North Carolina Residential Efficient Products Marketplace Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/north-carolina---electric/save-energy/nc-ee-marketplace-terms-conditions.pdf>. Accessed March 21, 2023.



Table 2-1. Residential Efficient Products Marketplace Program planning assumptions

| Assumption | 2019 value | 2020–2024 |
|---|-----------------------|-----------------------|
| Target Market | Residential customers | Residential customers |
| NTG Factor | 70% | 70% |
| Measure Life (years) | 16.5 | 16.5 |
| Gross Average Annual Savings per Participant (kWh/year) | 32.55 | 37.68 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.0002 | 0.0005 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.0002 | 0.0005 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 22.79 | 26.38 |
| 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 per Participant (US\$) | \$1.56 | \$1.56 |

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 annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.1 shows the detailed program indicators by year and month, information about program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q shows the cumulative gross and net savings.

Participation in the point-of-sale lighting channel of the program began in August 2019 and participation in the appliances channel began in January 2020. Note that participation in this program is defined as the number of measures rebated and not the more typical number of customers served. The program exceeded its planned participation goal in Virginia during 2022. The number of measures rebated was 188% of the planned value.

Table 2-2. Virginia Residential Efficient Products Marketplace Program performance indicators (2019-2022)^{23,24}

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|---------------------------------|-----------|-----------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | | | |
| | Indirect Other (Administrative) | \$156,691 | \$421,278 | \$396,645 | \$415,532 | \$1,390,146 |

²³ The sum of the individual annual values may differ from the total value due to rounding.

²⁴ The 2019-2021 values in this table were revised from earlier EM&V reporting to not include the non-residential sales factor in the calculation of participants, energy savings (kWh/year), summer demand reduction (kW), and winter demand reduction (kW). These changes resulted in a 11% increase in participation, energy savings (kWh/year), summer demand reduction (kW), and winter demand reduction (kW) for 2019 through 2021. Participation increased from 8,686,737 to 9,646,671. The gross energy savings (kWh/year) increased from 264,607,020 kWh/year to 293,318,936 kWh/year. The summer demand reduction (kW) increased from 24,364 kW to 26,991 kW. The winter demand reduction (kW) increased from 21,143 kW to 23,472 kW.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|---|--------------|-------------|-------------|-------------|---------------------------|
| Total Costs (\$) | Total ²⁵ | \$4,636,049 | \$8,063,058 | \$8,459,198 | \$9,952,004 | \$31,110,309 |
| | Planned | \$6,860,889 | \$6,694,699 | \$7,086,043 | \$9,928,503 | \$30,570,134 |
| | Variance | -\$2,224,840 | \$1,368,359 | \$1,373,155 | \$23,501 | \$540,175 |
| | Annual % of Planned | 68% | 120% | 119% | 100% | 102% |
| Participants | Total (Gross) | 2,785,850 | 2,596,966 | 4,262,855 | 5,163,385 | 14,810,056 |
| | Planned (Gross) | 2,972,475 | 2,173,404 | 2,514,548 | 2,744,285 | 10,404,712 |
| | Variance | -186,625 | 423,562 | 1,749,307 | 2,419,100 | 4,405,344 |
| | Annual % of Planned (Gross) | 94% | 119% | 170% | 188% | 142% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 81,119,512 | 89,881,928 | 122,317,496 | 150,318,593 | 443,637,529 |
| | Realization Rate | 100% | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 81,119,512 | 89,881,928 | 122,317,496 | 150,318,593 | 443,637,529 |
| | Net-to-Gross Ratio ²⁶ | 70% | 67% | 49% | 50% | 57% |
| | Net-to-Gross Adjustment | -24,335,854 | -29,809,274 | -62,039,898 | -74,705,269 | -190,890,295 |
| | Net Adjusted Savings | 56,783,659 | 60,072,654 | 60,277,598 | 75,613,324 | 252,747,234 |
| | Planned Savings (Net) | 73,066,461 | 62,883,254 | 72,753,598 | 79,400,595 | 288,103,910 |
| | Annual Percent Toward Planned Savings (Net) | 77.7% | 95.5% | 82.9% | 95.2% | 87.7% |
| | Avg. Savings per Participant (Gross) | 29 | 35 | 29 | 29 | 30 |
| | Avg. Savings per Participant (Net) | 20 | 23 | 14 | 15 | 17 |
| Installed Summer Demand Reduction (kW) | Total Gross Demand Reduction | 7,421.2 | 8,295.1 | 11,274.4 | 13,820.6 | 40,811.2 |
| | Realization Rate | 100% | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | 7,421.2 | 8,295.1 | 11,274.4 | 13,820.6 | 40,811.2 |
| | Net-to-Gross Ratio ²⁷ | 70% | 67% | 49% | 50% | 57% |
| | Net-to-Gross | -2,226.4 | -2,763.5 | -5,725.2 | -6,874.7 | -17,589.8 |

²⁵ 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.

²⁶ 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), the implementation vendor has calculated that 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.

²⁷ Ibid.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|--|---|---------|---------|-----------|-----------|---------------------------|
| | Adjustment | | | | | |
| | Net Adjusted Demand Reduction | 5,194.9 | 5,531.6 | 5,549.2 | 6,945.9 | 23,221.5 |
| | Planned Demand (Net) | 520.2 | 806.3 | 932.9 | 1,018.1 | 3,277.5 |
| | Annual % Toward Planned Demand (Net) | 998.7% | 686.0% | 594.8% | 682.2% | 708.5% |
| | Avg. Peak Demand per Participant (Gross) | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 |
| | Avg. Demand per Participant (Net) | 0.002 | 0.002 | 0.001 | 0.001 | 0.002 |
| Installed Winter Demand Reduction (kW)²⁸ | Total Gross Demand Reduction | - | - | 23,471.9 | 29,038.4 | 52,510.3 |
| | Realization Rate | - | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | - | - | 23,471.9 | 29,038.4 | 52,510.3 |
| | Net-to-Gross Ratio ²⁹ | - | - | 50% | 50% | 50% |
| | Net-to-Gross Adjustment | - | - | -11,851.5 | -14,385.1 | -26,236.6 |
| | Net Adjusted Demand Reduction | - | - | 11,620.4 | 14,653.2 | 26,273.7 |
| | Planned Demand (Net) | - | - | 932.9 | 1,018.1 | 1,951.0 |
| | Annual % Toward Planned Demand (Net) | - | - | 1,245.6% | 1,439.2% | 1,346.7% |
| | Avg. Peak Demand per Participant (Gross) | - | - | 0.006 | 0.006 | 0.006 |
| | Avg. Demand per Participant (Net) | - | - | 0.003 | 0.003 | 0.003 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$0.06 | \$0.11 | \$0.10 | \$0.09 | \$0.09 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.002 | \$0.003 | \$0.003 | \$0.003 | \$0.003 |
| | Cml Annual \$Admin. per kW (Gross) | \$21 | \$37 | \$36 | \$34 | \$34 |
| | Cml Annual \$EM&V per Total Costs (%) | 1.9% | 2.2% | 2.9% | 2.5% | 2.5% |
| | Cml Annual \$Rebate per Participant (Gross) | \$1 | \$2 | \$2 | \$1 | \$1 |

²⁸ A dash (-) is used for 2019 and 2020 cells because winter demand reduction (kW) was calculated for REEC beginning in 2021.

²⁹ Ibid.



2.1.3.2 Key North Carolina program data

Table 2-3 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month appear in Appendix P.1 along with information on program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are presented in Appendix Q.

Participation in the point-of-sale lighting channel of the program began in January 2020 and participation in the appliances channel of the program began in March 2020. Note that participation in this program is defined as the number of measures installed.

Table 2-3. North Carolina Residential Efficient Products Marketplace Program performance indicators (2020–2022)³⁰

| Category | Item | 2020 | 2021 | 2022 | Program Total (2020–2022) |
|---|----------------------------------|------------|------------|------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$12,075 | \$18,123 | \$12,878 | \$43,076 |
| Total Costs (\$) | Total ³¹ | \$238,201 | \$386,515 | \$308,435 | \$933,152 |
| | Planned | \$425,185 | \$440,922 | \$633,498 | \$1,499,606 |
| | Variance | -\$186,984 | -\$54,407 | -\$325,063 | -\$566,454 |
| | Annual % of Planned | 56% | 88% | 49% | 62% |
| Participants | Total (Gross) | 86,493 | 116,668 | 84,301 | 287,462 |
| | Planned (Gross) | 138,728 | 160,503 | 175,167 | 474,398 |
| | Variance | -52,235 | -43,835 | -90,866 | -186,936 |
| | Annual % of Planned (Gross) | 62% | 73% | 48% | 61% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 2,707,492 | 3,582,113 | 2,828,480 | 9,118,085 |
| | Realization Rate | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 2,707,492 | 3,582,113 | 2,828,480 | 9,118,085 |
| | Net-to-Gross Ratio ³² | 66% | 47% | 47% | 53% |
| | Net-to-Gross Adjustment | -911,011 | -1,906,060 | -1,501,251 | -4,318,322 |
| | Net Adjusted Savings | 1,796,481 | 1,676,053 | 1,327,228 | 4,799,762 |
| | Planned Savings (Net) | 4,013,827 | 4,643,845 | 5,068,119 | 13,725,791 |
| Annual Percent Toward Planned Savings (Net) | 44.8% | 36.1% | 26.2% | 35.0% | |

³⁰ The sum of the individual annual values may differ from the total value due to rounding.

³¹ 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.

³² 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), the implementation vendor has calculated that 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program Total (2020–2022) |
|--|---|---------|---------|---------|---------------------------|
| | Avg. Savings per Participant (Gross) | 31 | 31 | 34 | 32 |
| | Avg. Savings per Participant (Net) | 21 | 14 | 16 | 17 |
| Installed Summer Demand Reduction (kW) | Total Gross Demand Reduction | 249.1 | 330.2 | 260.7 | 840.0 |
| | Realization Rate | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | 249.1 | 330.2 | 260.7 | 840.0 |
| | Net-to-Gross Ratio ³³ | 66% | 47% | 47% | 53% |
| | Net-to-Gross Adjustment | -84.1 | -175.9 | -138.5 | -398.5 |
| | Net Adjusted Demand Reduction | 165.0 | 154.3 | 122.2 | 441.5 |
| | Planned Demand (Net) | 51.5 | 59.5 | 65.0 | 176 |
| | Annual % Toward Planned Demand (Net) | 320.6% | 259.1% | 188.0% | 250.8% |
| | Avg. Peak Demand per Participant (Gross) | 0.003 | 0.003 | 0.003 | 0.003 |
| | Avg. Demand per Participant (Net) | 0.002 | 0.001 | 0.001 | 0.002 |
| Installed Winter Demand Reduction (kW)³⁴ | Total Gross Demand Reduction | - | 686.2 | 542.9 | 1,229.1 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | - | 686.2 | 542.9 | 1,229.1 |
| | Net-to-Gross Ratio ³⁵ | - | 47% | 47% | 47% |
| | Net-to-Gross Adjustment | - | -363.6 | -287.1 | -650.6 |
| | Net Adjusted Demand Reduction | - | 322.6 | 255.9 | 578.5 |
| | Planned Demand (Net) | - | 59.5 | 65.0 | 124.5 |
| | Annual % Toward Planned Demand (Net) | - | 541.8% | 393.7% | 464.5% |
| | Avg. Peak Demand per Participant (Gross) | - | 0.006 | 0.006 | 0.006 |
| | Avg. Demand per Participant (Net) | - | 0.003 | 0.003 | 0.003 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$0.14 | \$0.15 | \$0.15 | \$0.15 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.004 | \$0.005 | \$0.005 | \$0.005 |
| | Cml Annual \$Admin. per kW (Gross) | \$48 | \$52 | \$51 | \$51 |

³³ Ibid.

³⁴ A dash (-) is used for 2020 cells because winter demand reduction (kW) was calculated for REEC beginning in 2021.

³⁵ Ibid.



| Category | Item | 2020 | 2021 | 2022 | Program Total (2020–2022) |
|----------|---|------|------|------|---------------------------|
| | Cml Annual \$EM&V per Total Costs (%) | 4.1% | 4.8% | 4.4% | 4.4% |
| | Cml Annual \$Rebate per Participant (Gross) | \$2 | \$2 | \$2 | \$2 |

2.1.3.3 Additional Virginia program data

Figure 2-1 through Figure 2-6 show Virginia participants and gross annualized energy savings by measure, retailer, and year. Lighting represented 99.6% of measures rebated and 98% of savings. Approximately 5.1 million lighting units were sold through the program in Virginia in 2022. A-Line lighting bulbs represented 60% of lighting units sold and 54% of lighting savings in 2022. Reflectors (20% of units and 25% of savings) and Specialty bulbs (19% of both units and savings) were the next largest lighting measures in terms of savings and units. Lighting units sold through the program increased by 21% and savings increased by 24% from 2021 to 2022. The increases in units sold and savings were split between A-Lines and Reflectors lighting measures.

More than 19,000 appliances were rebated through the program in Virginia during 2022. Clothes washers and dryers were the most popular accounting for 49% of the total appliances in the program and 70% of the program's total appliance savings. Other detailed program participation and savings information at the measure level appear in Appendix O.1.



Figure 2-1. Virginia Residential Efficient Products Marketplace Program participation by lighting measure and year

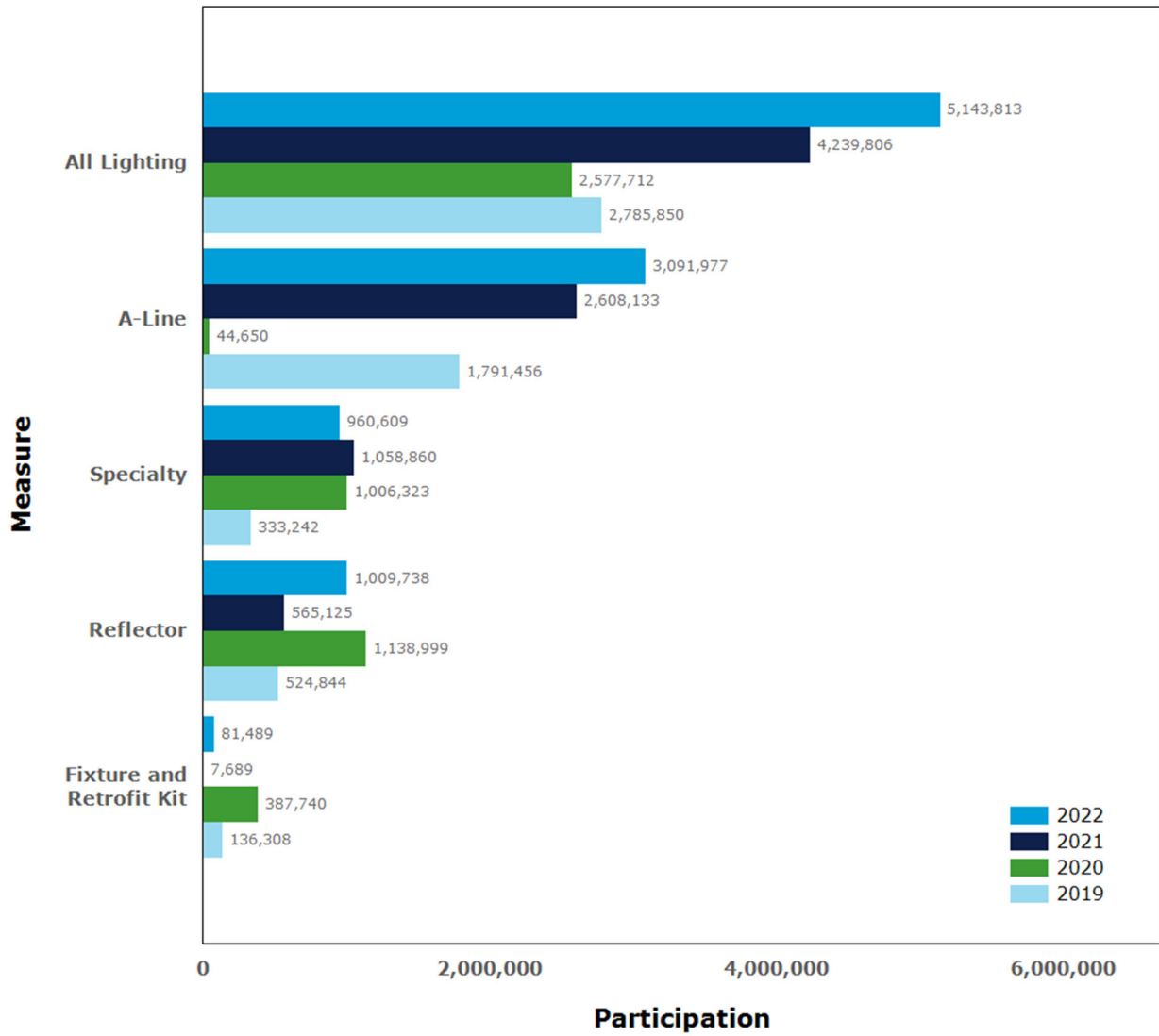




Figure 2-2. Virginia Residential Efficient Products Marketplace Program participation by appliance measure and year

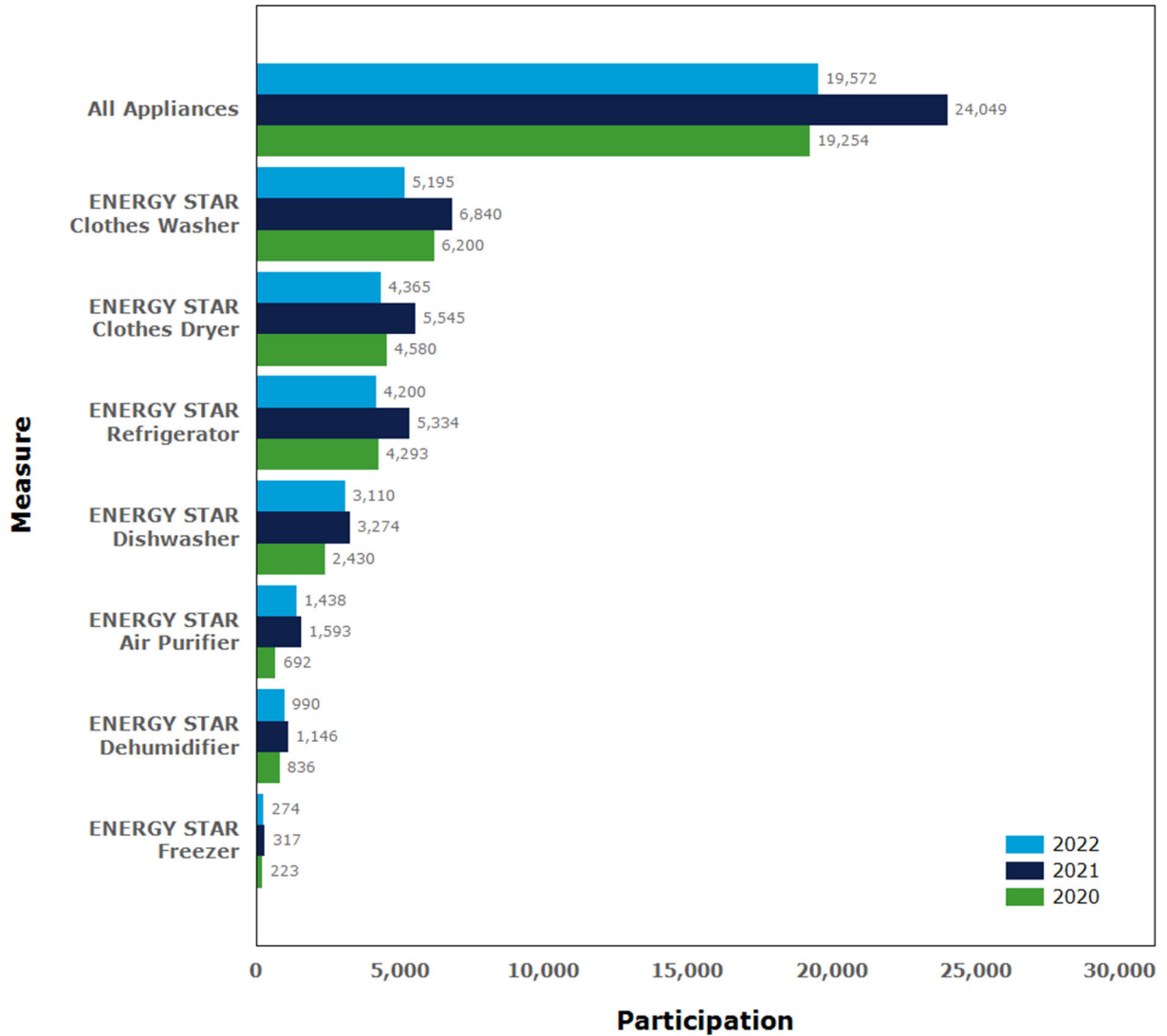




Figure 2-3. Virginia Residential Efficient Products Marketplace Program gross annualized energy savings by lighting measure and year (MWh/year)

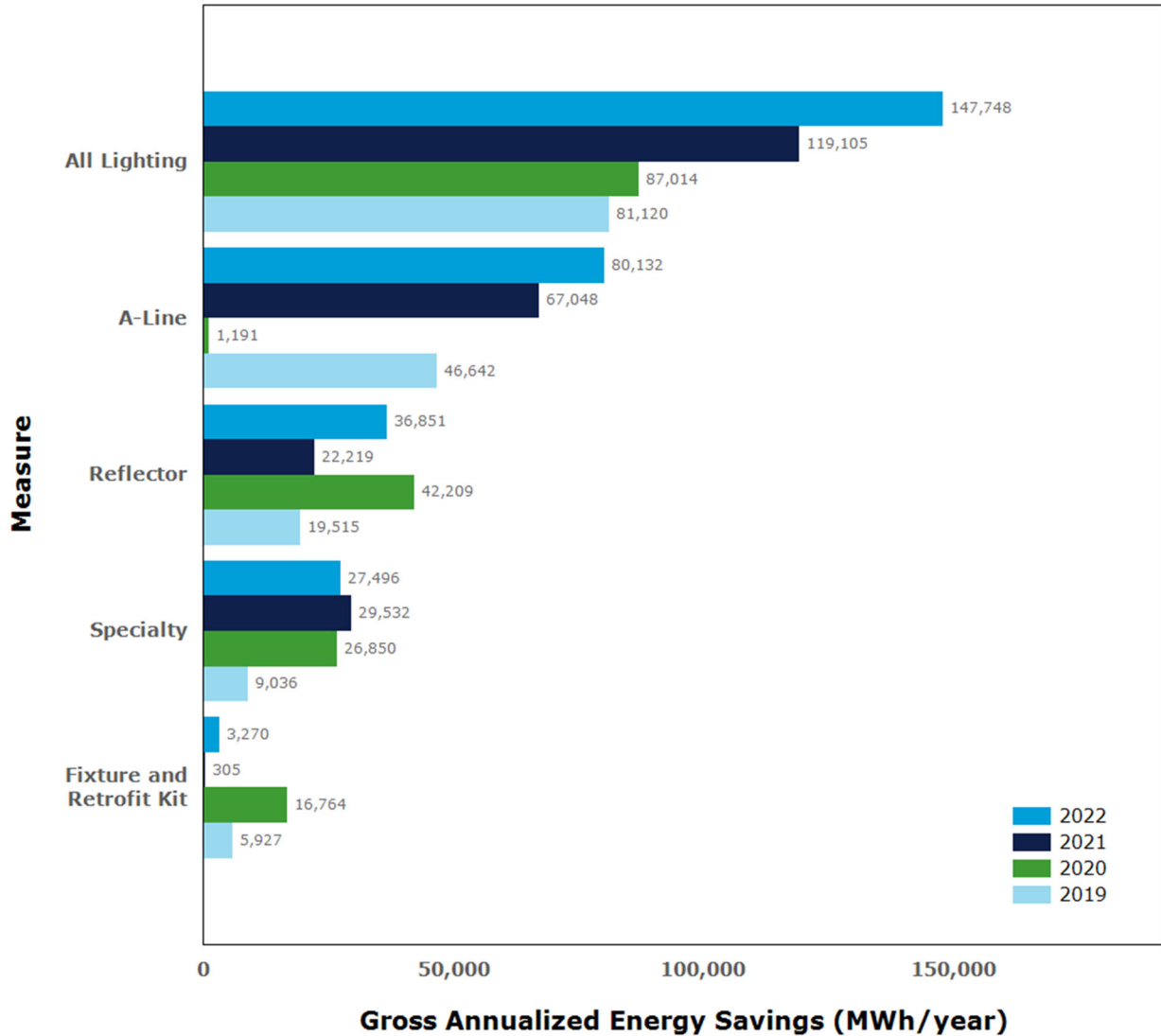
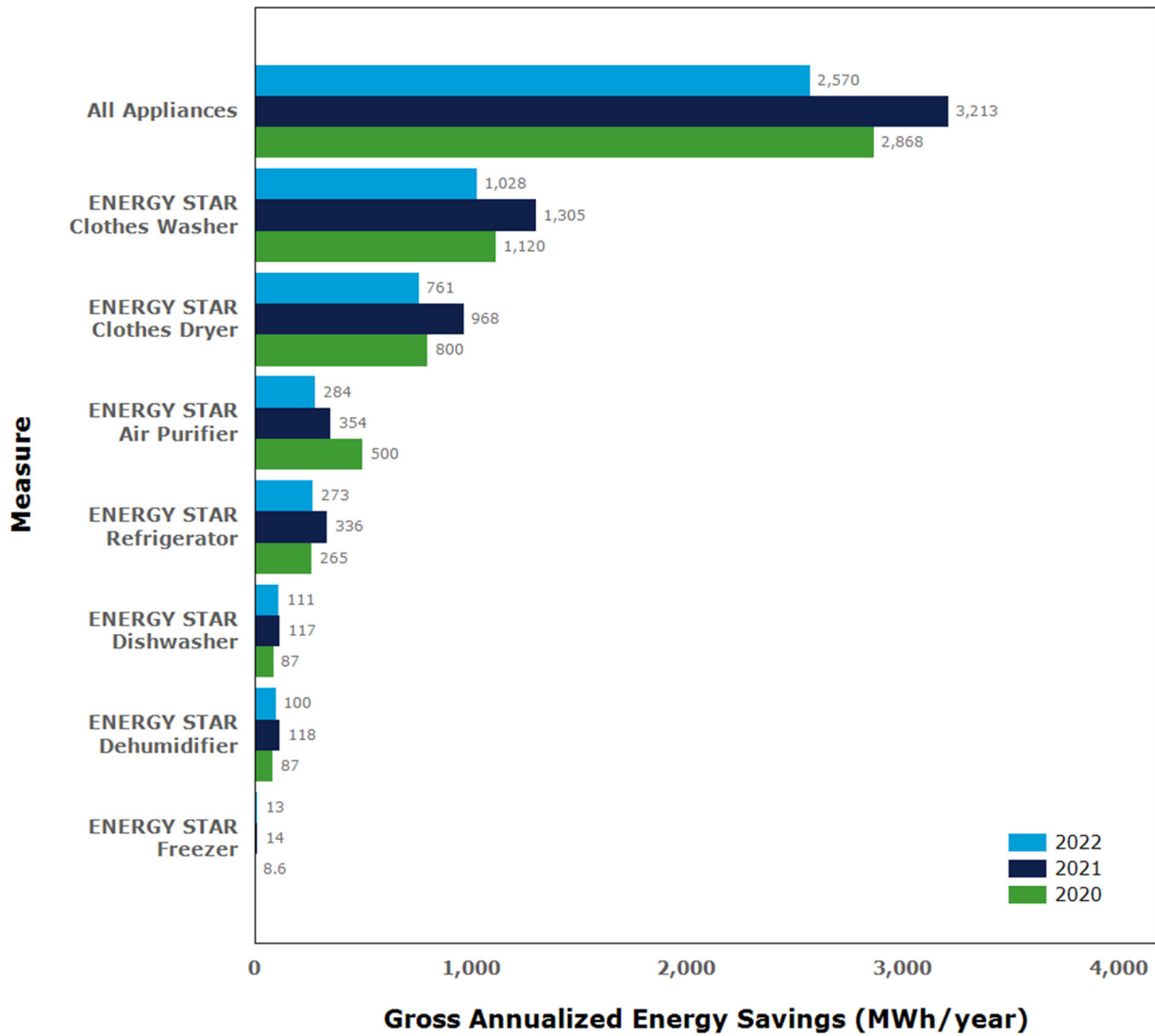




Figure 2-4. Virginia Residential Efficient Products Marketplace Program gross annualized energy savings by appliance measure and year (MWh/year)



In 2022, customers purchased incentivized LED lamps and fixtures from 16 retailers (Figure 2-5). Home Depot, Costco, Walmart, and Lowes accounted for approximately 78% of the lighting savings in 2022. Over 550,000 lighting units were distributed at community events in 2022 which represented 16,357 MWh in savings.



Figure 2-5. Virginia Residential Efficient Products Marketplace Program gross annualized energy savings (MWh/year) by lighting retailer and year

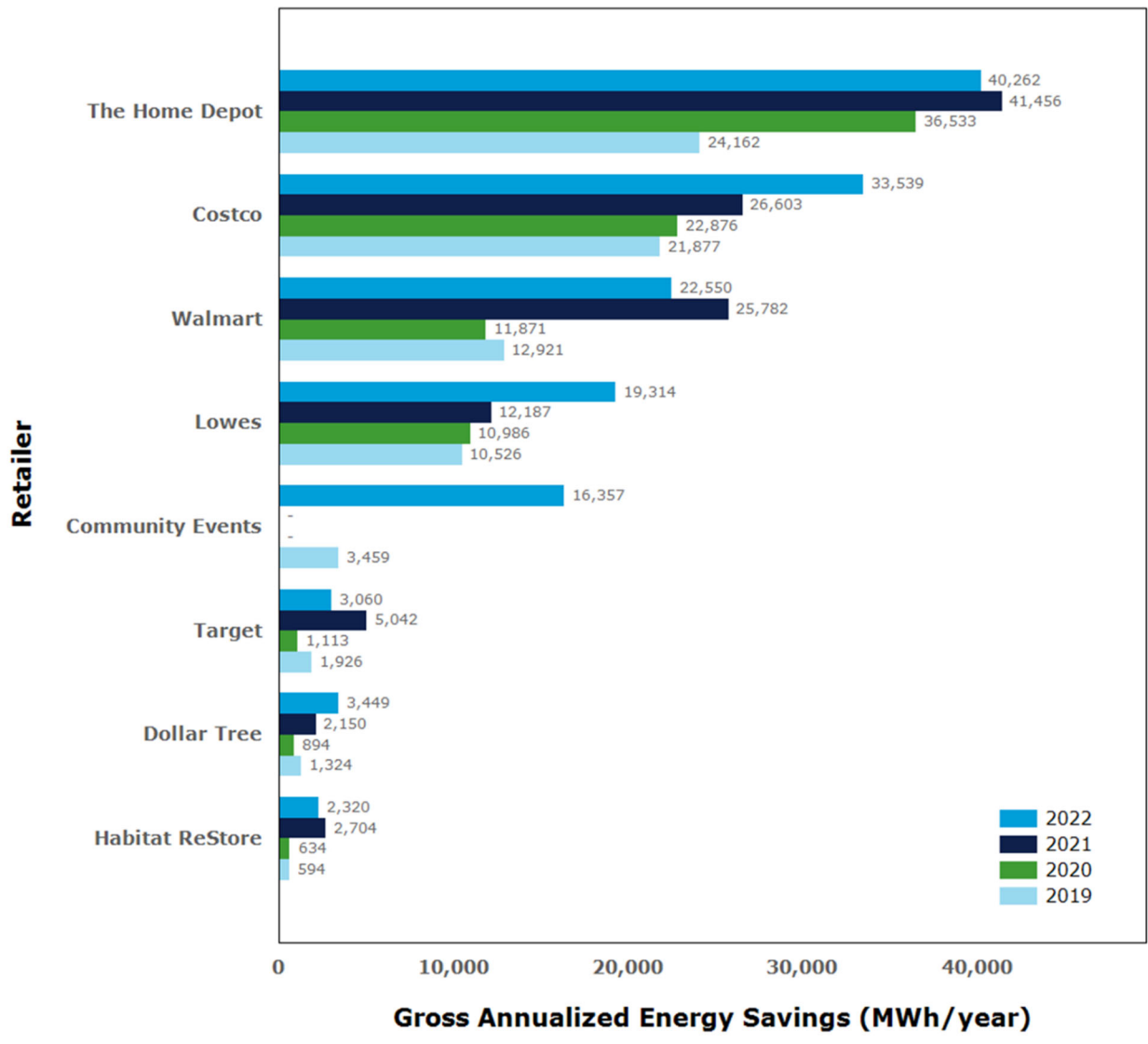
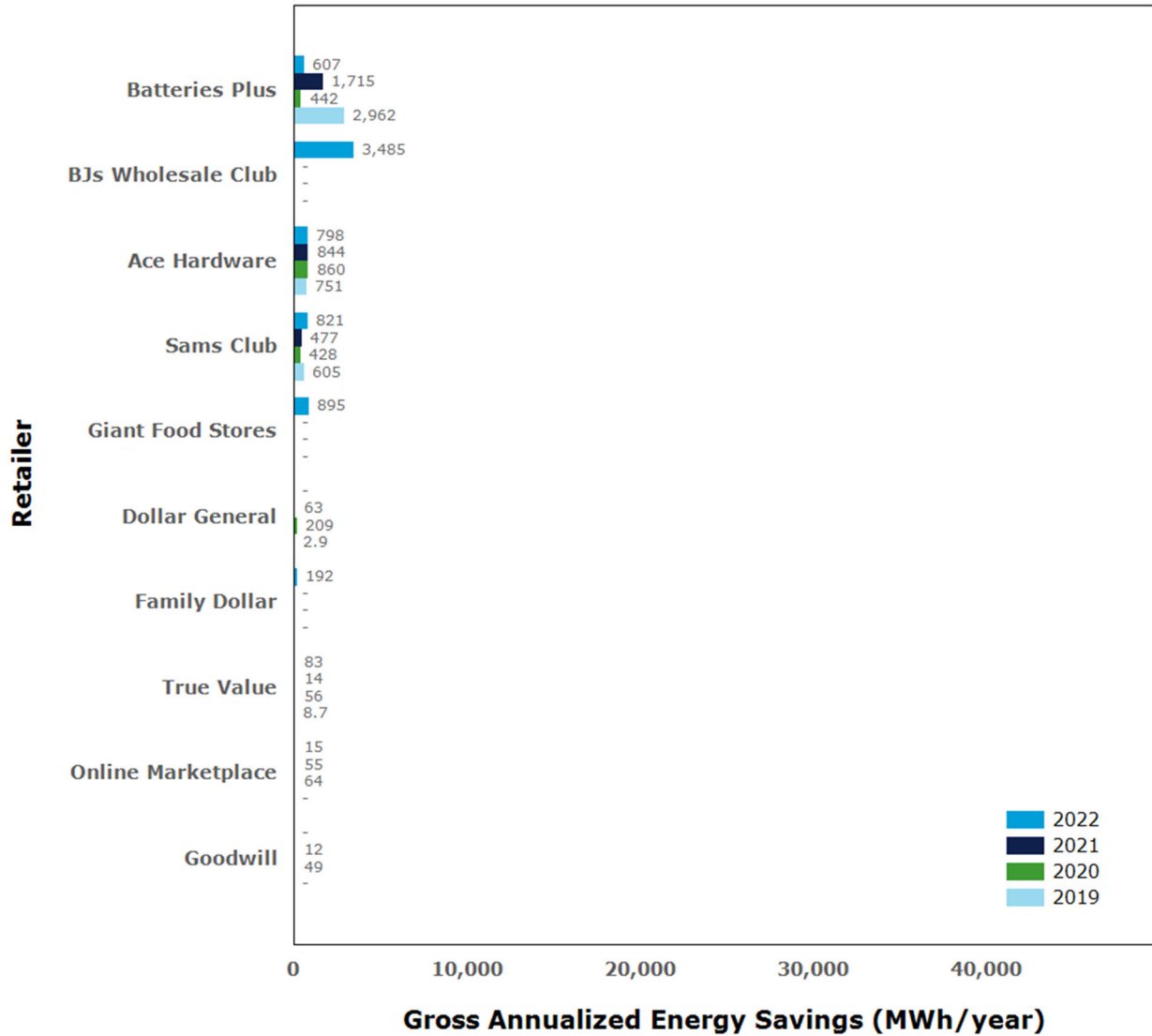




Figure 2-6 Virginia Residential Efficient Products Marketplace Program gross annualized energy savings (MWh/year) by lighting retailer and year (continued)





2.1.3.4 Additional North Carolina program data

Figure 2-7 through Figure 2-11 show the North Carolina participants and gross annualized energy savings by measure, retailer, and year. Lighting represented 99% of the measures installed in the program and 98% of savings. Specialty bulbs made up 55% of lighting units sold and 47% of lighting savings through the program in North Carolina for 2022. Reflectors (24.5% of lighting units and 27% of savings) and fixtures and retrofit kits (18% of units and 22% of savings) were the next largest lighting types. Other detailed program participation and savings information at the measure level appear in Appendix P.1.

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

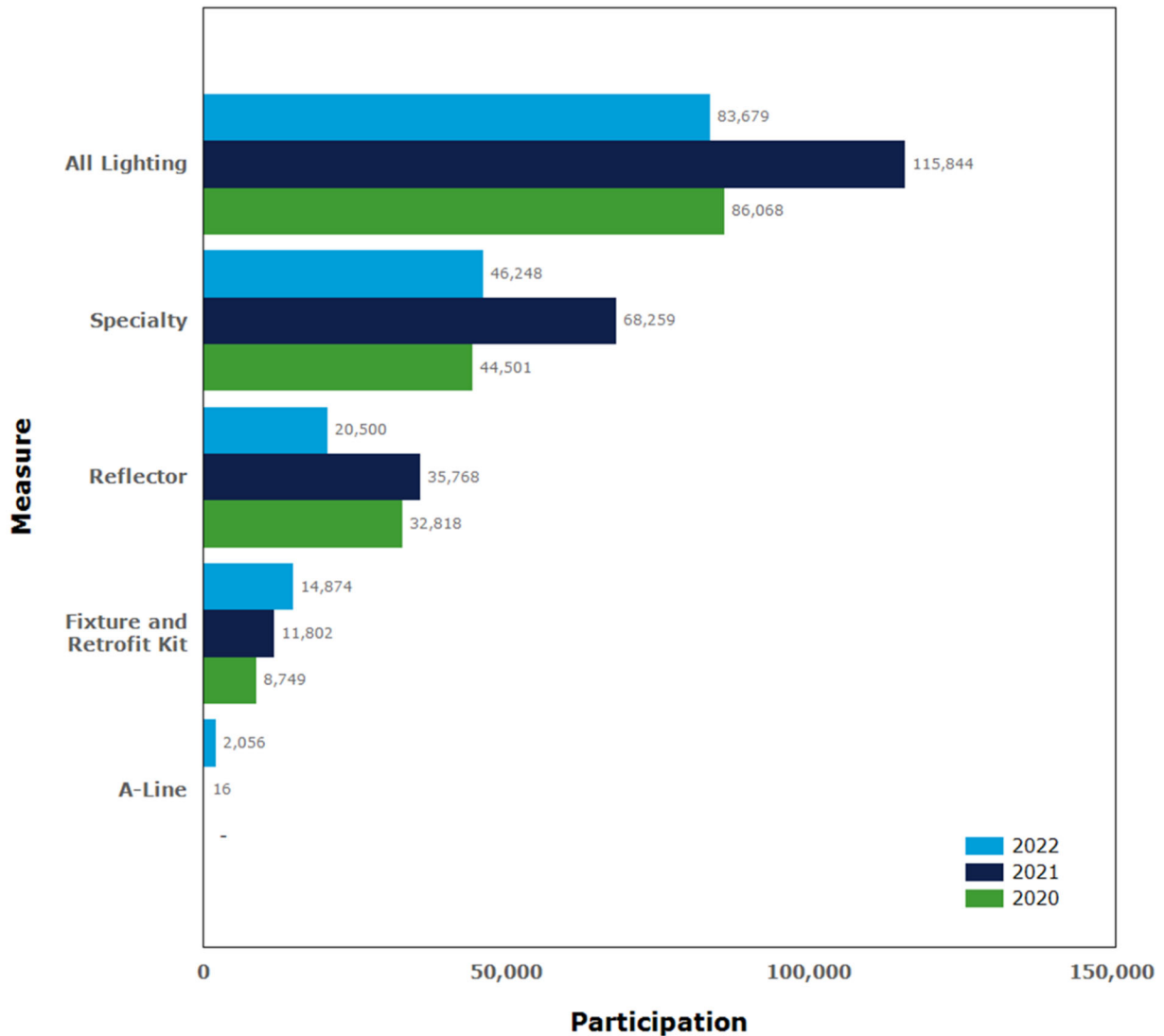




Figure 2-8. North Carolina Residential Efficient Products Marketplace Program participation by appliance measure and year

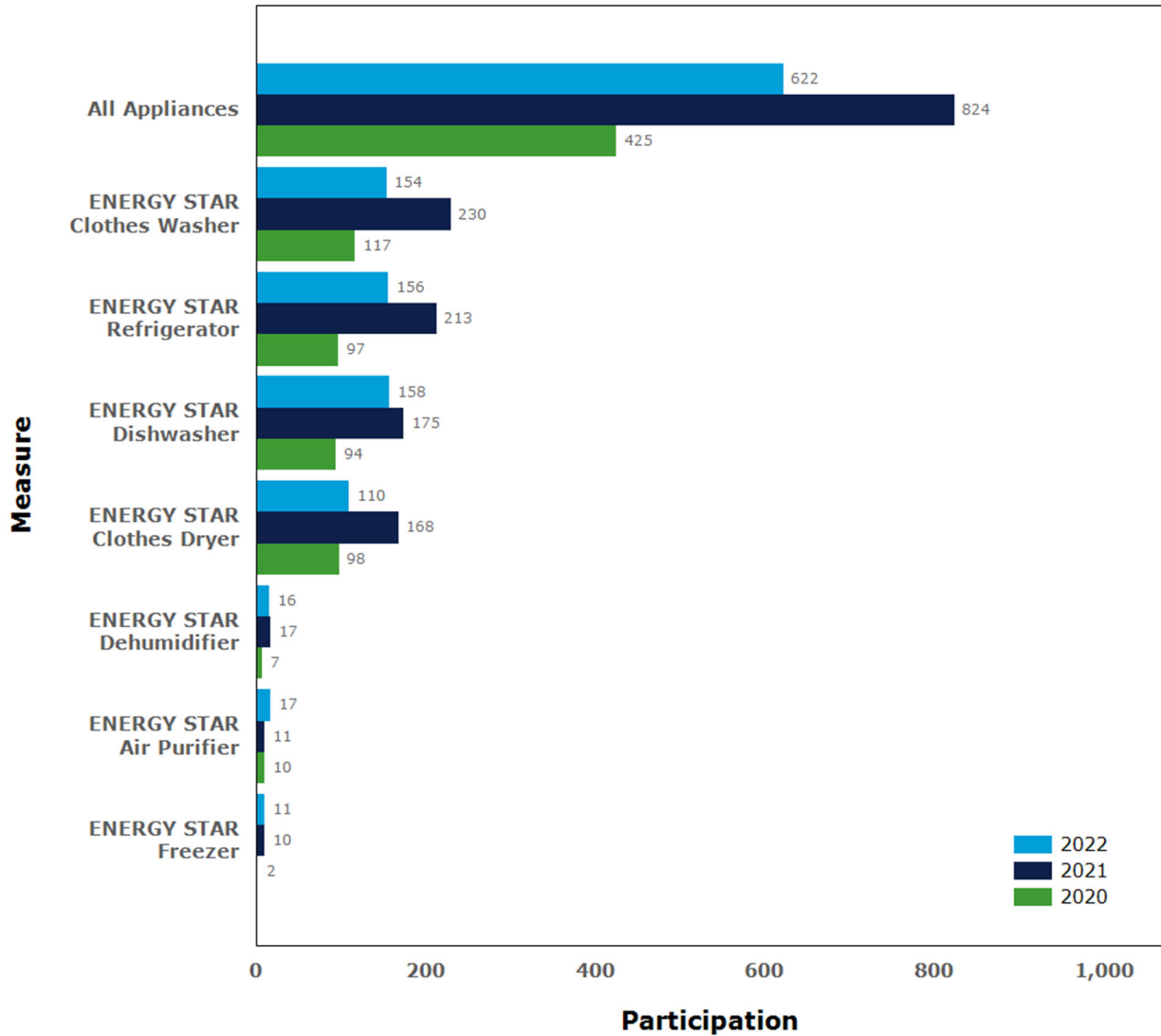




Figure 2-9. North Carolina Residential Efficient Products Marketplace Program gross annualized energy savings by lighting measure and year (MWh/year)

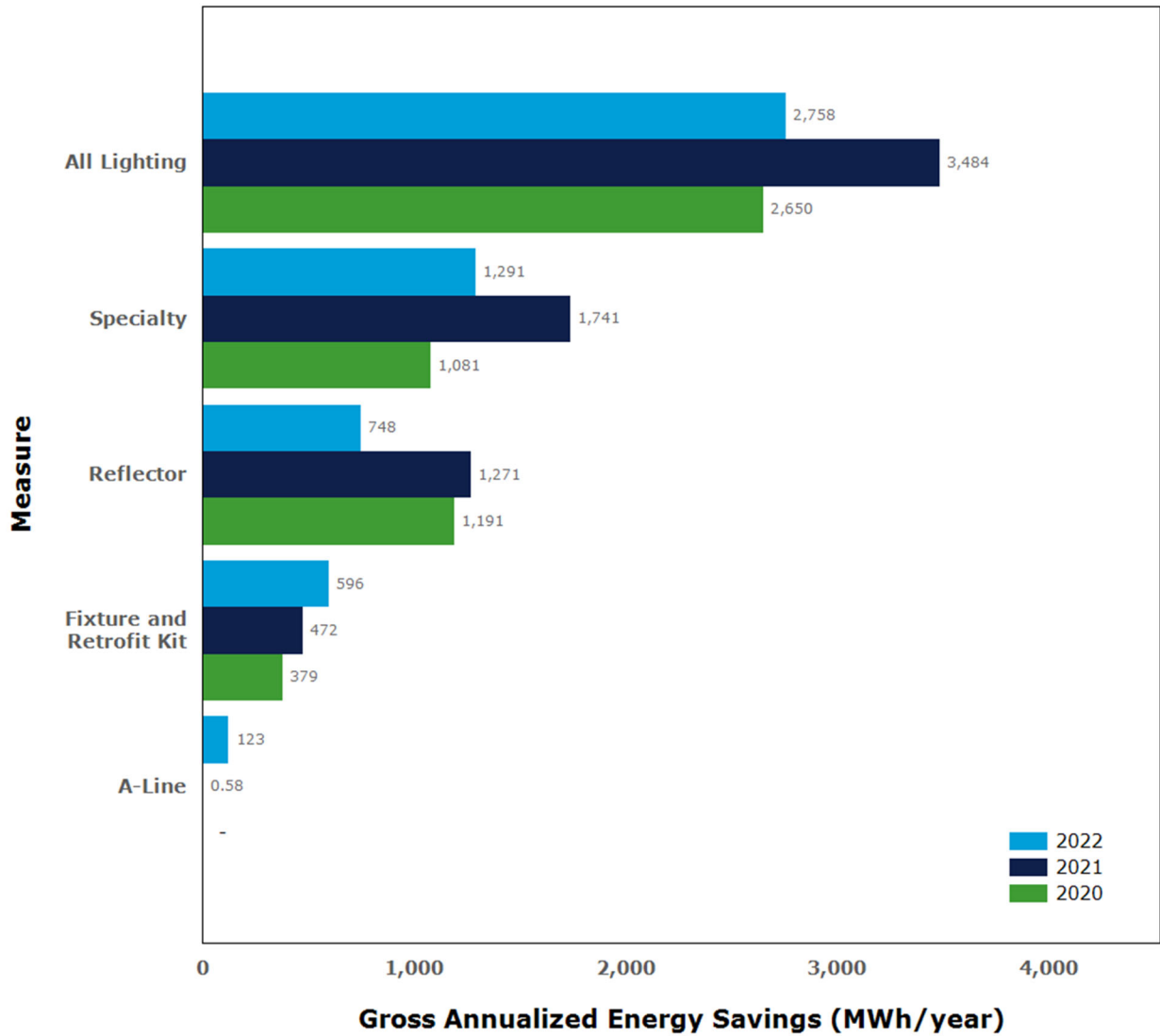
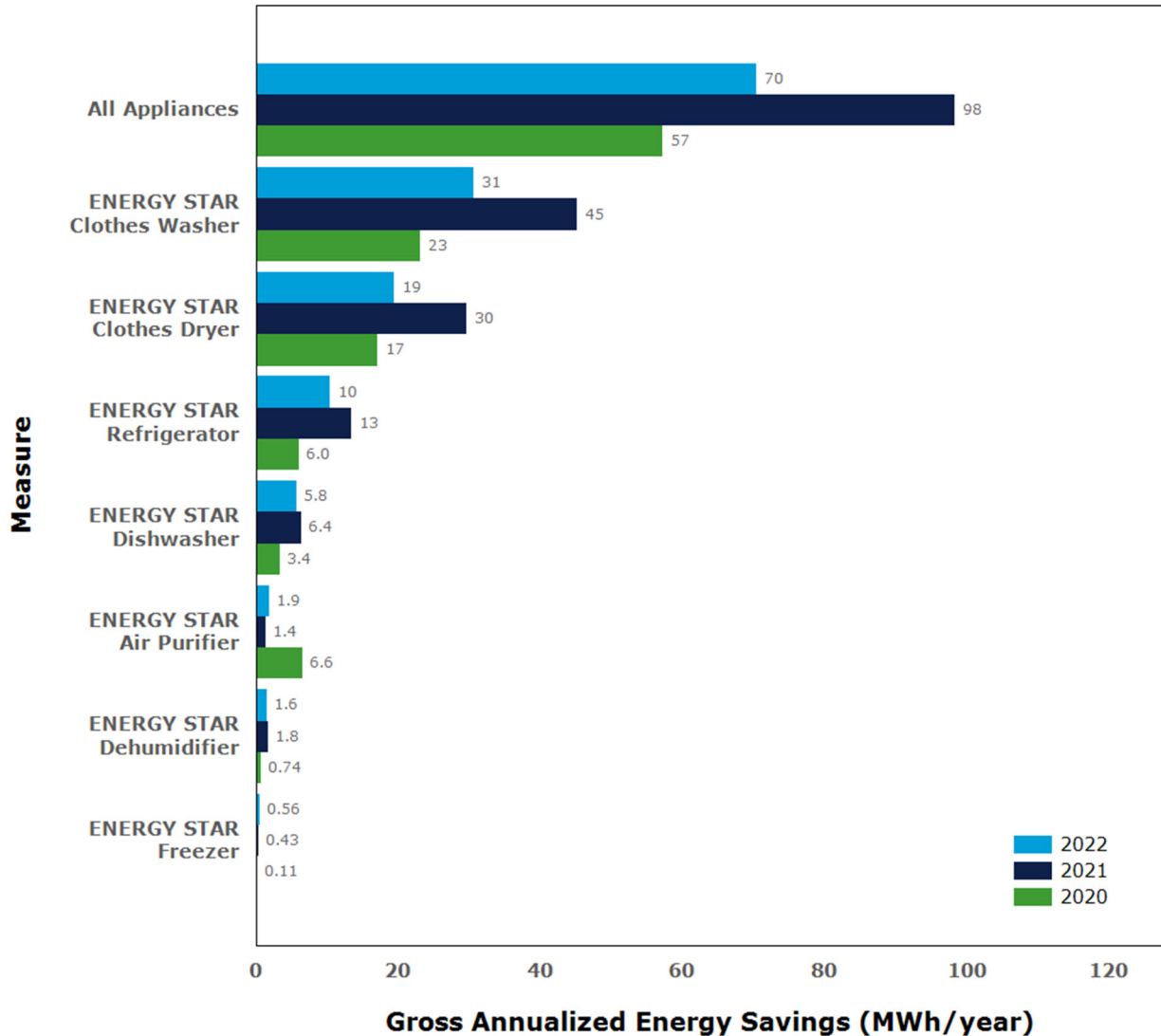




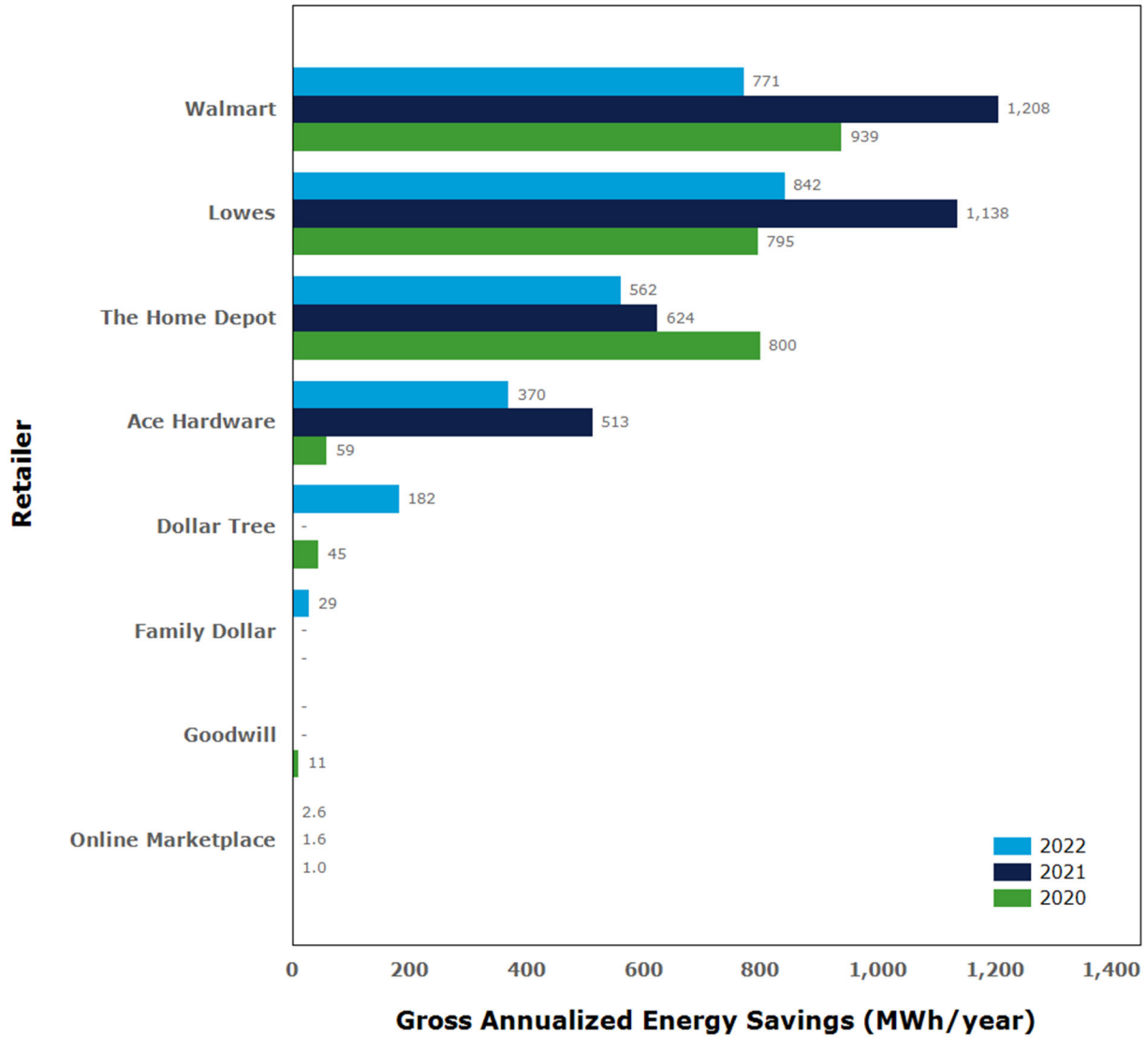
Figure 2-10. North Carolina Residential Efficient Products Marketplace Program gross annualized energy savings by appliance measure and year (MWh/year)



Customers purchased program incentivized LED lamps from seven retailers in 2022 (Figure 2-11). Walmart, Lowes, Home Depot, and Ace Hardware accounted for 92% the lighting savings in 2022.



Figure 2-11. North Carolina Residential Efficient Products Marketplace Program gross annualized energy savings (MWh/year) by lighting retailer and year





2.2 Residential Electric Vehicle Energy Efficiency and Demand Response Program – Virginia

2.2.1 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 Electric Vehicle Rewards (demand response) Program.

Customers who receive these rebates and enroll in the demand response program are counted as participants in the latter program. To read more about the peak shaving EV Vehicle Rewards Program, please see Section 9.3.

Customers who live in single-family detached homes with Wi-Fi service, are on a residential rate, and are responsible for the electric bill, are eligible to participate.



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 2022.³⁶

The planned net energy savings reported herein were estimated assuming a Level 1 EV charger as the baseline condition to be replaced by an ENERGY STAR certified Level 2 EV charger offered through the program. DNV, however, assumed a blended baseline condition of a Level 1 charger and a non-ENERGY STAR certified Level 2 EV charger to account for a mix of both plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs). DNV estimated savings assuming a 61% Level 1 EV charger baseline and a 39% non-ENERGY STAR certified Level 2 EV charger baseline. For more details regarding the savings assumptions and methodologies used to calculate energy savings, refer to Appendix F, the Residential DE TRM.

In 2022, EV program participation was impacted by difficulties in the launch and integration of the demand response program. However, 206 new participants joined the program in 2022. Dominion plans to increase marketing for the energy efficiency program in 2023 to ensure that customers are aware of rebate eligibility.

2.2.2 Methods for the current reporting period

For the current period, the approach included reviewing tracking data and estimating gross energy and demand savings using the DE TRM calculations located in Appendix F. The EM&V Plan for this program is included in Appendix E. Table 2-4 outlines Dominion Energy's initial program planning assumptions.

³⁶ Residential Electric Vehicle Program Terms and Conditions, <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/save-energy/ev/evse-eedr-tcs-final.pdf>. Accessed March 28, 2022.



Table 2-4. Residential Electric Vehicle (EE) Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 80% |
| Measure Life (years) | 10.0 |
| 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 | 0.039 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.013 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 375.52 |
| Average Rebate per Participant (US\$) | \$125.00 |

2.2.3 Assessment of program progress toward plan

The next section describes 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 annually and cumulatively from program inception through 2022, in Virginia. Shaded cells are considered extraordinarily sensitive information. Appendix O.2 shows detailed program indicators by year and month, program performance by measure, comparison of program savings with usage by rate schedule, and all the program’s benefit cost scores that have been filed. Appendix Q gives cumulative gross and net savings.

Table 2-5. Virginia Residential Electric Vehicle (EE) Program performance indicators (2020–2022)³⁷

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|--------------------------------------|---------------------------------|----------|-----------|------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$620 | \$13,241 | \$11,573 | \$25,433 |
| Total Costs (\$) | Total ³⁸ | \$14,517 | \$282,385 | \$277,166 | \$574,068 |
| | Planned | \$0 | \$349,322 | \$385,915 | \$735,236 |
| | Variance | \$14,517 | -\$66,937 | -\$108,749 | -\$161,169 |
| | Annual % of Planned | N/A | 81% | 72% | 78% |
| Participants | Total (Gross) | 0 | 93 | 206 | 299 |
| | Planned (Gross) | 0 | 550 | 748 | 1298 |
| | Variance | 0 | -457 | -542 | -999 |
| | Annual % of Planned (Gross) | N/A | 17% | 28% | 23% |

³⁷ The sum of the individual annual values may differ from the total value due to rounding.

³⁸ 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|------|---------|---------|---------------------------|
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 12,379 | 27,255 | 39,634 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 12,379 | 27,255 | 39,634 |
| | Net-to-Gross Ratio ³⁹ | N/A | 80% | 80% | 80% |
| | Net-to-Gross Adjustment | 0 | -2,476 | -5,451 | -7,927 |
| | Net Adjusted Savings | 0 | 9,903 | 21,804 | 31,707 |
| | Planned Savings (Net) | 0 | 206,534 | 280,887 | 487,421 |
| | Annual % Toward Planned Savings (Net) | N/A | 4.79% | 7.76% | 6.51% |
| | Avg. Savings per Participant (Gross) | N/A | 133 | 132 | 133 |
| Avg. Savings per Participant (Net) | N/A | 106 | 106 | 106 | |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 0.0 | 0.0 |
| | Realization Rate | N/A | N/A | N/A | N/A |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0/0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 0/0 | 0.0 |
| | Net-to-Gross Ratio ⁴⁰ | N/A | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | 0.0 | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | 0.0 | 21.4 | 29.1 | 50.6 |
| | Annual % Toward Planned Reduction (Net) | N/A | 0% | 0% | 0% |
| | Avg. Demand per Participant (Gross) | N/A | 0.0 | 0.0 | 0.0 |
| Avg. Demand per Participant (Net) | N/A | 0.0 | 0.0 | 0.0 | |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 0.0 | 0.0 | 0.0 |
| | Realization Rate | - | N/A | N/A | N/A |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ⁴¹ | - | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | - | 7.1 | 9.7 | 16.9 |
| | Annual % Toward Planned Reduction (Net) | - | 0% | 0% | 0% |
| | Avg. Demand per Participant (Gross) | - | 0.0 | 0.0 | 0.0 |

³⁹ 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), the implementation vendor has calculated that 98% 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.

⁴⁰ Ibid.

⁴¹ Ibid.



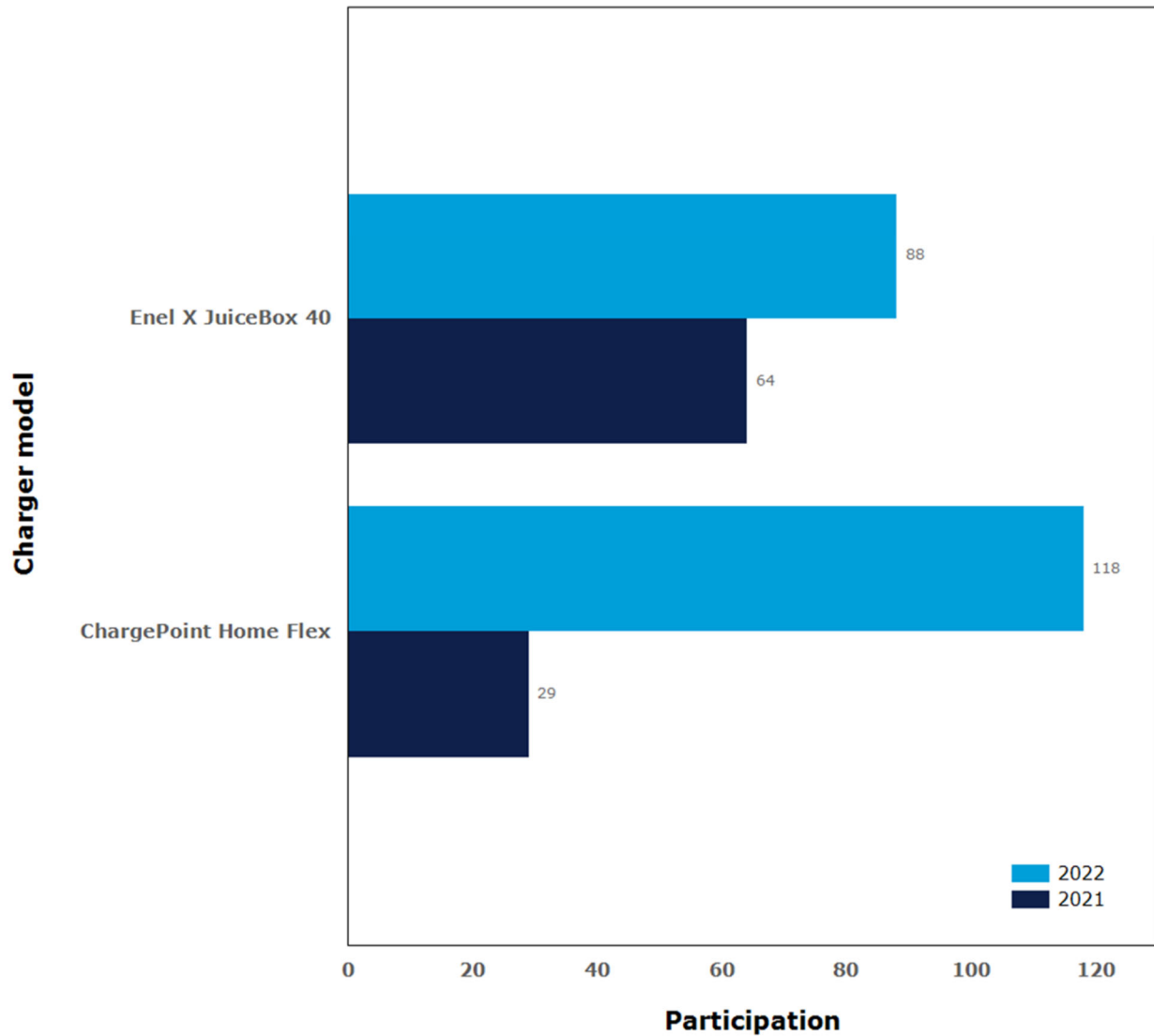
| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------------------------|---|-------|--------|--------|---------------------------|
| | Avg. Demand per Participant (Net) | - | 0.0 | 0.0 | 0.0 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$149 | \$85 | \$85 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$1.00 | \$1.00 | \$1.00 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | N/A | N/A | N/A |
| | Cml Annual \$EM&V per Total Costs (\$) | 48.3% | 14.3% | 14.9% | 14.9% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$125 | \$125 | \$125 |

2.2.3.2 Additional Virginia program data

Figure 2-12. shows the number of electric vehicle Level 2 chargers installed through the program. Figure 2-13 shows the gross annualized energy savings by eligible charger model. Other detailed program participation and savings at the measure level are provided in Appendix O.2.



Figure 2-12. Number of installed electric vehicle Level 2 chargers by model

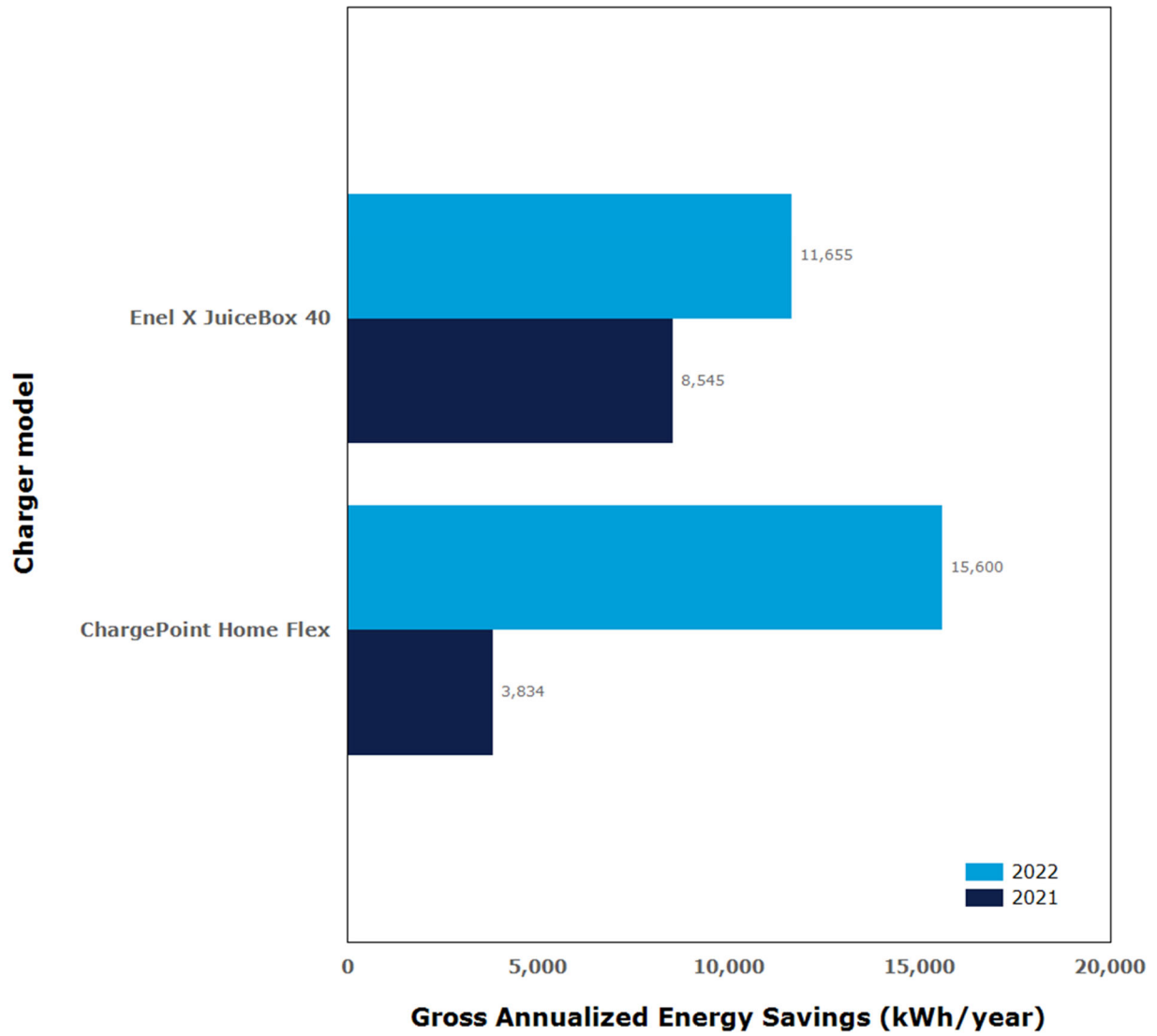


As seen in Figure 2-12., program participation increased for both charger models in 2022, though the ChargePoint Home Flex charger became the leading model. Currently, only the two EV charger models above are eligible for program participation due to integration limitations with the program implementer’s system. Dominion Energy plans to add two more chargers for eligibility in early 2023, but charger eligibility and compatibility with vehicle models continued to impact program participation in 2022.

Figure 2-13 shows gross energy savings increasing accordingly with program participation. Energy savings for ChargePoint Home Flex chargers grew significantly in 2022 and is expected to grow further in future program years.



Figure 2-13. Residential Electric Vehicle Program gross annualized energy savings by charger model (kWh/year)





2.3 Residential Kits Program – Virginia and North Carolina

2.3.1 Program description

The Residential Energy Efficiency Kits Program provides new residential customers with “Welcome Kits” that include a Tier 1 advanced power strip – or “smart strip” – alongside an educational insert informing customers both how to better manage their energy use and how to opt into receiving additional free measures if interested. To receive additional measures, customers must confirm their address and account status and answer a series of questions to confirm the measures will be of value in producing electric energy savings in the home. Along with receiving these additional measures, customers also receive educational materials on the proper use of each measure, energy use in general, and energy savings available through other Dominion Energy DSM programs.



The program is currently available to new customer residences in Dominion Energy’s Virginia and North Carolina service territories. Besides the initial Tier 1 smart strip, the kit includes measures such as low-flow showerheads and aerators, water heater pipe insulation, LED lamp upgrades, door/window weatherstripping, door sweeps, outlet/switch gaskets, and caulking.

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 North Carolina Utilities Commission approved this program on November 13, 2020 (Docket No. E-22, SUB 592. Program activity and EM&V tracking started in early 2020 for Virginia and North Carolina.

While the program saw an overall decrease in Tier 1 participation from 2021 to 2022, there was an increase in participation for Tier 2 measures (which is every measure excluding the initial smart strip).

2.3.2 Methods for the current reporting period

The next section describes the program’s progress toward planned participant, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 2-6 outlines Dominion Energy’s initial program planning assumptions, which were used to design the program.

Table 2-6. Residential Kits Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 60% |
| Measure Life (years) | 14.81 |
| Gross Average Annual Savings per Participant (kWh/year) | 440.86 |
| Gross Average Demand Reduction Per Participant (kW) | 0.133 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 264.52 |
| Average Rebate per Participant (US\$) | \$51.45 |



2.3.3 Assessment of program progress toward plan

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

2.3.3.1 Key Virginia program data

Table 2-7 provides performance indicator data from program inception to year-end 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.3 provides detailed program indicators, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q cumulative gross and net savings by year and month.

Program participation in this program is defined as the number of unique customer accounts.

Table 2-7. Virginia Residential Kits program performance indicators (2020-2022)⁴²

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------------|----------|-------------|-------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$1,541 | \$61,802 | \$51,451 | \$114,794 |
| Total Costs (\$) | Total ⁴³ | \$36,118 | \$1,318,034 | \$1,232,247 | \$2,586,398 |
| | Planned | \$0 | \$1,950,228 | \$1,925,785 | \$3,876,013 |
| | Variance | \$36,118 | -\$632,193 | -\$693,539 | -\$1,289,615 |
| | Annual % of Planned | N/A | 68% | 64% | 67% |
| Participants | Total (Gross) | 0 | 28,113 | 26,790 | 54,903 |
| | Planned (Gross) | 0 | 28,200 | 28,200 | 56,400 |
| | Variance | 0 | -87 | -1,410 | -1,497 |
| | Annual % of Planned (Gross) | N/A | 100% | 95% | 97% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 3,442,999 | 3,439,997 | 6,882,996 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 3,442,999 | 3,439,997 | 6,882,996 |
| | Net-to-Gross Ratio | N/A | 60% | 60% | 60% |
| | Net-to-Gross Adjustment | 0 | -1,377,200 | -1,375,999 | -2,753,198 |
| | Net Adjusted Savings | 0 | 2,065,800 | 2,063,998 | 4,129,798 |
| | Planned Savings (Net) | 0 | 7,459,378 | 7,459,378 | 14,918,756 |
| | Annual % Toward Planned Savings (Net) | N/A | 27.7% | 27.7% | 27.7% |
| | Avg. Savings per Participant (Gross) | N/A | 122 | 128 | 125 |

⁴² The sum of the individual annual values may differ from the total value due to rounding.

⁴³ 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|-------|--------|--------|---------------------------|
| | Avg. Savings per Participant (Net) | N/A | 73 | 77 | 75 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 302.3 | 301.4 | 603.7 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 302.3 | 301.4 | 603.7 |
| | Net-to-Gross Ratio | N/A | 60% | 60% | 60% |
| | Net-to-Gross Adjustment | 0.0 | -120.9 | -120.6 | -241.5 |
| | Net Adjusted Demand | 0.0 | 181.4 | 180.8 | 362.2 |
| | Planned Demand (Net) | 0.0 | 661.7 | 661.7 | 1,323.5 |
| | Annual % Toward Planned Reduction (Net) | N/A | 27.4% | 27.3% | 27.4% |
| | Avg. Demand per Participant (Gross) | N/A | 0.01 | 0.01 | 0.01 |
| | Avg. Demand per Participant (Net) | N/A | 0.01 | 0.01 | 0.01 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 335.0 | 332.5 | 667.4 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 335.0 | 332.5 | 667.4 |
| | Net-to-Gross Ratio | - | 60% | 60% | 60% |
| | Net-to-Gross Adjustment | - | -134.0 | -133.0 | -267.0 |
| | Net Adjusted Demand | - | 201.0 | 199.5 | 400.5 |
| | Planned Demand (Net) | - | 653.5 | 653.5 | 1,306.9 |
| | Annual % Toward Planned Reduction (Net) | - | 30.8% | 30.5% | 30.6% |
| | Avg. Demand per Participant (Gross) | - | 0.01 | 0.01 | 0.01 |
| | Avg. Demand per Participant (Net) | - | 0.01 | 0.01 | 0.01 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$2 | \$2 | \$2 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0.02 | \$0.02 | \$0.02 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$210 | \$190 | \$190 |
| | Cml Annual \$EM&V per Total Costs (\$) | 92.2% | 11.2% | 10.4% | 10.4% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$30 | \$30 | \$30 |

2.3.3.2 Key North Carolina program data

Table 2-8 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Appendix P.2 provides program performance by measure, a comparison of program savings with usage by rate schedule, and detailed program indicators. Appendix Q show and cumulative gross and net savings by year and month.

Although the program began distribution in early March of 2021, in-processing was delayed until July 2021. Participation in this program is defined as the number of unique customer accounts.



Table 2-8. North Carolina Residential Kits program performance indicators (2021-2022)⁴⁴

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|--|---------------------------------------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$2,678 | \$2,899 | \$5,577 |
| Total Costs (\$) | Total ⁴⁵ | \$57,116 | \$69,433 | \$126,549 |
| | Planned | \$121,351 | \$122,877 | \$244,228 |
| | Variance | -\$64,235 | -\$53,444 | -\$117,679 |
| | Annual % of Planned | 47% | 57% | 52% |
| Participants | Total (Gross) | 1,264 | 1,453 | 2,717 |
| | Planned (Gross) | 1,800 | 1,800 | 3,600 |
| | Variance | -536 | -347 | -883 |
| | Annual % of Planned (Gross) | 70% | 81% | 75% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 159,580 | 182,428 | 342,008 |
| | Realization Rate | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 159,580 | 182,428 | 342,008 |
| | Net-to-Gross Ratio | 60% | 60% | 60% |
| | Net-to-Gross Adjustment | -63,832 | -72,971 | -136,803 |
| | Net Adjusted Savings | 95,748 | 109,457 | 205,205 |
| | Planned Savings (Net) | 476,131 | 476,131 | 952,261 |
| | Annual % Toward Planned Savings (Net) | 20.1% | 23.0% | 21.5% |
| | Avg. Savings per Participant (Gross) | 126 | 126 | 126 |
| | Avg. Savings per Participant (Net) | 76 | 75 | 76 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 13.9 | 16.3 | 30.2 |
| | Realization Rate | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 13.9 | 16.3 | 30.2 |
| | Net-to-Gross Ratio | 60% | 60% | 60% |
| | Net-to-Gross Adjustment | -5.6 | -6.5 | -12.1 |
| | Net Adjusted Demand | 8.4 | 9.8 | 18.1 |
| | Planned Demand (Net) | 42.2 | 42.2 | 84.5 |

⁴⁴ The sum of the individual annual values may differ from the total value due to rounding.

⁴⁵ 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 | Program total (2021–2022) |
|---|---|--------|--------|---------------------------|
| | Annual % Toward Planned Reduction (Net) | 19.8% | 23.1% | 21.4% |
| | Avg. Demand per Participant (Gross) | 0.01 | 0.01 | 0.01 |
| | Avg. Demand per Participant (Net) | 0.01 | 0.01 | 0.01 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 15.2 | 17.9 | 33.1 |
| | Realization Rate | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 15.2 | 17.9 | 33.1 |
| | Net-to-Gross Ratio | 60% | 60% | 60% |
| | Net-to-Gross Adjustment | -6.1 | -7.2 | -13.3 |
| | Net Adjusted Demand | 9.1 | 10.7 | 19.9 |
| | Planned Demand (Net) | 41.7 | 41.7 | 83.4 |
| | Annual % Toward Planned Reduction (Net) | 21.9% | 25.7% | 23.8% |
| | Avg. Demand per Participant (Gross) | 0.01 | 0.01 | 0.01 |
| | Avg. Demand per Participant (Net) | 0.01 | 0.01 | 0.01 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$2 | \$2 | \$2 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.02 | \$0.02 | \$0.02 |
| | Cml Annual \$Admin. per kW (Gross) | \$192 | \$185 | \$185 |
| | Cml Annual \$EM&V per Total Costs (\$) | 4.8% | 8.0% | 8.0% |
| | Cml Annual \$Rebate per Participant (Gross) | \$30 | \$30 | \$30 |

2.3.3.3 Additional Virginia program data

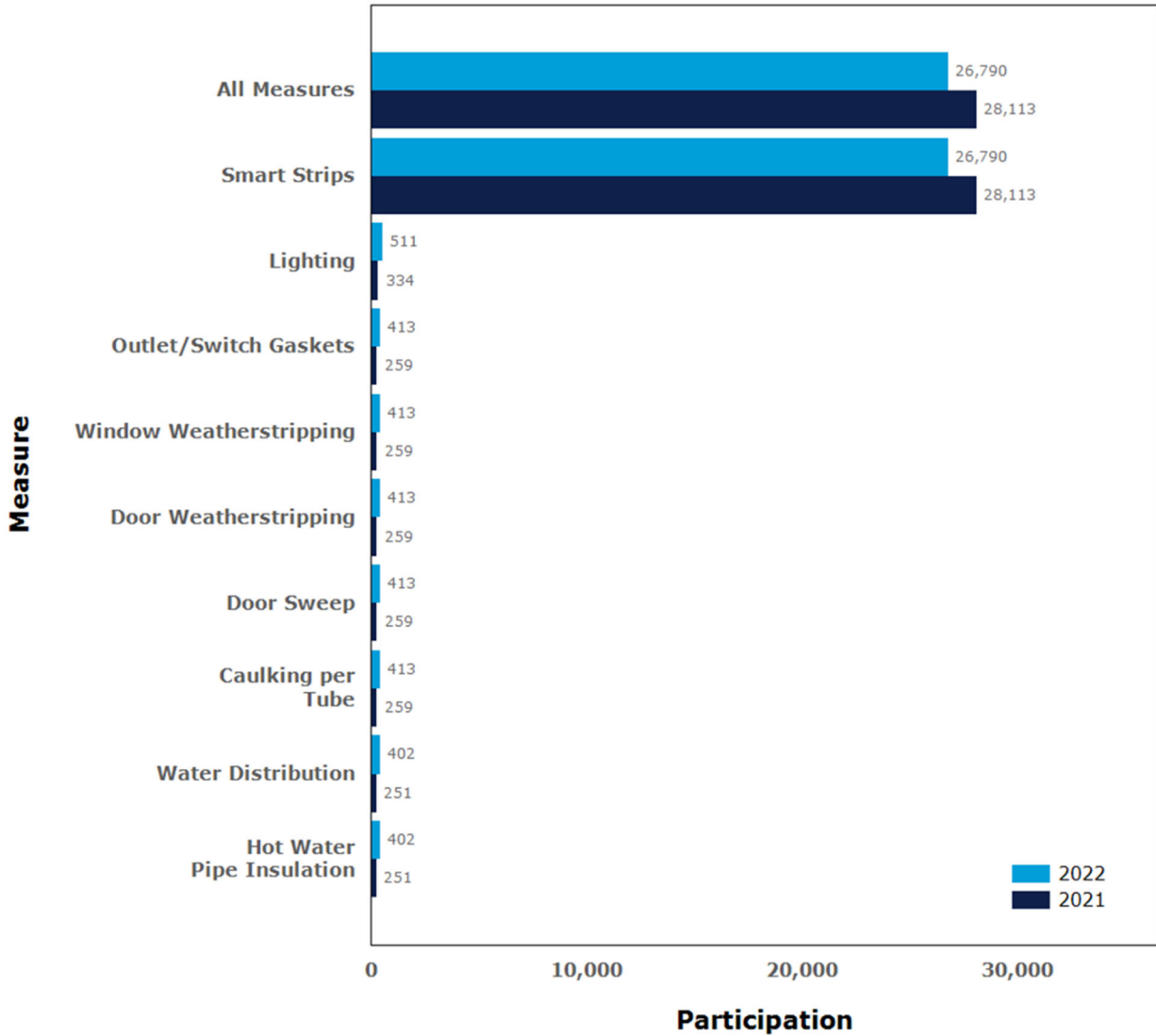
Figure 2-14 and Figure 2-15 show Virginia participants and gross annualized energy savings by measure and year. Other detailed program participation and savings at the measure level are provided in Appendix O.3.

As participation in the program originally started with new customers receiving and installing a smart strip, this measure accounts for an overwhelming majority of total measures installed (88.8%). Across 2021 and 2022, the Residential Kits program had 6,882,996 kWh/year of gross energy savings. Of that, 90% of the gross savings resulted from smart strips. Since only a small fraction of customers who received the smart strip opted to receive additional measures, participation and savings for these other measures is significantly smaller than was the case for the smart strips. Of the additional measures installed, total annualized energy savings in 2021 and 2022 were largely driven by lighting (271 MWh/year), water distribution (250 MWh/year), and hot water pipe insulation (131 MWh/year).

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as new participants, although their savings are counted.



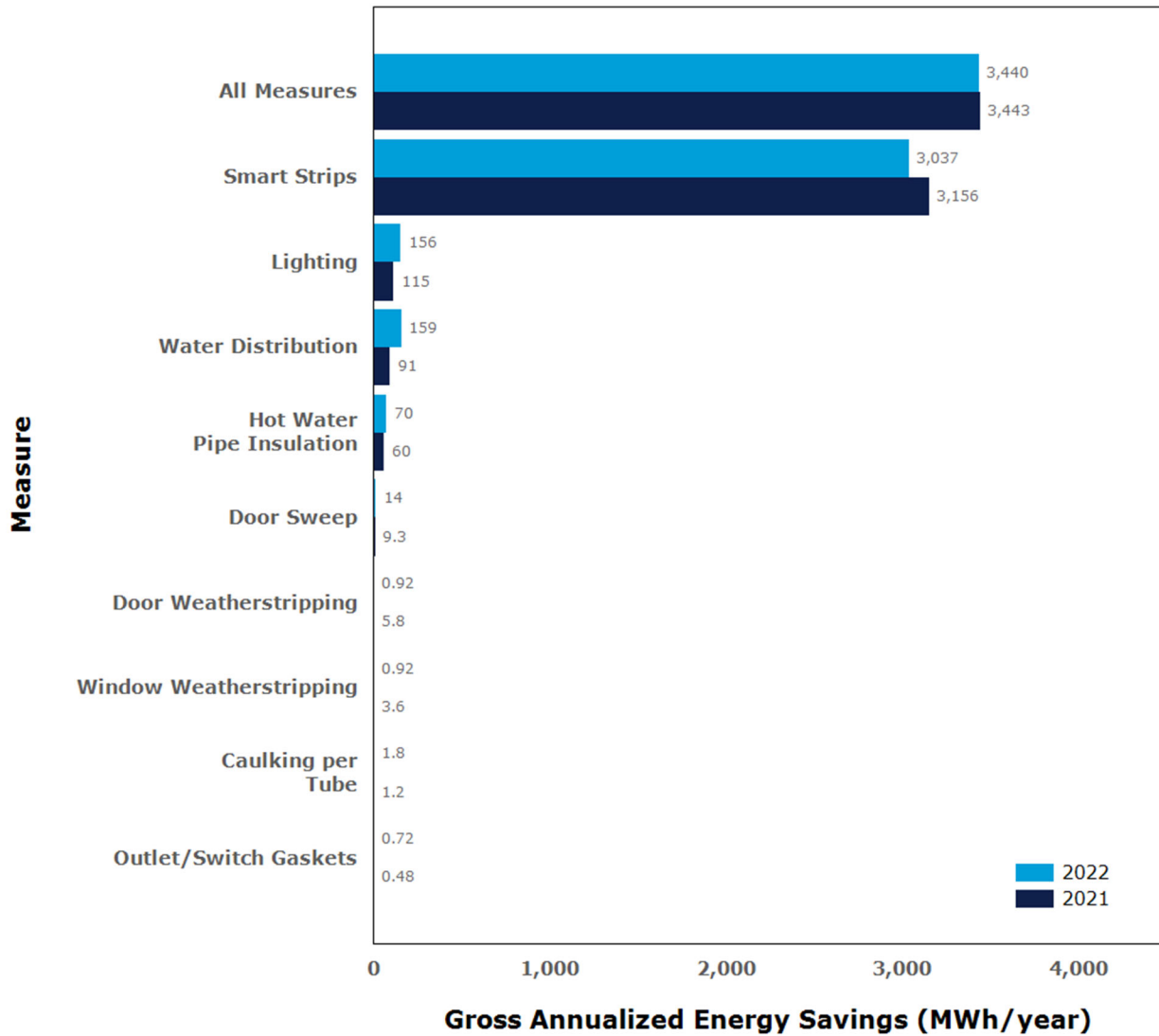
Figure 2-14. Virginia Residential Kits program participation by measure and year



The first participants in the program enrolled in July 2021, totaling 28,113 for the 2021 year. Participation in 2022 was slightly less than in the year before, at 26,790. However, given that 2021 participation captured only six months of participation, average monthly participation decreased sharply in 2022. As each participant received a smart strip associated with Tier 1, this count is synonymous with total participation. A fraction (2.6%) of program participants opted in to receive additional measures via Tier 2 and installed measures were predominantly lighting followed by outlet/switch gaskets, door, and window weatherstripping, caulking, and door sweeps. This corresponds to 11% of all measures distributed by the program.



Figure 2-15. Virginia Residential Kits program gross annualized energy savings by measure and year (MWh/year)



As was the case with overall measure installations, most of the program’s annualized energy savings can be attributed to the smart strips initially received by participants with nearly 90% (6,193 MWh/year) of the total for the first two years of the program (6,883 MWh/year). For participants choosing to opt in to receive additional measures in the first two years, savings were largely attributed to lighting (3.9% or 271 MWh/year), water distribution measures (3.6% or 250 MWh/year), and hot water pipe insulation (1.9% or 130 MWh/year). While water distribution measures and hot water pipe insulation were sent to fewer participants, they did produce higher savings than the weatherstripping measures. The remainder of installed measures accounted for minimal gross annualized energy savings.



2.3.3.4 Additional North Carolina program data

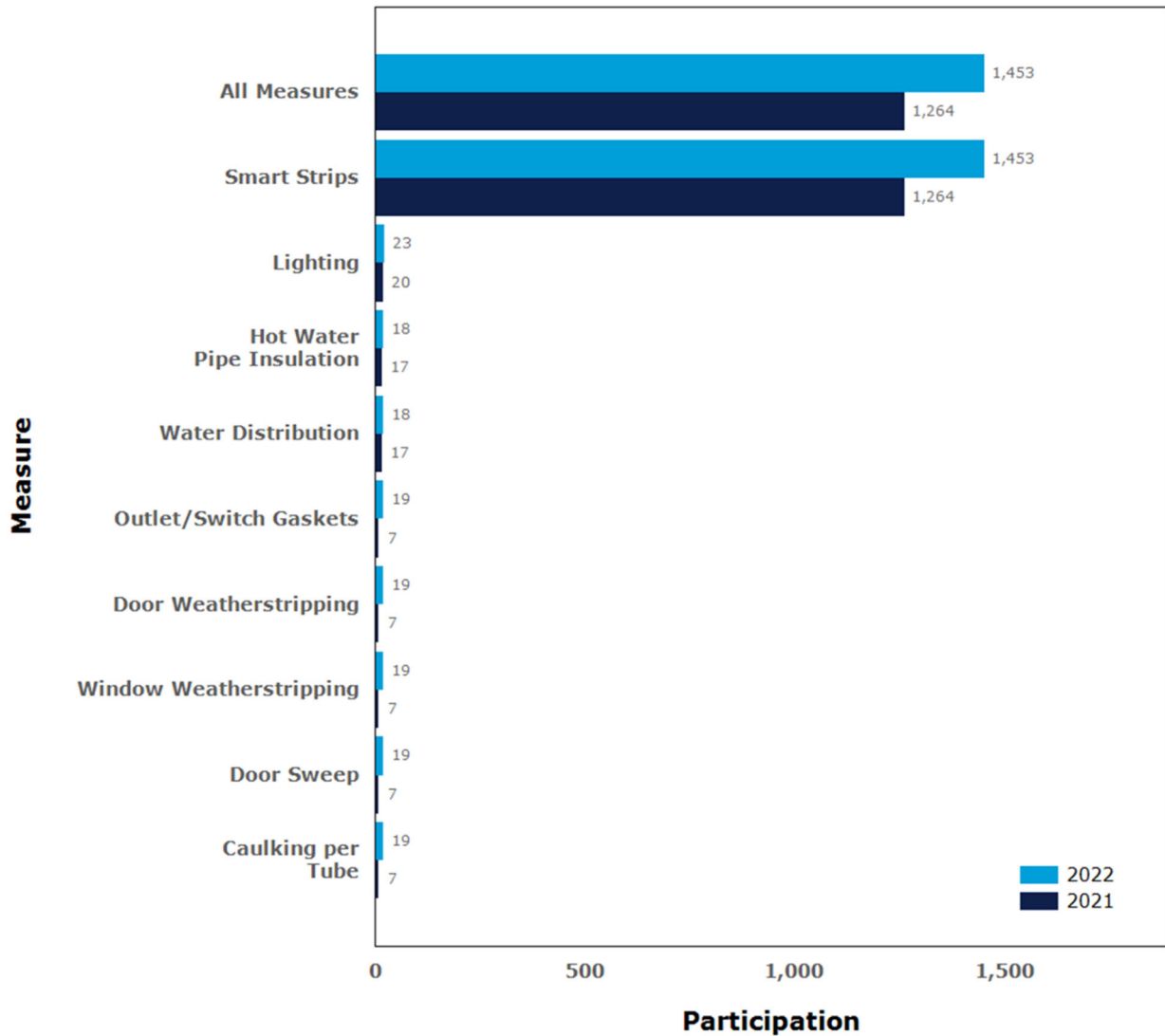
Figure 2-16 and Figure 2-17 show the North Carolina participants, gross annualized energy savings, and average gross annualized energy savings by measure and year. Other detailed program participation and savings at the measure level are provided in Appendix P.2.

As participation in the program originally started with new customers receiving and installing a smart strip, an overwhelming majority of measures installed (1,453) and energy savings (165 MWh/year or 90%) were attributed to this measure. Since only a small fraction of customers who received the smart strip opted in to receive additional measures, participation and savings for these other measures is significantly smaller than was the case for the smart strips. Of the additional measures installed, annualized energy savings were largely driven by lighting (7.3 MWh/year), water distribution (6.1 MWh/year), and hot water pipe insulation (3.1 MWh/year).

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.



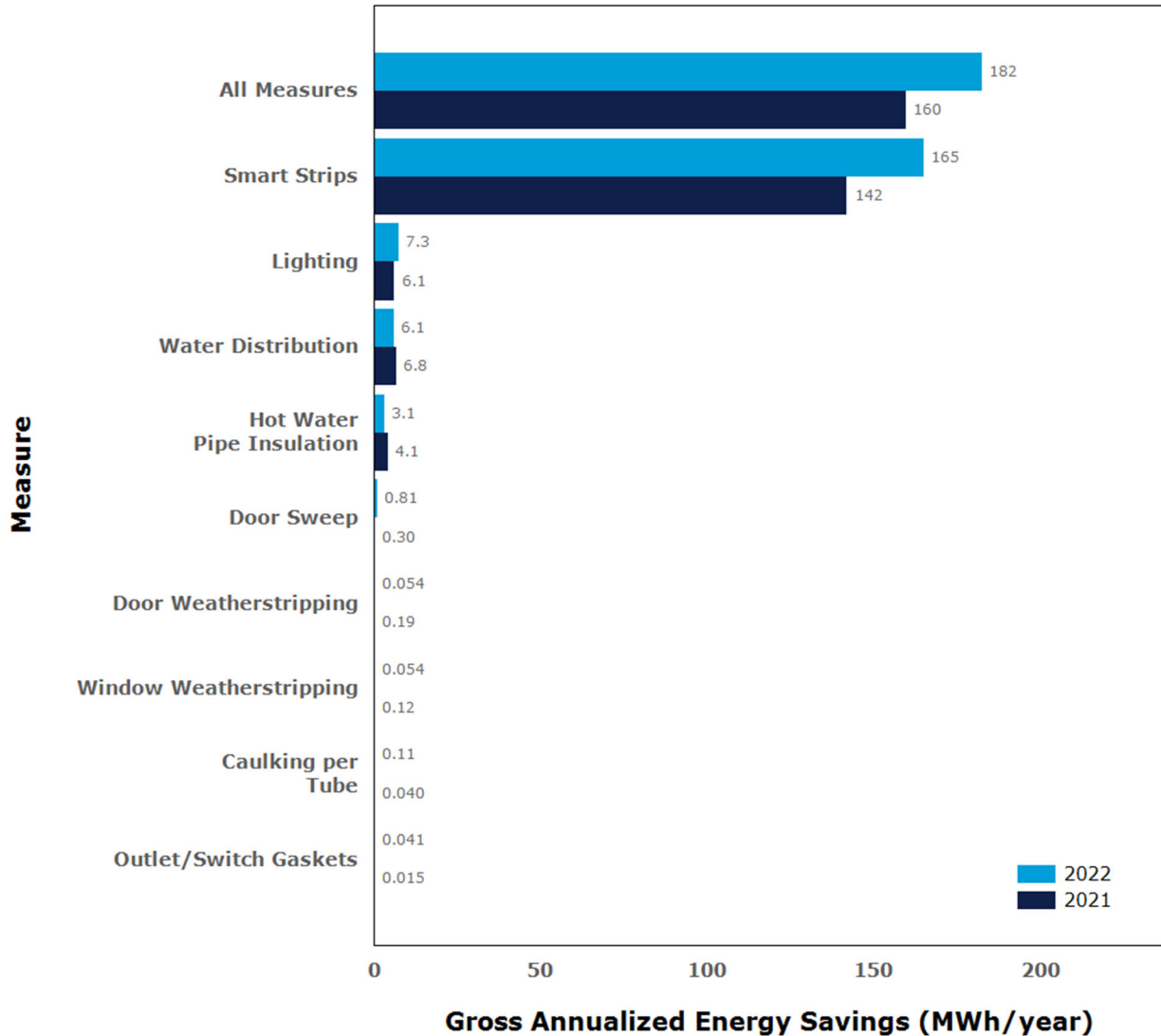
Figure 2-16. North Carolina Residential Kits program participation by measure and year



The first participants in the program enrolled in July 2021, reaching a total of 1,264 in 2021. In 2022, the total participation increased slightly to 1,453. As stated previously, each participant received a smart strip therefore this count is synonymous with total participation. A small fraction of program participants opted in to receive Tier 2's additional measures, and subsequent savings consisted predominantly from lighting, followed by hot water pipe insulation, water distribution measures, outlet switch/gaskets, door weatherstripping, window weatherstripping, door sweep, and caulking.



Figure 2-17. North Carolina Residential Kits program gross annualized energy savings by measure and year (MWh/year)



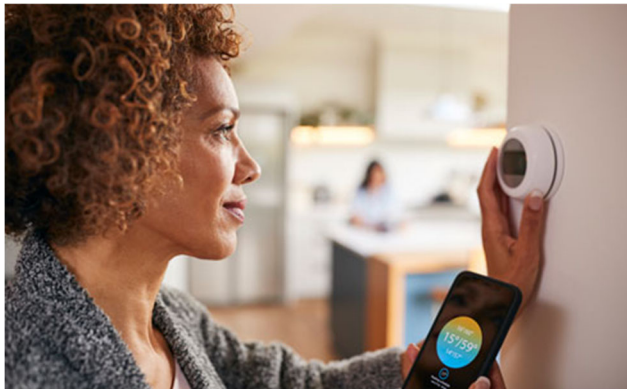
As with overall measure installs, most of the program’s gross annualized energy savings can be attributed to the smart strips participants initially received, with nearly 90% (306.8 MWh/year) of the total for the two full years since the program launched (342 MWh/year). For participants opting in to receive additional measures, savings were largely attributed to lighting (3.9% or 13.4 MWh/year), water distribution (3.8% or 12.9 MWh/year), and hot water pipe insulation (2.1% or 7.2 MWh/year). The remainder of installed measures had relatively minimal annualized energy savings.



2.4 Residential Thermostat Purchase and WeatherSmartSM Program – Virginia and North Carolina

2.4.1 Program description

The Residential Smart Thermostat Purchase and WeatherSmart ProgramSM has two components. The Residential Smart Thermostat Purchase component provides an incentive for purchasing and installing up to two ENERGY STAR[®] 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 residential customer residing in a Wi-Fi-enabled 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.⁴⁶ 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).⁴⁷ Upon approval, the Company worked to finalize data systems, determine program logistics with program implementers, and finalize implementation details.

2.4.2 Methods for the current reporting period

The EM&V plans are included in Appendix E. For the current period, the approach included reviewing the tracking data and estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 2-9 and Table 2-10 outline Dominion Energy’s initial program planning assumptions.

⁴⁶ Virginia Residential Smart Thermostat Program Terms and Conditions, <https://domsavings.com/wp-content/uploads/2021/12/Smart-Stats-Purchase-TCs-DEV-1221.pdf> Accessed March 23, 2023.

⁴⁷ North Carolina Residential Smart Thermostat Program Terms and Conditions, <https://domsavings.com/wp-content/uploads/2021/12/Smart-Stat-Purchase-EE-TCs-DENC-Final-1221.pdf> Accessed March 23, 2023.



Table 2-9. Residential Smart Thermostat Purchase Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 80% |
| Measure Life (years) | 10 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 538 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.05 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.13 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 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 per Participant (US\$) | \$50.00 |

Table 2-10. Residential Thermostat WeatherSmart Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 95% |
| Measure Life (years) | 10 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 303 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.05 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.05 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 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 per Participant (US\$) | \$10.00 |

2.4.3 Assessment of program progress toward plan

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

2.4.3.1 Key Virginia program data

Table 2-11 provides the performance indicator data from program inception through December 31, 2022. The shaded cells are considered extraordinarily sensitive information. Appendix O.4 provides detailed program indicators by year and month. Appendix Q shows cumulative gross and net savings (kWh and kW) by year and month. Appendix O.4.3 provides program performance by measure. Appendix O.4.4 shows a comparison of program savings with usage by rate schedule.



Table 2-11. Virginia Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2020–2022)⁴⁸

| Category | Item | 2020 | 2021 ⁴⁹ | 2022 | Program Total (2020-2022) |
|---|---|----------|--------------------|-------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$4,253 | \$47,014 | \$47,874 | \$99,141 |
| Total Costs (\$) | Total ⁵⁰ | \$99,671 | \$1,002,656 | \$1,146,575 | \$2,248,903 |
| | Planned | \$0 | \$1,176,343 | \$1,191,322 | \$2,367,665 |
| | Variance | \$99,671 | -\$173,686 | -\$44,747 | -\$118,762 |
| | Annual % of Planned | N/A | 85% | 96% | 95% |
| Participants ⁵¹ | Total (Gross) | 0 | 5,321 | 7,636 | 12,957 |
| | Planned (Gross) | 0 | 4,791 | 9,233 | 14,024 |
| | Variance | 0 | 530 | -1,597 | -1,067 |
| | Annual % of Planned (Gross) | N/A | 111% | 83% | 92% |
| Installed Energy Savings (kWh/year) ⁵² | Total Gross Deemed Savings | 0 | 1,399,012 | 1,875,496 | 3,274,508 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 1,399,012 | 1,875,496 | 3,274,508 |
| | Net-to-Gross Ratio ⁵³ | N/A | 82% | 82% | 82% |
| | Net-to-Gross Adjustment | 0 | -250,884 | -334,604 | -585,488 |
| | Net Adjusted Savings | 0 | 1,148,128 | 1,540,892 | 2,689,020 |
| | Planned Savings (Net) | 0 | 1,815,858 | 3,484,138 | 5,299,995 |
| | Annual Percent Toward Planned Savings (Net) | N/A | 63.2% | 44.2% | 50.7% |
| | Avg. Savings per Participant (Gross) | N/A | 263 | 246 | 253 |

⁴⁸ The sum of the individual annual values may differ from the total value due to rounding.

⁴⁹ 20 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.

⁵⁰ 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.

⁵¹ 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. These changes resulted in a 21% increase in participation, from 4,409 to 5,321.

⁵² 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 from 1,862,596 kWh/year to 1,399,012 kWh/year (25%).

⁵³ On the rebate application for the Purchase component 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), the implementation vendor has calculated that 43% answered "yes." This is not a substitute for a net-to-gross analysis conducted by an independent evaluator. See Appendix D. Methodologies, section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 ⁴⁹ | 2022 | Program Total (2020-2022) |
|---|--|-------|--------------------|--------|---------------------------|
| | Avg. Savings per Participant (Net) | N/A | 216 | 202 | 208 |
| Installed Summer Demand Reduction (kW) | Total Gross Demand Reduction ⁵⁴ | 0.0 | 212.4 | 287.1 | 499.5 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | 0.0 | 212.4 | 287.1 | 499.5 |
| | Net-to-Gross Ratio ⁵³ | N/A | 95% | 95% | 95% |
| | Net-to-Gross Adjustment | 0.0 | -10.6 | -14.4 | -25.0 |
| | Net Adjusted Demand Reduction | 0.0 | 201.8 | 272.7 | 474.6 |
| | Planned Demand (Net) | 0.0 | 197.7 | 381.0 | 578.7 |
| | Annual % Toward Planned Demand (Net) | N/A | 102.1% | 71.6% | 82.0% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.04 | 0.04 | 0.04 |
| | Avg. Demand per Participant (Net) | N/A | 0.04 | 0.04 | 0.04 |
| Installed Winter Demand Reduction (kW) | Total Gross Demand Reduction ⁵⁵ | - | 28.5 | 42.7 | 71.2 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | - | 28.5 | 42.7 | 71.2 |
| | Net-to-Gross Ratio ⁵³ | - | 95% | 95% | 95% |
| | Net-to-Gross Adjustment | - | -1.4 | -2.1 | -3.6 |
| | Net Adjusted Demand Reduction | - | 27.1 | 40.6 | 67.6 |
| | Planned Demand (Net) | - | 479.3 | 923.7 | 1,403.0 |
| | Annual % Toward Planned Demand (Net) | - | 5.65% | 4.39% | 4.82% |
| | Avg. Peak Demand per Participant (Gross) | - | 0.01 | 0.01 | 0.01 |
| | Avg. Demand per Participant (Net) | - | 0.01 | 0.01 | 0.01 |
| Program Performance | Cml. Annual \$Admin. per Participant (Gross) | N/A | \$10 | \$8 | \$8 |
| | Cml. Annual \$Admin. per kWh/year (Gross) | N/A | \$0.04 | \$0.03 | \$0.03 |
| | Cml. Annual \$Admin. per kW (Gross) | N/A | \$241 | \$198 | \$198 |
| | Cml. Annual \$EM&V per Total Costs (\$) | 31.0% | 15.3% | 13.1% | 13.1% |
| | Cml. Annual \$Rebate per Participant (Gross) | N/A | \$72 | \$68 | \$68 |

⁵⁴ 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 from 0 to 212.4 kW.

⁵⁵ 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 from 0 to 28.5 kW.



2.4.3.2 Key North Carolina program data

Table 2-12 provides performance indicator data from program inception through December 31, 2022, and shaded cells are considered extraordinarily sensitive information. Appendix P.3 provides detailed program indicators by year and month. Appendix Q shows cumulative gross and net savings (kWh and kW) by year and month. Appendix P.3.3 provides program performance by measure. Appendix P.3.4 shows a comparison of program savings with usage by rate schedule.

Table 2-12. North Carolina Residential Smart Thermostat Purchase and WeatherSmart performance indicators (2021–2022)⁵⁶

| Category | Item | 2021 | 2022 | Program Total (2021-2022) |
|---|----------------------------------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$900 | \$2,125 | \$3,025 |
| Total Costs (\$) | Total ⁵⁷ | \$19,202 | \$50,894 | \$70,096 |
| | Planned | \$73,197 | \$76,014 | \$149,210 |
| | Variance | -\$53,995 | -\$25,119 | -\$79,114 |
| | Annual % of Planned | 26% | 67% | 47% |
| Participants ⁵⁸ | Total (Gross) | 71 | 265 | 336 |
| | Planned (Gross) | 306 | 589 | 895 |
| | Variance | -235 | -324 | -559 |
| | Annual % of Planned (Gross) | 23% | 45% | 38% |
| Installed Energy Savings (kWh/year) ⁵⁹ | Total Gross Deemed Savings | 18,008 | 76,560 | 94,568 |
| | Realization Rate | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 18,008 | 76,560 | 94,568 |
| | Net-to-Gross Ratio ⁶⁰ | 85% | 82% | 83% |
| | Net-to-Gross Adjustment | -2,781 | -13,732 | -16,514 |
| | Net Adjusted Savings | 15,227 | 62,828 | 78,055 |
| | Planned Savings (Net) | 115,978 | 222,263 | 338,242 |

⁵⁶ The sum of the individual annual values may differ from the total value due to rounding.

⁵⁷ 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.

⁵⁸ 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. These changes resulted in a 34% increase in participation, from 53 to 71.

⁵⁹ 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 from 28,668 kWh/year to 18,008 kWh/year (37%).

⁶⁰ On the rebate application form for the Purchase component 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), the implementation vendor has calculated that 43% 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 Methodologies section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2021 | 2022 | Program Total (2021-2022) |
|---|--|--------|--------|---------------------------|
| | Annual Percent Toward Planned Savings (Net) | 13.1% | 28.3% | 23.1% |
| | Avg. Savings per Participant (Gross) | 254 | 289 | 281 |
| | Avg. Savings per Participant (Net) | 214 | 237 | 232 |
| | | | | |
| Installed Summer Demand Reduction (kW) | Total Gross Demand Reduction ⁶¹ | 4.6 | 9.0 | 13.7 |
| | Realization Rate | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | 4.6 | 9.0 | 13.7 |
| | Net-to-Gross Ratio ⁶⁰ | 95% | 95% | 95% |
| | Net-to-Gross Adjustment | -0.2 | -0.5 | -0.7 |
| | Net Adjusted Demand Reduction | 4.4 | 8.6 | 13.0 |
| | Planned Demand (Net) | 12.6 | 24.3 | 36.9 |
| | Annual % Toward Planned Demand (Net) | 34.9% | 35.3% | 35.2% |
| | Avg. Peak Demand per Participant (Gross) | 0.07 | 0.03 | 0.04 |
| | Avg. Demand per Participant (Net) | 0.06 | 0.03 | 0.04 |
| | | | | |
| Installed Winter Demand Reduction (kW) | Total Gross Demand Reduction ⁶² | 1.2 | 2.2 | 3.4 |
| | Realization Rate | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | 1.2 | 2.2 | 3.4 |
| | Net-to-Gross Ratio ⁶⁰ | 95% | 95% | 95% |
| | Net-to-Gross Adjustment | -0.1 | -0.1 | -0.2 |
| | Net Adjusted Demand Reduction | 1.1 | 2.1 | 3.2 |
| | Planned Demand (Net) | 30.6 | 58.9 | 89.5 |
| | Annual % Toward Planned Demand (Net) | 3.66% | 3.61% | 3.63% |
| | Avg. Peak Demand per Participant (Gross) | 0.02 | 0.01 | 0.01 |
| | Avg. Demand per Participant (Net) | 0.02 | 0.01 | 0.01 |
| | | | | |
| Program Performance | Cum. Annual \$Admin. per Participant (Gross) | \$13 | \$9 | \$9 |
| | Cum. Annual \$Admin. per kWh/year (Gross) | \$0.05 | \$0.03 | \$0.03 |
| | Cum. Annual \$Admin. per kW (Gross) | \$194 | \$221 | \$221 |
| | Cum. Annual \$EM&V per Total Costs (\$) | 10.5% | 14.1% | 14.1% |
| | Cum. Annual \$Rebate per Participant (Gross) | \$61 | \$69 | \$69 |

⁶¹ 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 from 0 to 4.6 kW.

⁶² 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 from 0 to 1.2 kW.



2.4.3.3 Additional Virginia program data

Figure 2-18 through Figure 2-19 show the program's participation and gross annualized energy savings by measure type for Virginia. Other detailed program participation and savings at the measure level are provided in Appendix O.4.3.

Note that participation is a count of new customers in the "All Measures" category. The counts by specific measure names represent the number of participants who installed measures in that year, regardless of whether they participated in the program in previous years. This reporting metric differs from the "participation count" reported in Table 2-11 and Table 2-12, where a participant is counted at the time of the first rebate. Subsequent rebates are not counted toward participation, although the savings resulting from the additional rebates are accumulated.

In 2022, the Smart Thermostat Purchase component increased participation by 48% over 2021. Almost three times as many customers participated in the Purchase component compared to the WeatherSmart component. The number of participants enrolled in WeatherSmart in 2022 increased by approximately one-third over the previous year.



Figure 2-18. Virginia Residential Smart Thermostat Purchase and WeatherSmartSM participation by measure and year

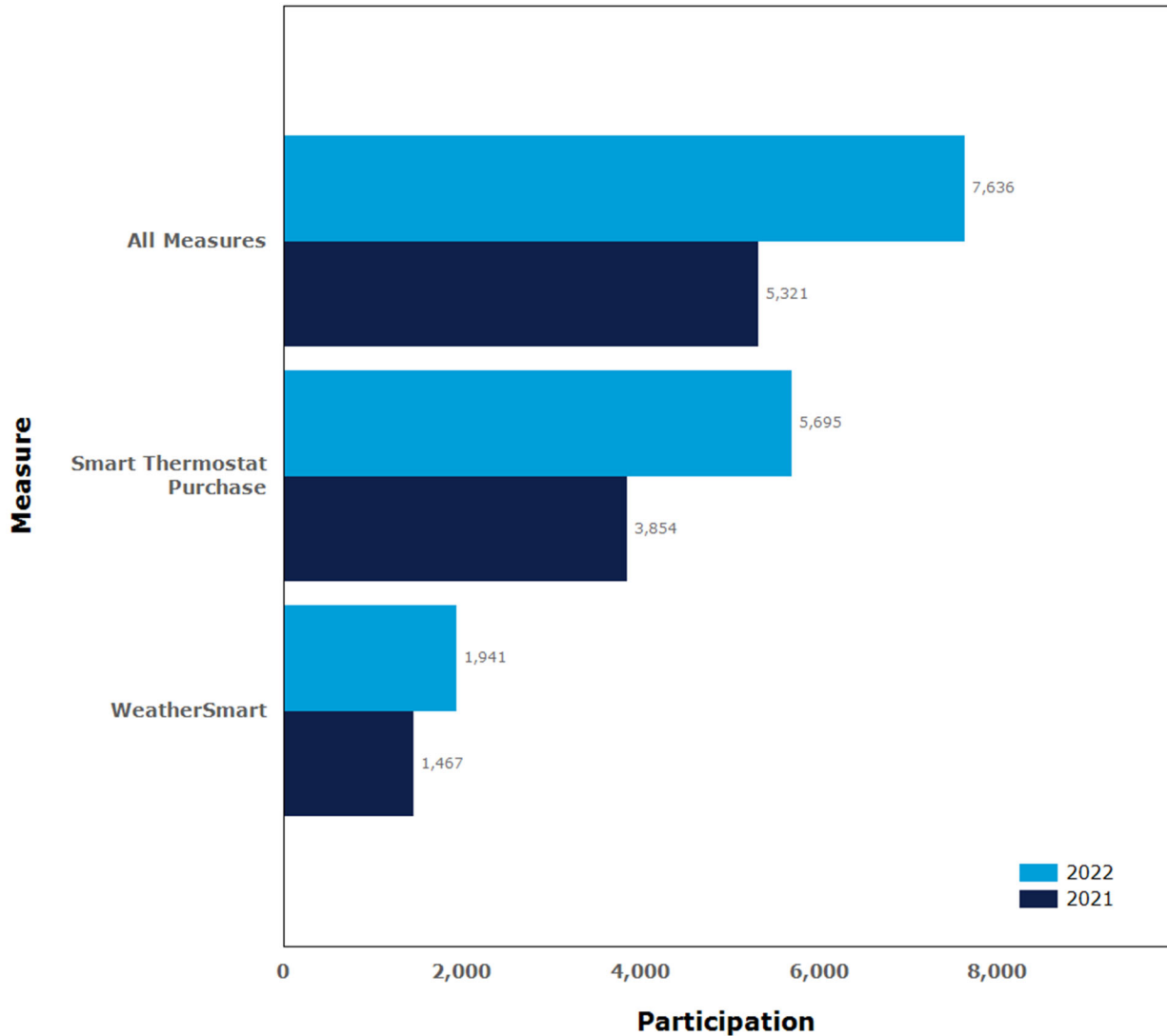
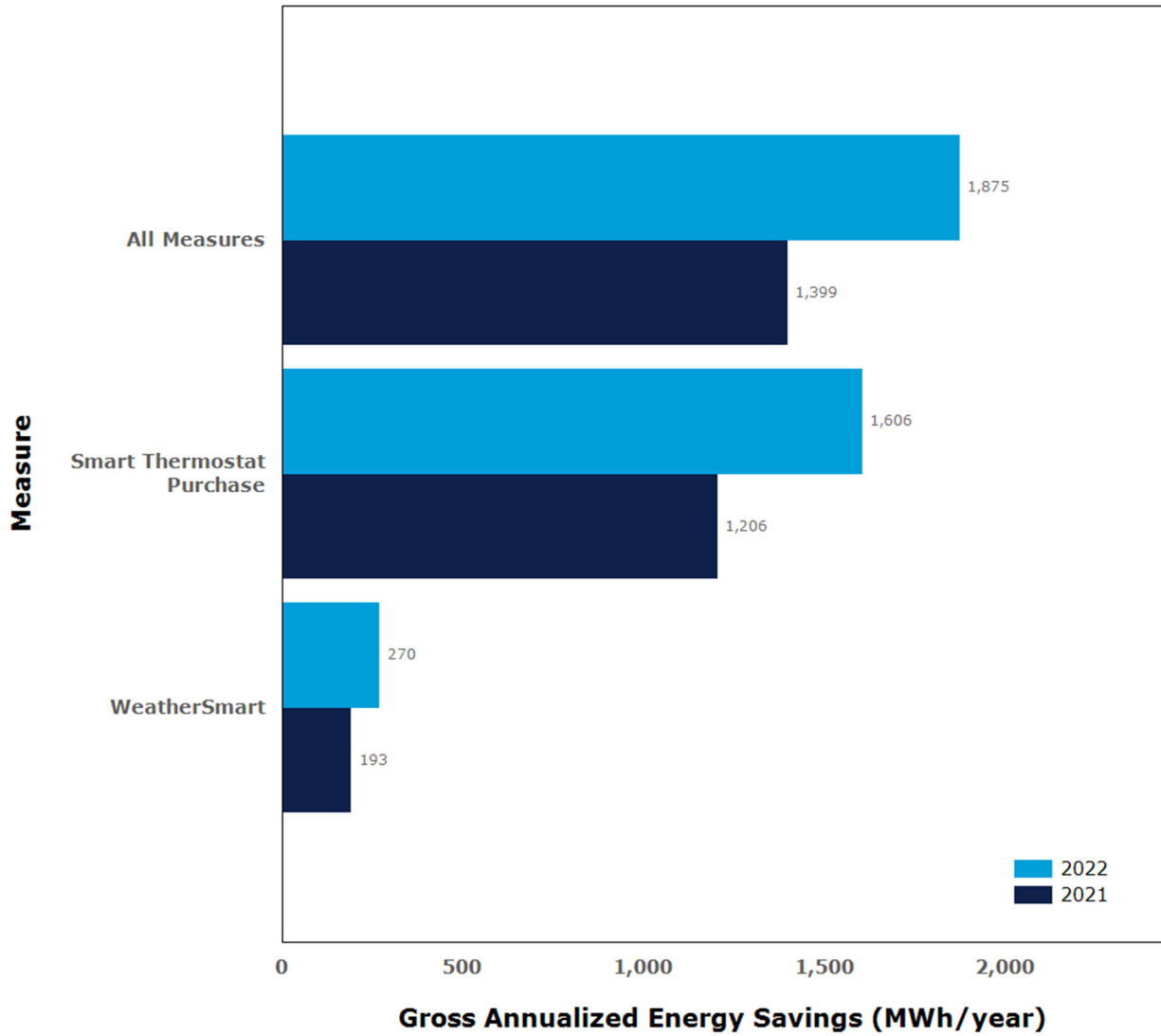




Figure 2-19. Virginia Residential Smart Thermostat Purchase and WeatherSmart Program gross annualized energy savings by measure and year (MWh/year)





2.4.3.4 Additional North Carolina program data

Figure 2-20 and Figure 2-21 show the program's participation and gross annualized energy savings by measure type for North Carolina. Other detailed program participation and savings at the measure level are provided in Appendix P.3.3.

Note that participation is a count of new customers in the "All Measures" category. The counts by specific measure names represent the number of participants who installed measures in that year, regardless of whether they participated in the program in previous years. This reporting metric differs from the "participation count" reported in Table 2-11 and Table 2-12, where a participant is counted at the time of the first rebate. Subsequent rebates are not counted toward participation, although the savings resulting from the additional rebates are accumulated.

Participation in the Smart Thermostat Purchase and WeatherSmart program increased overall in 2022 when compared to 2021. Participation in the WeatherSmart component doubled, and participation in the Purchase component increased almost five-fold. Gross annualized energy savings for the combined Purchase and WeatherSmart program followed a similar trajectory, increasing by over 300% this year.



Figure 2-20. North Carolina Residential Smart Thermostat Purchase and WeatherSmart participation by measure and year

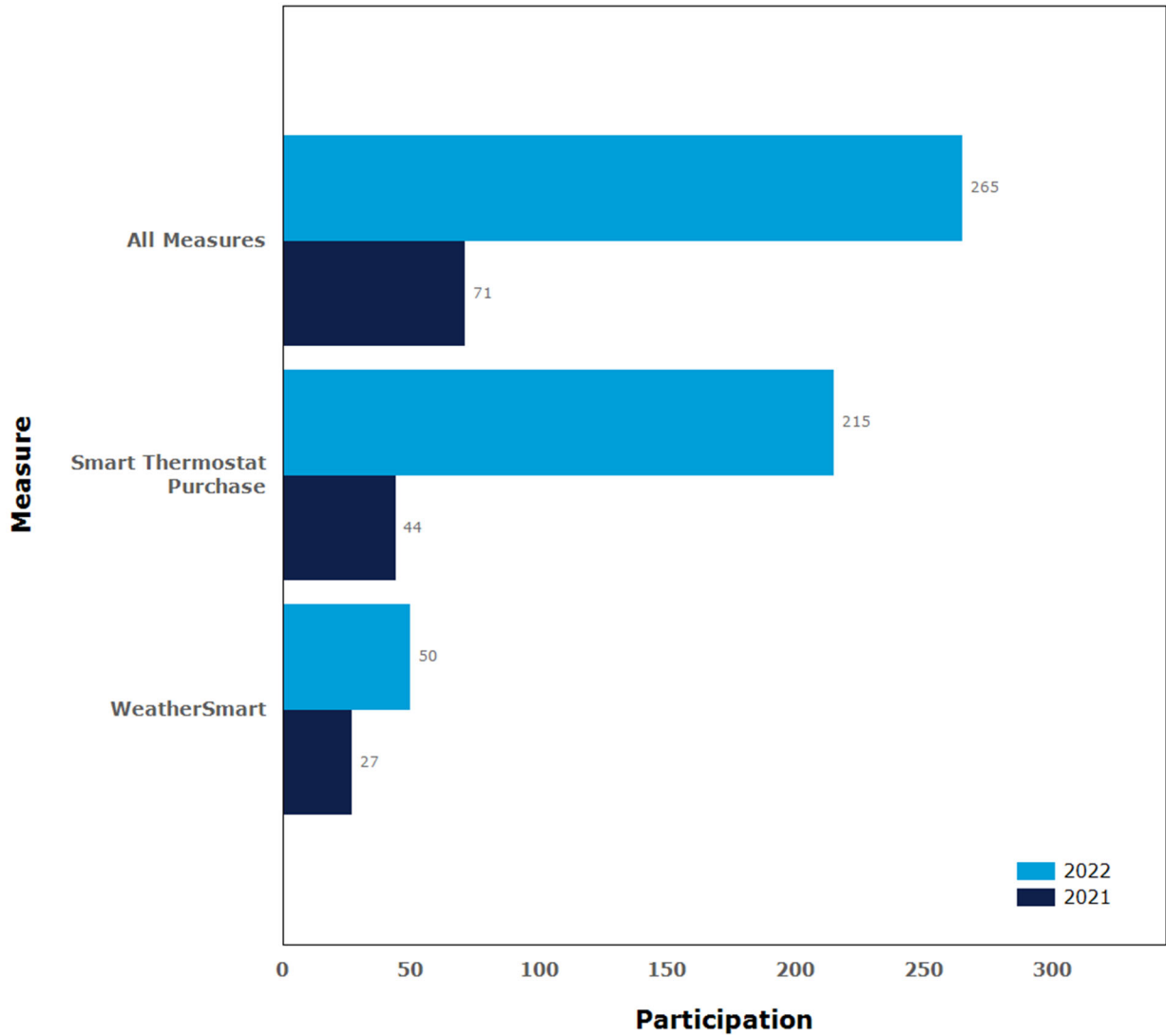
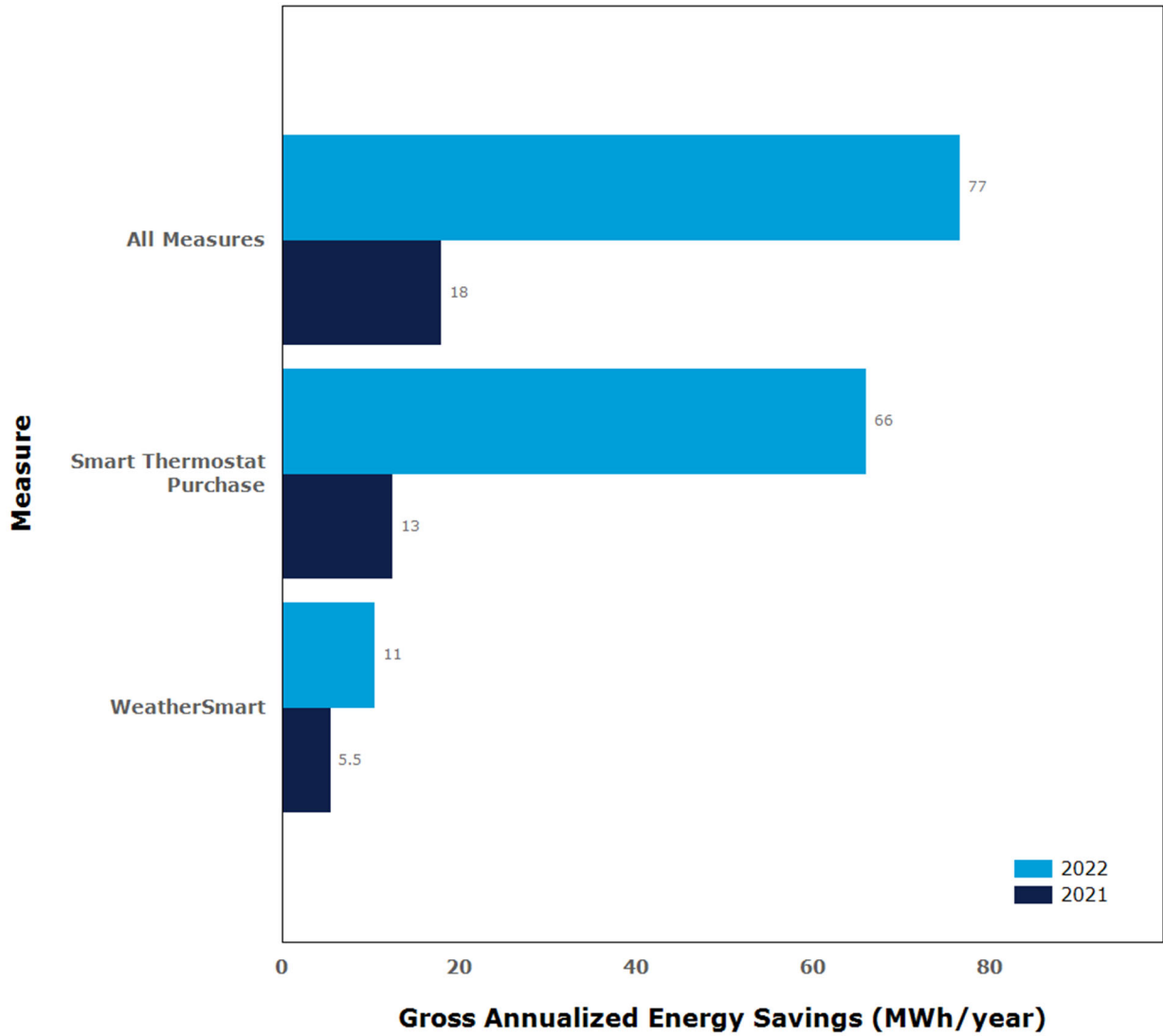




Figure 2-21. North Carolina Residential Smart Thermostat Purchase and WeatherSmart gross annualized energy savings by measure and year (MWh/year)





2.5 Residential Smart Home Program – Virginia and North Carolina

2.5.1 Program description

The Smart Home program connects residential customers with smart home technology to make their homes more convenient, personalized and energy efficient. In this Program, smart home technologies are bundled together in a convenient Smart Home kit, so that the home benefits from a fully integrated set of compatible smart products.



Program participants must be Dominion Energy residential customers living in single-family detached or single-family attached residences (e.g., townhomes) in Virginia. 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:

- Smart plugs
- Smart home hubs with entry/motion sensors
- Connected 9.5W ENERGY STAR LEDs
- Smart thermostats with voice control and temperature/humidity sensors
- Smart home energy monitors (with solar photovoltaic options)

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, 2022.⁶³ 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, 2022.⁶⁴ In 2022, participation for this program was low with both the Virginia and North Carolina programs achieving less than 1% of their planned participation levels.

2.5.2 Methods for the current reporting period

DNV developed an EM&V Plan for this Program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 2-13 outlines Dominion Energy's initial planning assumptions that were used to design the Program. DNV uses the planned NTG factor in its net savings calculations until it can be verified through EM&V.

⁶³ Virginia Residential Smart Home program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/home-energy-assessment/smart-home-terms-conditions.pdf> Accessed February 21, 2023.

⁶⁴ North Carolina Residential Smart Home Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/north-carolina---electric/save-energy/home-energy-assessment/res-smart-home-terms-conditions-nce.pdf>. Accessed February 21, 2023.



Table 2-13. Residential Smart Home Program planning assumptions system-wide

| Assumption | Description |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 85% |
| Measure Life (years) | 10.35 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 1391 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.341 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.208 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.290 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.177 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 1182 |
| Average Rebate (US\$) per Participant | 147 |

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 annually and cumulatively from Program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.5 provides detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 2-14. Virginia Residential Smart Home Program performance indicators (2021–2022)⁶⁵

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|--------------------------------------|---------------------------------|-------|------------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | 425 | 30,096 | 30,521 |
| Total Costs (\$) | Total ⁶⁶ | 9,058 | 720,794 | 729,852 |
| | Planned | 0 | 2,053,050 | 2,053,050 |
| | Variance | 9,058 | -1,332,256 | -1,323,198 |
| | Annual % of Planned | N/A | 35% | 36% |
| Participants | Total (Gross) | 0 | 15 | 15 |
| | Planned (Gross) | 0 | 4,826 | 4,826 |
| | Variance | 0 | -4,811 | -4,811 |
| | Annual % of Planned (Gross) | N/A | 0.3% | 0.3% |

⁶⁵ The sum of the individual annual values may differ from the total value due to rounding.

⁶⁶ 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 | Program total (2021–2022) |
|---|--|------|-----------|---------------------------|
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 8,087 | 8,087 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 8,087 | 8,087 |
| | Net-to-Gross Ratio ⁶⁷ | N/A | 85% | 85% |
| | Net-to-Gross Adjustment | 0 | -1,213 | -1,213 |
| | Net Adjusted Savings | 0 | 6,874 | 6,874 |
| | Planned Savings (Net) | 0 | 5,706,021 | 5,706,021 |
| | Annual % Toward Planned Savings (Net) | N/A | 0.12% | 0.12% |
| | Avg. Savings per Participant (Gross) | N/A | 539 | 539 |
| | Avg. Savings per Participant (Net) | N/A | 458 | 458 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0 | 0.5 | 0.5 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Demand | 0 | 0.5 | 0.5 |
| | Net-to-Gross Ratio ⁶⁸ | N/A | 85% | 85% |
| | Net-to-Gross Adjustment | 0 | -0.1 | -0.1 |
| | Net Adjusted Demand | 0 | 0.4 | 0.4 |
| | Planned Demand (Net) | 0 | 1,398.4 | 1,398.4 |
| | Annual % Toward Planned Demand (Net) | N/A | 0.03% | 0.03% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.04 | 0.04 |
| | Avg. Demand per Participant (Net) | N/A | 0.03 | 0.03 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0 | 2.9 | 2.9 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Demand | 0 | 2.9 | 2.9 |
| | Net-to-Gross Ratio ⁶⁹ | N/A | 85% | 85% |
| | Net-to-Gross Adjustment | 0 | -0.4 | -0.4 |
| | Net Adjusted Demand | 0 | 2.4 | 2.4 |
| | Planned Demand (Net) | 0 | 854.2 | 854.2 |
| | Annual % Toward Planned Demand (Net) | N/A | 0.29% | 0.29% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.2 | 0.2 |

⁶⁷ 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 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.

⁶⁸ Ibid.

⁶⁹ Ibid.



| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|----------------------------|---|-------|--------|---------------------------|
| | Avg. Demand per Participant (Net) | N/A | 0.2 | 0.2 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | 2,035 | 2,035 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | 4 | 4 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | 57,960 | 57,960 |
| | Cml Annual \$EM&V per Total Costs (\$) | 49.0% | 6.8% | 6.8% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | 57 | 57 |

2.5.3.2 Key North Carolina program data

Table 2-15 provides performance indicator data annually and cumulatively from Program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix P.4 provides detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 2-15. North Carolina Residential Smart Home Program performance indicators (2022)⁷⁰

| Category | Item | 2022 | Program total (2022) |
|---|---------------------------------|---------|----------------------|
| Operations and Management Costs (\$) | | | |
| | | | |
| | | | |
| | Indirect Other (Administrative) | 689 | 689 |
| Total Costs (\$) | Total ⁷¹ | 16,505 | 16,505 |
| | Planned | 52,623 | 52,623 |
| | Variance | -36,119 | -36,119 |
| | Annual % of Planned | 31% | 31% |
| Participants | Total (Gross) | 1 | 1 |
| | Planned (Gross) | 308 | 308 |
| | Variance | -307 | -307 |
| | Annual % of Planned (Gross) | 0.3% | 0.3% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 383 | 383 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Savings | 383 | 383 |

⁷⁰ The sum of the individual annual values may differ from the total value due to rounding.

⁷¹ 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 | Program total (2022) |
|---|---|---------|----------------------|
| | Net-to-Gross Ratio ⁷² | 85% | 85% |
| | Net-to-Gross Adjustment | -58 | -58 |
| | Net Adjusted Savings | 326 | 326 |
| | Planned Savings (Net) | 364,164 | 364,164 |
| | Annual % Toward Planned Savings (Net) | 0.09% | 0.09% |
| | Avg. Savings per Participant (Gross) | 383 | 383 |
| | Avg. Savings per Participant (Net) | 326 | 326 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.03 | 0.03 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Demand | 0.03 | 0.03 |
| | Net-to-Gross Ratio ⁷³ | 85% | 85% |
| | Net-to-Gross Adjustment | -0.0045 | -0.0045 |
| | Net Adjusted Demand | 0.0255 | 0.0255 |
| | Planned Demand (Net) | 89.3 | 89.3 |
| | Annual % Toward Planned Demand (Net) | 0.03% | 0.03% |
| | Avg. Peak Demand per Participant (Gross) | 0.03 | 0.03 |
| | Avg. Demand per Participant (Net) | 0.03 | 0.03 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.2 | 0.2 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Demand | 0.2 | 0.2 |
| | Net-to-Gross Ratio ⁷⁴ | 85% | 85% |
| | Net-to-Gross Adjustment | -0.030 | -0.030 |
| | Net Adjusted Demand | 0.17 | 0.17 |
| | Planned Demand (Net) | 54.5 | 54.5 |
| | Annual % Toward Planned Demand (Net) | 0.3% | 0.3% |
| | Avg. Peak Demand per Participant (Gross) | 0.2 | 0.2 |
| | Avg. Demand per Participant (Net) | 0.2 | 0.2 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | 689 | 689 |
| | Cml Annual \$Admin. per kWh/year (Gross) | 2 | 2 |
| | Cml Annual \$Admin. per kW (Gross) | 19,725 | 19,725 |

⁷² 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 year-end 2022), the implementation vendor has calculated that 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.

⁷³ Ibid.

⁷⁴ Ibid.



| Category | Item | 2022 | Program total (2022) |
|----------|---|------|----------------------|
| | Cml Annual \$EM&V per Total Costs (\$) | 9.1% | 9.1% |
| | Cml Annual \$Rebate per Participant (Gross) | 25 | 25 |

2.5.3.3 Additional Virginia program data

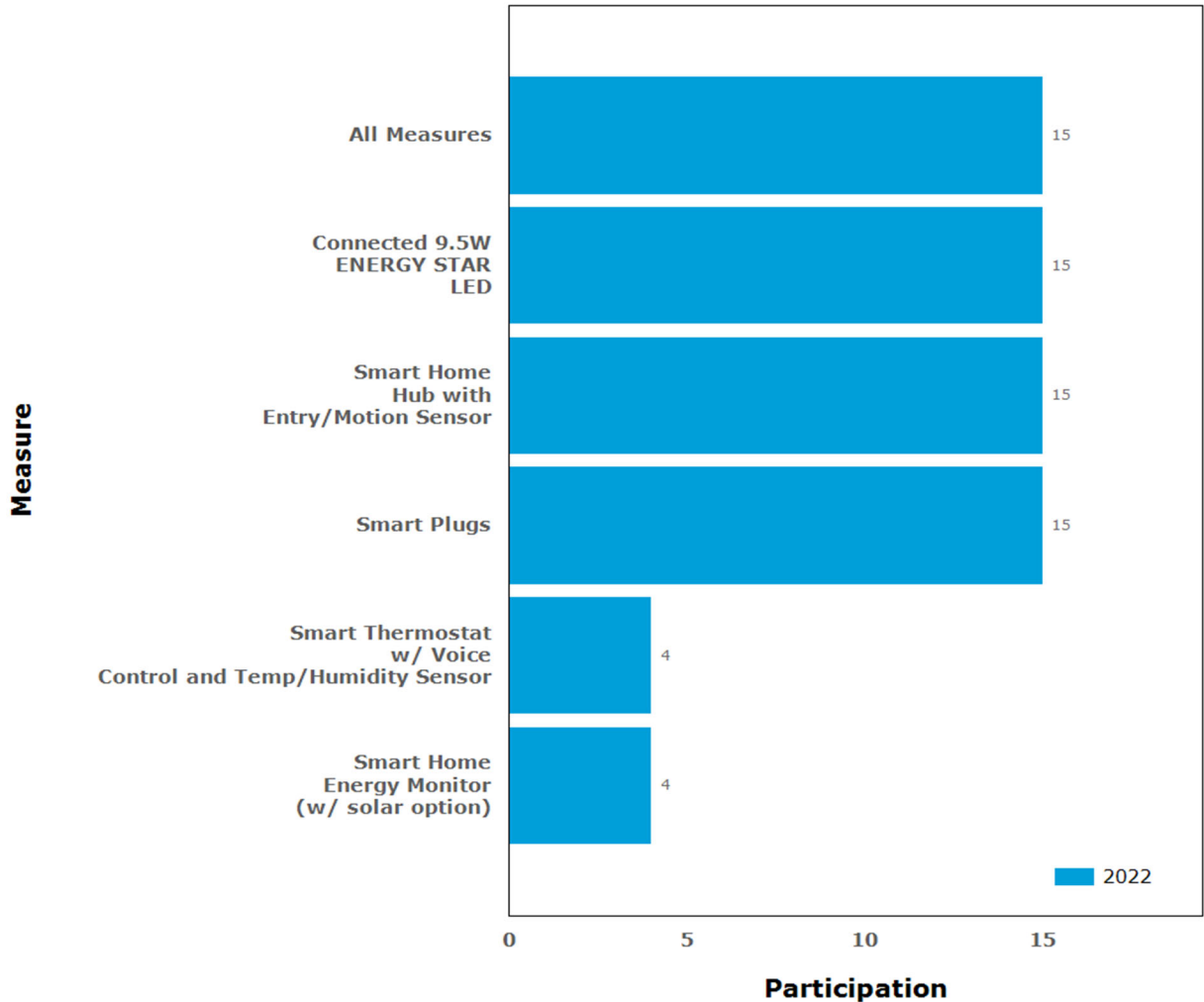
Figure 2-22 and Figure 2-23 show the Program’s participation and gross annualized energy savings, respectively, by measure type and year in Virginia. Other detailed Program participation and savings at the measure level appear in Appendix O.5.

Note that in these charts, participation is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the Program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Figure 2-22. shows the distribution of measures for the 15 Program participants in 2022. The most frequently adopted measures were ENERGY STAR LED, smart home hub with entry motion sensor, and smart plugs which were adopted by 85% of Program participants. Smart thermostat and energy monitor were the second most installed measures, adopted by 15% of participants.



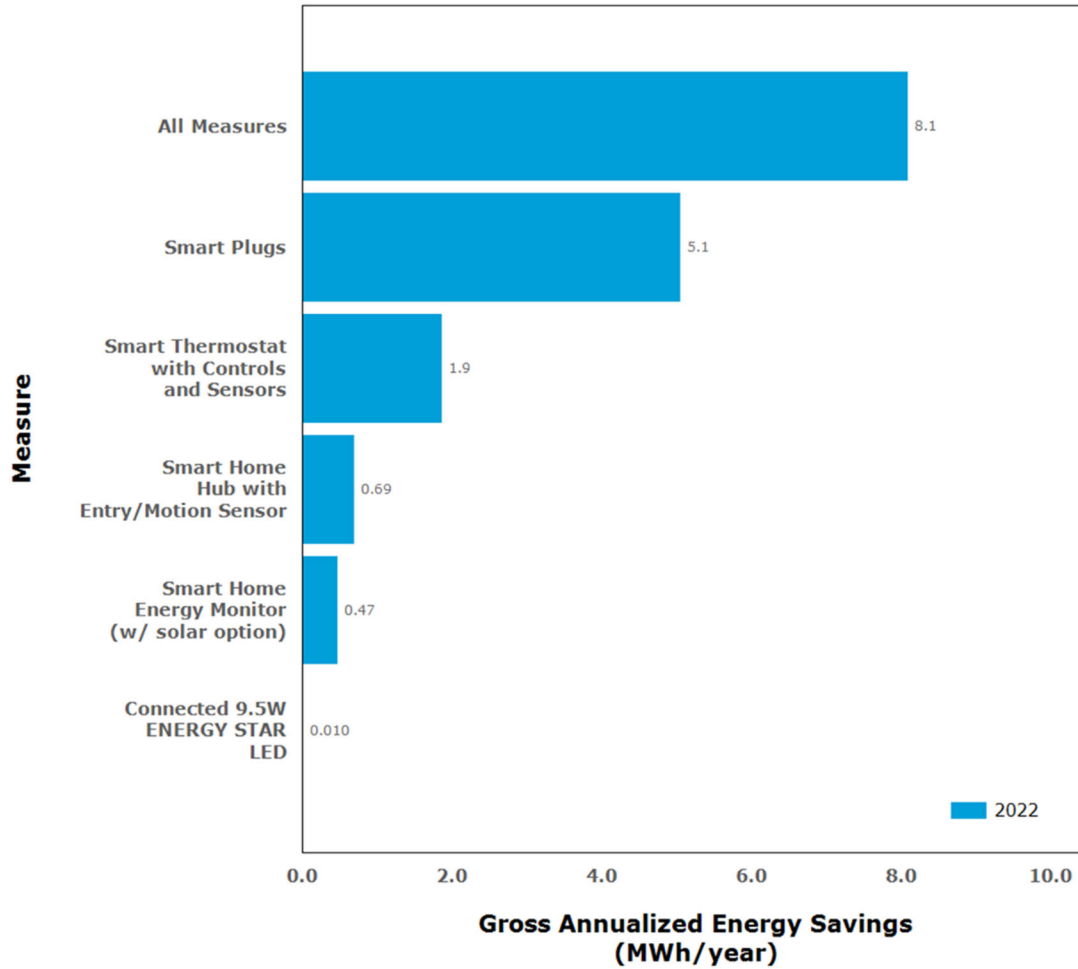
Figure 2-22. Virginia Residential Smart Home Program participation by measure and year



Smart plugs measure accounted for the most gross annualized energy savings in 2022. They accounted for 63% of the total gross annualized energy saved by the program, as Figure 2-23 shows. While program participants installed the ENERGY STAR LED and smart home hub with motion sensor measures as frequently as they did the smart plugs, the chart shows that their savings contribution to the program was much less than the smart plugs. The smart thermostat measure was the second largest contributor of gross annualized energy savings to the program in 2022, accounting for 23% of the total energy saved, despite being installed by fewer participants than was the case for the LED or smart home with motion sensor measures.



Figure 2-23. Virginia Residential Smart Home Program gross annualized energy savings by measure and year (MWh/year)





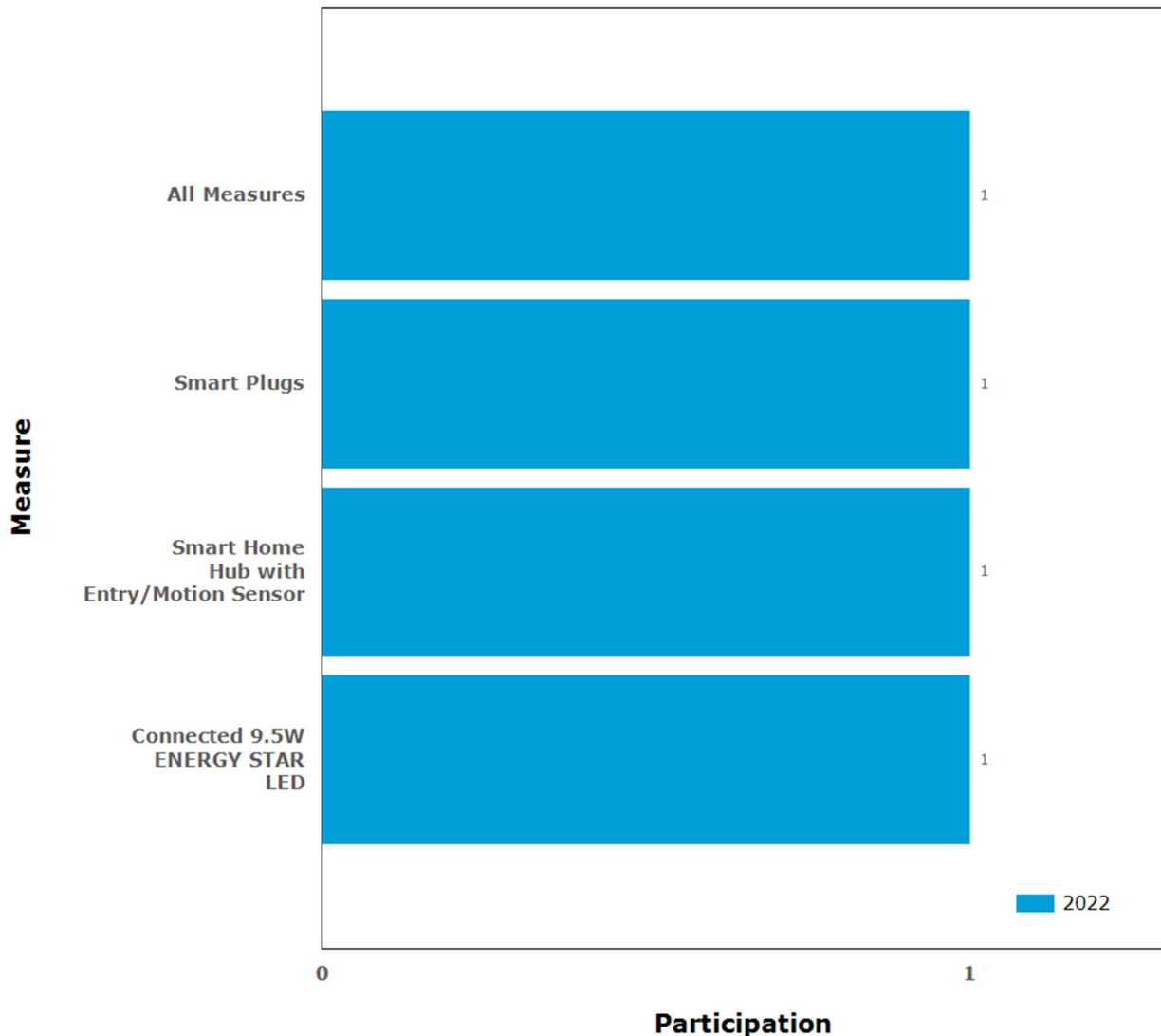
2.5.3.4 Additional North Carolina program data

Figure 2-24 and Figure 2-25 show the program’s participation and gross annualized energy savings, respectively, by measure type and year. Other detailed program participation and savings at the measure level are provided in Appendix P.4.

Note that in these charts, participation is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

In 2022, there was one participant in North Carolina. This participant installed three measures through this program: smart plugs, a smart home hub with motion sensor, and ENERGY STAR LEDs as Figure 2-24 shows.

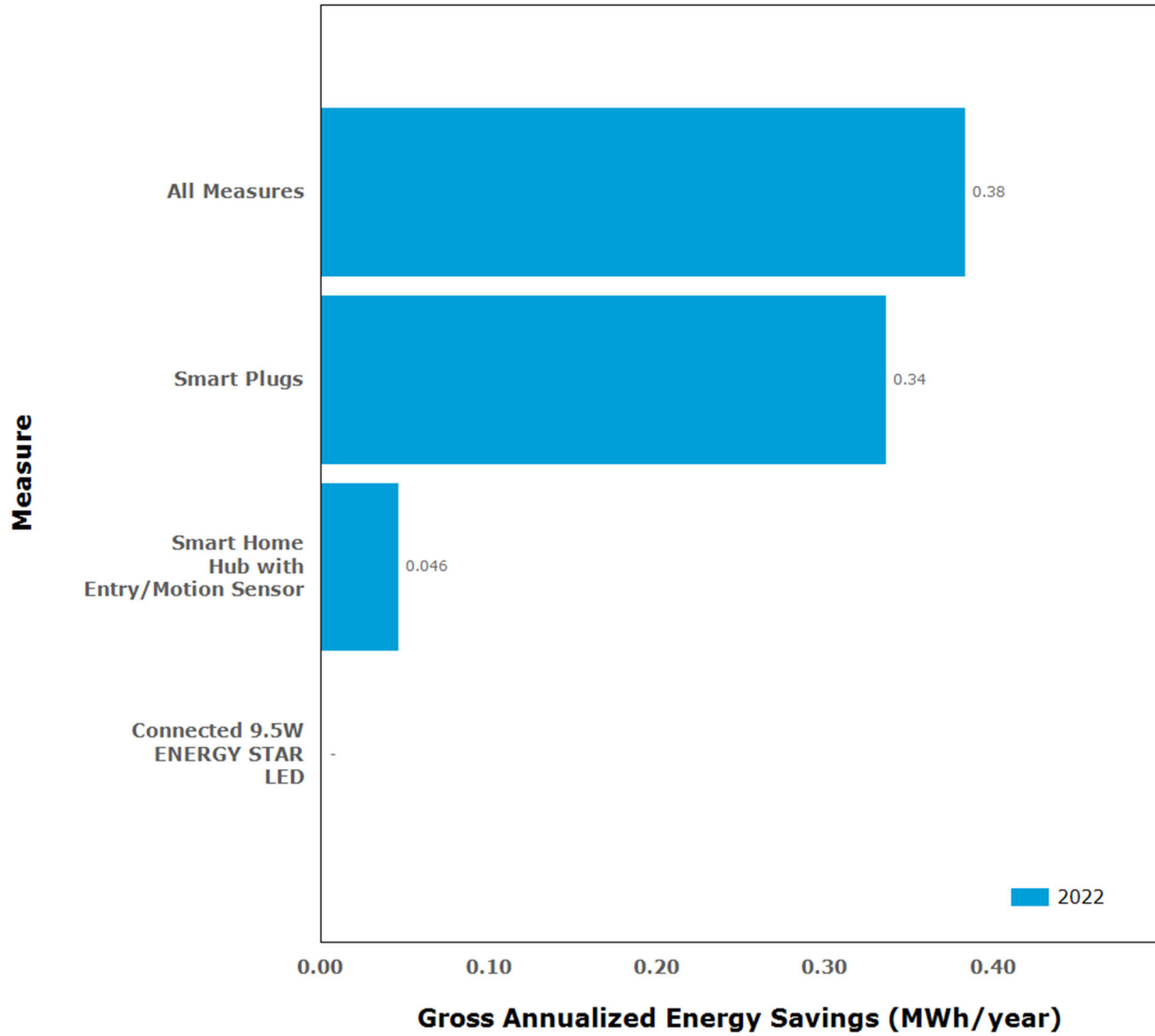
Figure 2-24. North Carolina Residential Smart Home Program participation by measure and year





Smart plugs measure accounted for the most gross annualized energy savings for the Program in 2022, representing 89% of the total Program energy saved, as Figure 2-25 shows. The chart also shows that despite being installed as frequently as the smart plugs in 2022, the ENERGY STAR LED and smart home hub with motion sensor measures made only small contributions to total Program gross annualized energy savings in 2022.

Figure 2-25. North Carolina Residential Smart Home Program gross annualized energy savings by measure and year (MWh/year)





2.6 Residential Water Savings Program – Virginia and North Carolina

2.6.1 Program description

The Residential Water Energy Savings Program provides owners and occupants of single-family homes and townhomes the means to save water-related energy usage, plus earn rebates for making the switch to use ENERGY STAR® rated appliances. The program includes two types of water energy savings rebates: Heat Pump Water Heater Rebates and Pool Pump Rebates. Residential customers living in single-family residences or townhomes with Dominion Energy electric service are eligible for this program. Customers must have electric heating and cooling with an air source heat pump or geothermal heat pump and must purchase and install a heat pump water heater or variable speed pool pump that meets or exceeds ENERGY STAR performance requirements. Customers are not considered to have fully participated in the program until a completed application form is processed and a rebate is issued. Customer must submit a rebate application for the program within 45 days of the installation.



The eligible improvements are primarily energy efficiency measures that impact electricity consumption, and include:

- Variable speed pool pump
- Heat pump water heater replacement

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 of January 1, 2022, through December 31, 2026. The program officially launched on January 1, 2022.⁷⁵ The North Carolina Utilities Commission approved this program on March 18, 2022 (Docket No. E-22, SUB 620). The program officially launched on March 18, 2022.⁷⁶

2.6.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 2-16 outlines Dominion Energy's initial program planning assumptions that were used to design the program. DNV uses the planned NTG factor in its net savings calculations until it can be verified through EM&V.

⁷⁵ Virginia Residential Water Saving Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/residential-water-energy--savings-program-terms-conditions.pdf>. Accessed February 24, 2023.

⁷⁶ North Carolina Residential Water Saving Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/north-carolina---electric/save-energy/nc-heat-terms-conditions.pdf>. Accessed February 24, 2023.



Table 2-16. Residential Water Saving Program planning assumptions system-wide

| Assumption | Description |
|---|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 11.59 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 2,187 |
| Gross Average Coincident Peak Demand Reduction per Participant (kW) | 1.1 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 1,968.3 |
| Net Average Coincident Peak Demand Reduction per Participant (kW) | 0.99 |
| Average Rebate (US\$) per Participant | \$356 |

2.6.3 Assessment of program progress toward plan

The next section describes 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 annually and cumulatively from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.6 provides detailed program indicators by year and month and program performance by measure and a comparison of program savings with usage by rate schedule, respectively. Appendix Q provides cumulative gross and net savings.

Table 2-17. Virginia Residential Water Savings Program performance indicators (2021–2022)⁷⁷

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|--------------------------------------|---------------------------------|----------|------------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$478 | \$10,722 | \$11,200 |
| Total Costs (\$) | Total ⁴ | \$10,197 | \$256,790 | \$266,986 |
| | Planned | \$0 | \$794,394 | \$794,394 |
| | Variance | \$10,197 | -\$537,605 | -\$527,408 |
| | Annual % of Planned | N/A | 32% | 34% |
| Participants | Total (Gross) | 0 | 62 | 62 |
| | Planned (Gross) | 0 | 940 | 940 |
| | Variance | 0 | -878 | -878 |
| | Annual % of Planned (Gross) | N/A | 7% | 7% |
| Installed Energy | Total Gross Deemed Savings | 0 | 97,694 | 97,694 |
| | Realization Rate | N/A | 100% | 100% |

⁷⁷ The sum of the individual annual values may differ from the total value due to rounding.



| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|---|-------|-----------|---------------------------|
| Savings (kWh/year) | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 97,694 | 97,694 |
| | Net-to-Gross Ratio ⁷⁸ | N/A | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | -9,769 | -9,769 |
| | Net Adjusted Savings | 0 | 87,925 | 87,925 |
| | Planned Savings (Net) | 0 | 1,850,202 | 1,850,202 |
| | Annual % Toward Planned Savings (Net) | N/A | 4.75% | 4.75% |
| | Avg. Savings per Participant (Gross) | N/A | 1,576 | 1,576 |
| | Avg. Savings per Participant (Net) | N/A | 1,418 | 1,418 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 00 | 12.3 | 12.3 |
| | Realization Rate | 0 N/A | 100% | 100% |
| | Realization Rate Adjustment | 00 | 0 | 0 |
| | Adjusted Gross Demand | 00 | 12.3 | 12.3 |
| | Net-to-Gross Ratio ⁷⁸ | 0 N/A | 90% | 90% |
| | Net-to-Gross Adjustment | 00 | -1.2 | -1.2 |
| | Net Adjusted Demand | 00 | 11.0 | 11.0 |
| | Planned Demand (Net) | 00 | 440.6 | 440.6 |
| | Annual % Toward Planned Demand (Net) | N/A | 2.5% | 2.5% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.2 | 0.2 |
| | Avg. Demand per Participant (Net) | N/A | 0.2 | 0.2 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0 | 15.6 | 15.6 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Demand | 0 | 15.6 | 15.6 |
| | Net-to-Gross Ratio ⁷⁸ | N/A | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | -1.6 | -1.6 |
| | Net Adjusted Demand | 0 | 14.0 | 14.0 |
| | 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 | 0.3 | 0.3 |
| | Avg. Demand per Participant (Net) | N/A | 0.2 | 0.2 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$181 | \$181 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0 | \$0 |

⁷⁸ 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 79% 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|----------|---|-------|-------|---------------------------|
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$914 | \$914 |
| | Cml Annual \$EM&V per Total Costs (\$) | 45.6% | 8.4% | 8.4% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$307 | \$307 |

2.6.3.2 Key North Carolina program data

Table 2-18 provides performance indicator data annually and cumulatively in 2022. Shaded cells are considered extraordinarily sensitive information. Appendix P.5 provides detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative net savings.

Table 2-18. North Carolina Residential Water Savings Program performance indicators (2022)⁷⁹

| Category | Item | 2022 | Program total (2022) |
|---|----------------------------------|-----------|----------------------|
| Operations and Management Costs (\$) | | | |
| | | | |
| | | | |
| | Indirect Other (Administrative) | \$211 | \$211 |
| Total Costs (\$) | Total ⁸⁰ | \$5,048 | \$5,048 |
| | Planned | \$20,362 | \$20,362 |
| | Variance | -\$15,314 | -\$15,314 |
| | Annual % of Planned | 25% | 25% |
| Participants | Total (Gross) | 0 | 0 |
| | Planned (Gross) | 60 | 60 |
| | Variance | -60 | -60 |
| | Annual % of Planned (Gross) | 0% | 0% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 0 |
| | Realization Rate | N/A | N/A |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Savings | 0 | 0 |
| | Net-to-Gross Ratio ⁸¹ | N/A | N/A |

⁷⁹ The sum of the individual annual values may differ from the total value due to rounding.

⁸⁰ 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.

⁸¹ 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 79% 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2022 | Program total (2022) |
|---|---|---------|----------------------|
| | Net-to-Gross Adjustment | 0 | 0 |
| | Net Adjusted Savings | 0 | 0 |
| | Planned Savings (Net) | 118,098 | 118,098 |
| | Annual % Toward Planned Savings (Net) | 0% | 0% |
| | Avg. Savings per Participant (Gross) | N/A | N/A |
| | Avg. Savings per Participant (Net) | N/A | N/A |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0 | 0 |
| | Realization Rate | N/A | N/A |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Demand | 0 | 0 |
| | Net-to-Gross Ratio ⁸¹ | N/A | N/A |
| | Net-to-Gross Adjustment | 0 | 0 |
| | Net Adjusted Demand | 0 | 0 |
| | Planned Demand (Net) | 28.1 | 28.1 |
| | Annual % Toward Planned Demand (Net) | 0% | 0% |
| | Avg. Peak Demand per Participant (Gross) | N/A | N/A |
| | Avg. Demand per Participant (Net) | N/A | N/A |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0 | 0 |
| | Realization Rate | N/A | N/A |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Demand | 0 | 0 |
| | Net-to-Gross Ratio ⁸¹ | N/A | N/A |
| | Net-to-Gross Adjustment | 0 | 0 |
| | Net Adjusted Demand | 0 | 0 |
| | Planned Demand (Net) | 0 | 0 |
| | Annual % Toward Planned Demand (Net) | N/A | N/A |
| | Avg. Peak Demand per Participant (Gross) | N/A | N/A |
| | Avg. Demand per Participant (Net) | N/A | N/A |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | N/A |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | N/A |
| | Cml Annual \$Admin. per kW (Gross) | N/A | N/A |
| | Cml Annual \$EM&V per Total Costs (\$) | 10.1% | 10.1% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | N/A |



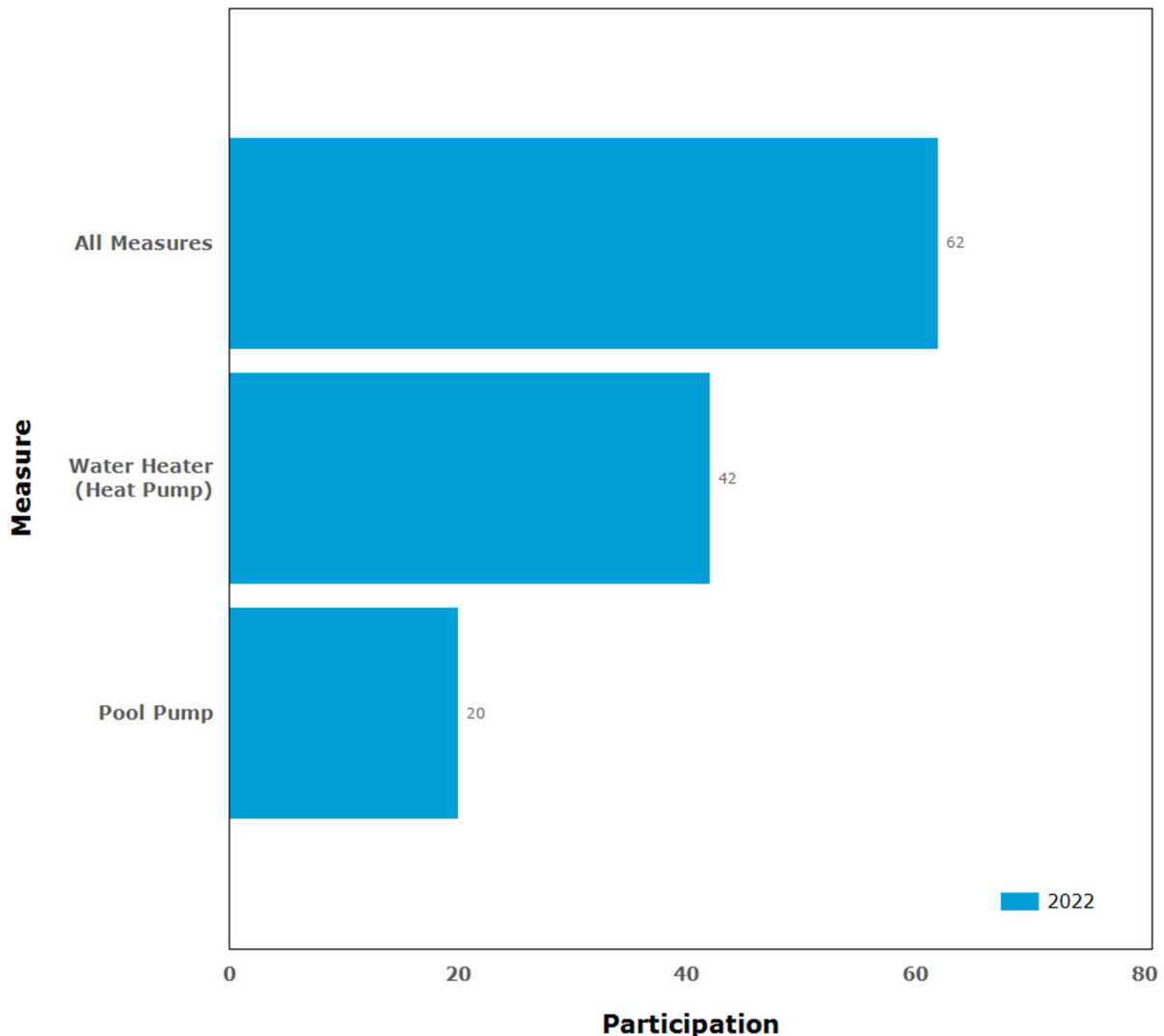
2.6.3.3 Additional Virginia program data

Figure 2-26 and Figure 2-27 show the program’s participation and gross annualized energy savings, respectively, by measure type and year in Virginia. Other detailed program participation and savings at the measure level are provided in Appendix O.6.

Note that in these charts, participation is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Figure 2-26 shows that a total of 62 participations for all measures in 2022. The most frequently adopted measure was heat pump water heater replacement which 68% of the participants adopted. The variable speed pool pump had 20 participants and accounted for 32% of program participants in 2022.

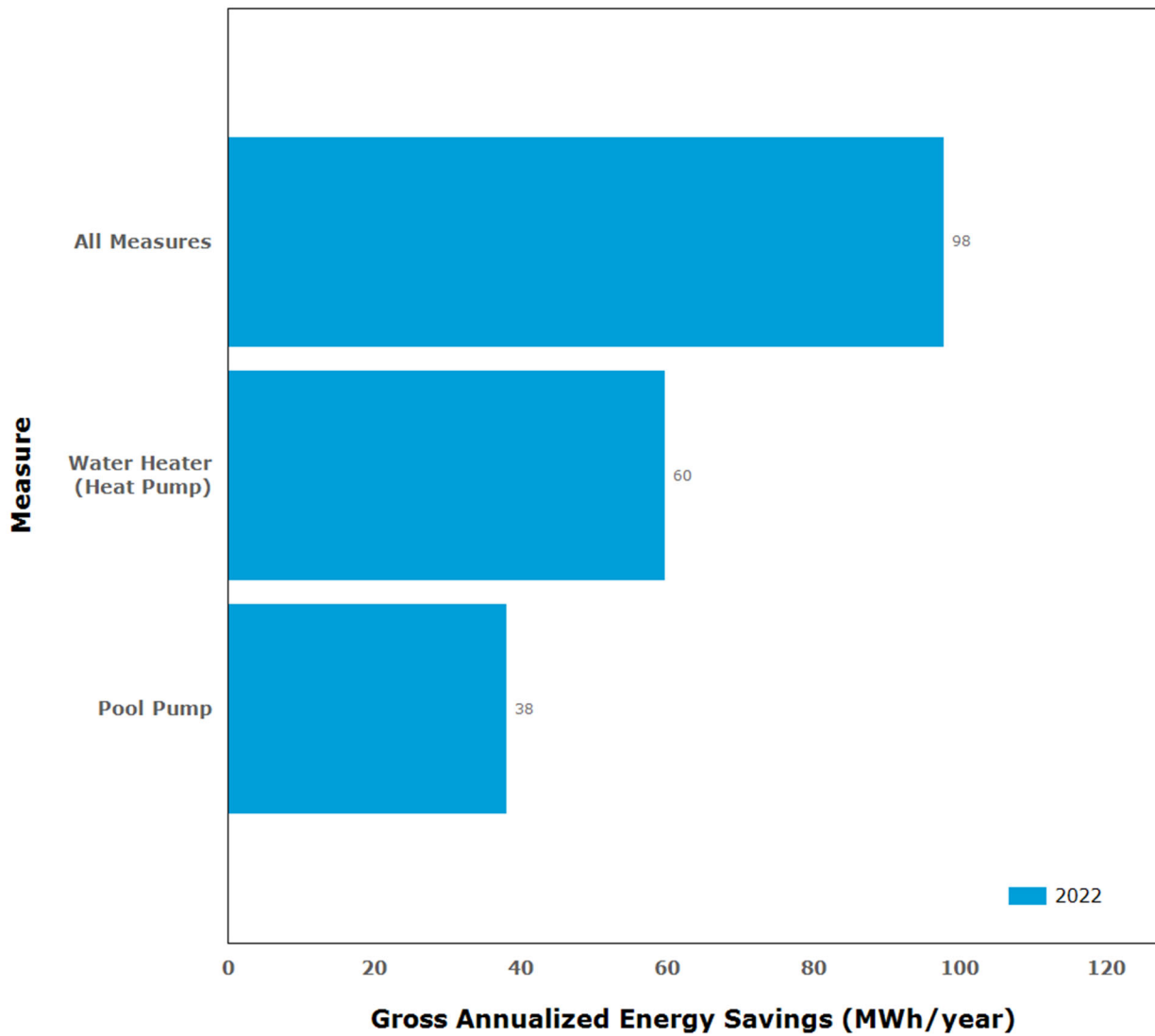
Figure 2-26. Virginia Residential Water Savings Program participation by measure and year





The heat pump water heater replacement measure accounted for the most gross annualized energy savings in 2022, representing 61% of the total program energy saved, as shown in Figure 2-27.

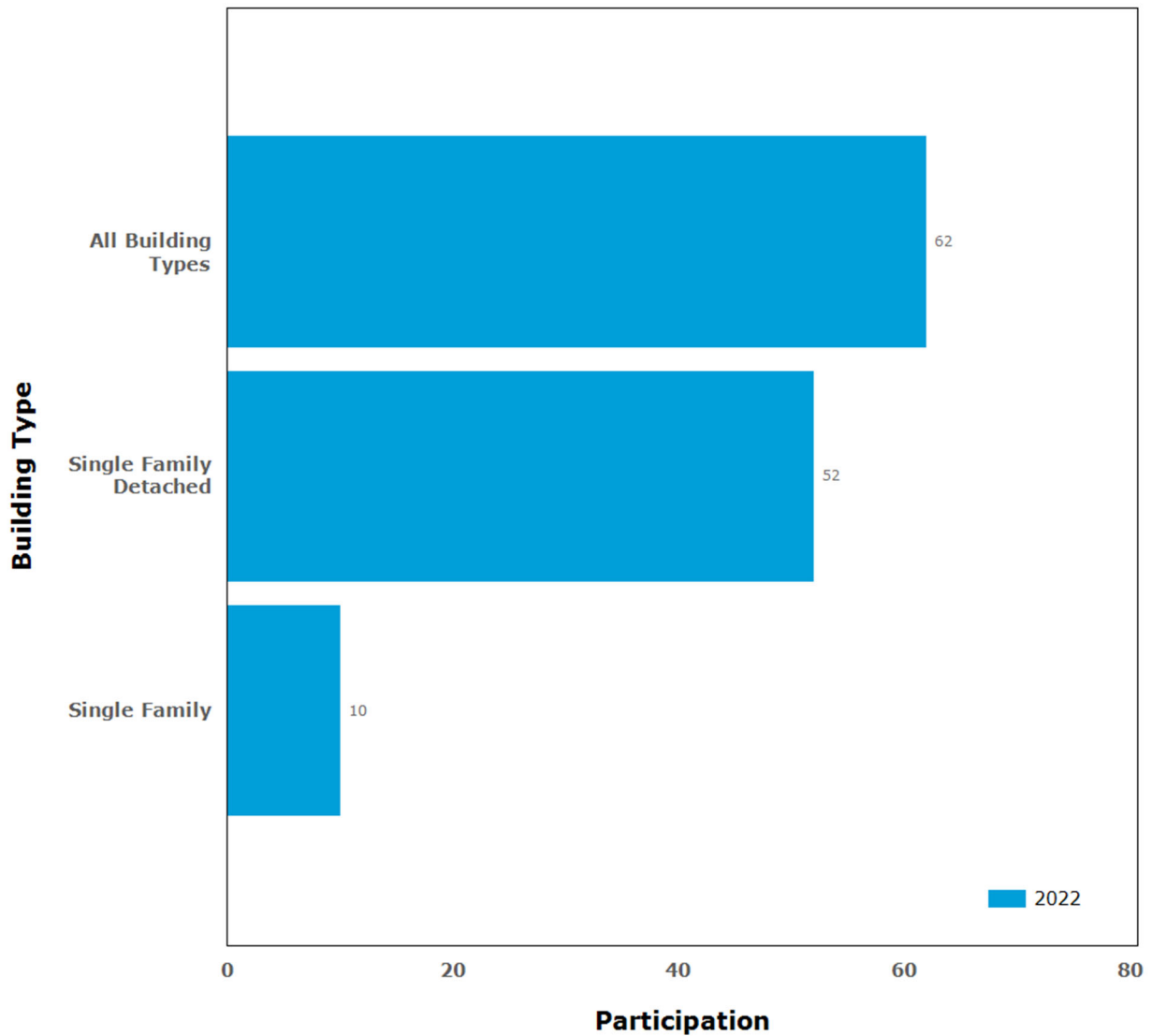
Figure 2-27. Virginia Residential Water Savings Program gross annualized energy savings by measure and year (MWh/year)





As shown in Figure 2-28, single family detached and other single family home types accounted for 84% and 16% respectively of the total building types in 2022.

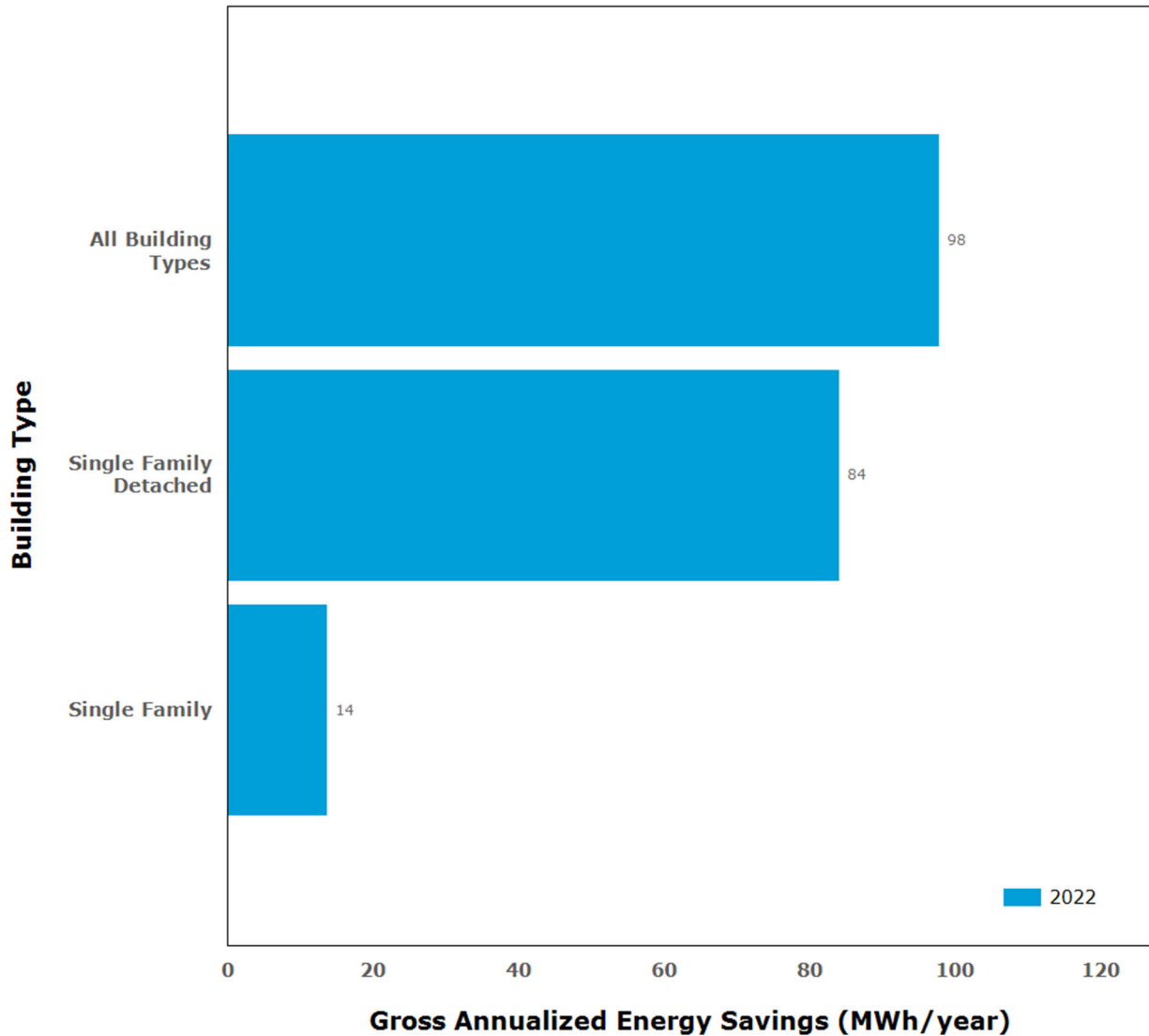
Figure 2-28. Virginia Residential Water Savings Program participation by building type and year





Single family detached building type accounted for the most gross annualized energy savings in 2022, representing 86% of the total energy saved, as shown in Figure 2-29.

Figure 2-29. Virginia Residential Water Savings Program gross annualized energy savings by building type and year (MWh/year)



2.6.3.4 Additional North Carolina program data

No North Carolina customers participated in the program in 2022.



3 ENERGY EFFICIENCY – RESIDENTIAL ENERGY SERVICES

3.1 Residential Appliance Recycling Program – Virginia and North Carolina

3.1.1 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 elicits



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 that is responsible for the electric bill, and be the owner of the refrigerator or freezer. Also, the refrigerator or freezer must be at least ten years old, between 10 and 32 cubic feet, in working condition, and in use.

Dominion Energy customers can recycle up to two units through the program. To participate in the program, customers must contact and apply through CLEAResult, the appliance recycling implementation contractor. 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, 2019.⁶³ The North Carolina Utilities Commission approved this program on November 13,

2019 (Docket No. E-22, SUB 569).

The first rebates through the program were approved in September 2019. The program then operated until March 16th, 2020, when it was suspended because of the COVID-19 pandemic. The program restarted on June 29, 2020. However, the program manager reported, in an interview with DNV, that economic conditions and the ongoing pandemic impacted the contractor's ability to implement the program after the restart and the program was suspended later in 2020. A new vendor was selected in 2021 to implement the Residential Appliance Recycling Program. Program operations were planned to resume in August 2021, but the program manager reported that economic conditions, supply chain issues, and the ongoing pandemic delayed the restart. The program relaunched operations with refrigerators and freezers pick-ups in November 2021 and rebate approvals in January 2022. Because the rebate approval date is used to determine the date of participation, these refrigerators and freezers were counted toward participation in 2022. While there were no program participants in 2021, the program made a strong recovery in 2022 with 2,478 participants, the highest level of participation in the program's four-year history.

3.1.2 Methods for the current reporting period

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

The assessment of this program used the algorithms and assumptions specified in the Dominion Energy Virginia and North Carolina Technical Reference Manual (DE TRM) located in Appendix F. Table 3-1 outlines Dominion Energy's initial program planning assumptions that were used to design the program.

⁶³ Virginia Residential Appliance Recycling Program Terms and Conditions, <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/save-energy/va-appliance-recycling-terms-conditions.pdf> Accessed March 12, 2023.



Table 3-1. Residential Appliance Recycling Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 60% |
| Measure Life (years) | 8 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 784.2 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.090 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.090 |
| Net Average Annual Energy Savings (per Participant (kWh/year) | 470.53 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.054 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.054 |
| Average Rebate per Participant (US\$) | \$20 |

3.1.3 Assessment of program progress toward plan

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

3.1.3.1 Key Virginia program data

Table 3-2 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix O.7, along with program performance by measure and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 3-2. Virginia Residential Appliance Recycling Program performance indicators (2019–2022)⁶⁴

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|--------------------------------------|---------------------------------|-------------|--------------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | | | | | | |
| | Indirect Other (Administrative) | \$13,009 | \$24,834 | \$10,451 | \$29,331 | \$77,624 |
| Total Costs (\$) | Total ^{2F65} | \$384,884 | \$473,111 | \$222,880 | \$702,471 | \$1,783,347 |
| | Planned | \$1,094,670 | \$1,828,534 | \$1,784,868 | \$1,808,701 | \$6,516,773 |
| | Variance | -\$709,785 | -\$1,355,423 | -\$1,561,988 | -\$1,106,229 | -\$4,733,426 |
| | Annual % of Planned | 35% | 26% | 12% | 39% | 27% |

⁶⁴ The sum of the individual annual values may differ from the total value due to rounding.

⁶⁵ 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 | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|--|-----------|-----------|-----------|-----------|---------------------------|
| Participants | Total (Gross) | 1,579 | 972 | 0 | 2,478 | 5,029 |
| | Planned (Gross) | 5,225 | 8,930 | 8,930 | 8,930 | 32,015 |
| | Variance | -3,646 | -7,958 | -8,930 | -6,452 | -26,986 |
| | Annual % of Planned (Gross) | 30% | 11% | 0% | 28% | 16% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 1,255,513 | 868,091 | 0 | 1,467,578 | 3,591,183 |
| | Realization Rate | 100% | 100% | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 1,255,513 | 868,091 | 0 | 1,467,578 | 3,591,183 |
| | Net-to-Gross Ratio ⁶⁶ | 60% | 60% | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | -502,205 | -347,237 | 0 | -587,031 | -1,436,473 |
| | Net Adjusted Savings | 753,308 | 520,855 | 0 | 880,547 | 2,154,710 |
| | Planned Savings (Net) | 2,458,500 | 4,201,800 | 4,201,800 | 4,201,800 | 15,063,900 |
| | Annual % Toward Planned Savings (Net) | 30.6% | 12.4% | 0% | 21.0% | 14.3% |
| | Avg. Savings per Participant (Gross) | 795 | 893 | N/A | 592 | 714 |
| | Avg. Savings per Participant (Net) | 477 | 536 | N/A | 355 | 428 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 187.9 | 129.9 | 0.0 | 219.7 | 537.5 |
| | Realization Rate | 100% | 100% | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 187.9 | 129.9 | 0.0 | 219.7 | 537.5 |
| | Net-to-Gross Ratio ⁶⁶ | 60% | 60% | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | -75.2 | -52.0 | 0.0 | -87.9 | -215.0 |
| | Net Adjusted Demand | 112.8 | 78.0 | 0.0 | 131.8 | 322.5 |
| | Planned Demand (Net) | 280.6 | 479.5 | 479.5 | 479.5 | 1,719.2 |
| | Annual % Toward Planned Demand (Net) | 40.2% | 16.3% | 0% | 27.5% | 18.8% |
| | Avg. Peak Demand per Participant (Gross) | 0.1 | 0.1 | N/A | 0.09 | 0.1 |
| | Avg. Demand per Participant (Net) | 0.07 | 0.08 | N/A | 0.05 | 0.06 |

⁶⁶ 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), the implementation vendor has calculated that 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|---|--------|--------|--------|--------|---------------------------|
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | - | 0.0 | 0.0 | 0.0 |
| | Realization Rate | - | - | N/A | N/A | N/A |
| | Realization Rate Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | - | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ⁶⁶ | - | - | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | - | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | - | - | 479.5 | 479.5 | 959.1 |
| | Annual % Toward Planned Demand (Net) | - | - | 0% | 0% | 0% |
| | Avg. Peak Demand per Participant (Gross) | - | - | N/A | 0.0 | 0.0 |
| | Avg. Demand per Participant (Net) | - | - | N/A | 0.0 | 0.0 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$8 | \$15 | \$19 | \$15 | \$15 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.01 | \$0.02 | \$0.02 | \$0.02 | \$0.02 |
| | Cml Annual \$Admin. per kW (Gross) | \$69 | \$119 | \$152 | \$144 | \$144 |
| | Cml Annual \$EM&V per Total Costs (\$) | 7.3% | 9.2% | 13.9% | 10.8% | 10.8% |
| | Cml Annual \$Rebate per Participant (Gross) | \$20 | \$20 | \$20 | \$20 | \$20 |

3.1.3.2 Key North Carolina program data

Table 3-3 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Appendix P.6 presents detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 3-3. North Carolina Residential Appliance Recycling Program performance indicators (2020–2022)⁶⁷

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------|-------|-------|---------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$881 | \$542 | \$1,057 | \$2,479 |

⁶⁷ The sum of the individual annual values may differ from the total value due to rounding



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|--|-----------|-----------|-----------|---------------------------|
| Total Costs (\$) | Total ^{4F68} | \$17,270 | \$11,552 | \$25,314 | \$54,136 |
| | Planned | \$116,132 | \$111,062 | \$115,406 | \$342,599 |
| | Variance | -\$98,861 | -\$99,510 | -\$90,092 | -\$288,463 |
| | Annual % of Planned | 15% | 10% | 22% | 16% |
| Participants | Total (Gross) | 0 | 0 | 19 | 19 |
| | Planned (Gross) | 570 | 570 | 570 | 1,710 |
| | Variance | -570 | -570 | -551 | -1,691 |
| | Annual % of Planned (Gross) | 0% | 0% | 3.3% | 1.1% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 0 | 14,260 | 14,260 |
| | Realization Rate | N/A | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 0 | 14,260 | 14,260 |
| | Net-to-Gross Ratio ⁶⁶ | N/A | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | 0 | 0 | -5,704 | -5,704 |
| | Net Adjusted Savings | 0 | 0 | 8,556 | 8,556 |
| | Planned Savings (Net) | 268,200 | 268,200 | 268,200 | 804,600 |
| | Annual % Toward Planned Savings (Net) | 0% | 0% | 3.19% | 1.06% |
| | Avg. Savings per Participant (Gross) | N/A | N/A | 751 | 751 |
| Avg. Savings per Participant (Net) | N/A | N/A | 450 | 450 | |
| Installed Summer Demand Reduction (kW) | Installed Demand Reduction (kW) | 0.0 | 0.0 | 2.1 | 2.1 |
| | Realization Rate | N/A | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 2.1 | 2.1 |
| | Net-to-Gross Ratio ⁶⁶ | N/A | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | -0.9 | -0.9 |
| | Net Adjusted Demand | 0.0 | 0.0 | 1.3 | 1.3 |
| | Planned Demand (Net) | 30.6 | 30.6 | 30.6 | 91.8 |
| | Annual % Toward Planned Demand (Net) | 0% | 0% | 4.18% | 1.39% |
| | Avg. Peak Demand per Participant (Gross) | N/A | N/A | 0.1 | 0.1 |
| Avg. Demand per Participant (Net) | N/A | N/A | 0.07 | 0.07 | |
| Installed Winter Demand | Installed Demand Reduction (kW) | - | 0.0 | 0.0 | 0.0 |
| | Realization Rate | - | N/A | N/A | N/A |

⁶⁸ 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------------------------|---|-------|-------|---------|---------------------------|
| Reduction (kW) | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ⁶⁶ | - | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | - | 30.6 | 30.6 | 61.2 |
| | Annual % Toward Planned Demand (Net) | - | 0% | 0% | 0% |
| | Avg. Peak Demand per Participant (Gross) | - | N/A | 0.0 | 0.0 |
| | Avg. Demand per Participant (Net) | - | N/A | 0.0 | 0.0 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | N/A | \$130 | \$130 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | N/A | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | N/A | \$1,162 | \$1,162 |
| | Cml Annual \$EM&V per Total Costs (\$) | 15.3% | 24.7% | 18.0% | 18.0% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | N/A | \$20 | \$20 |

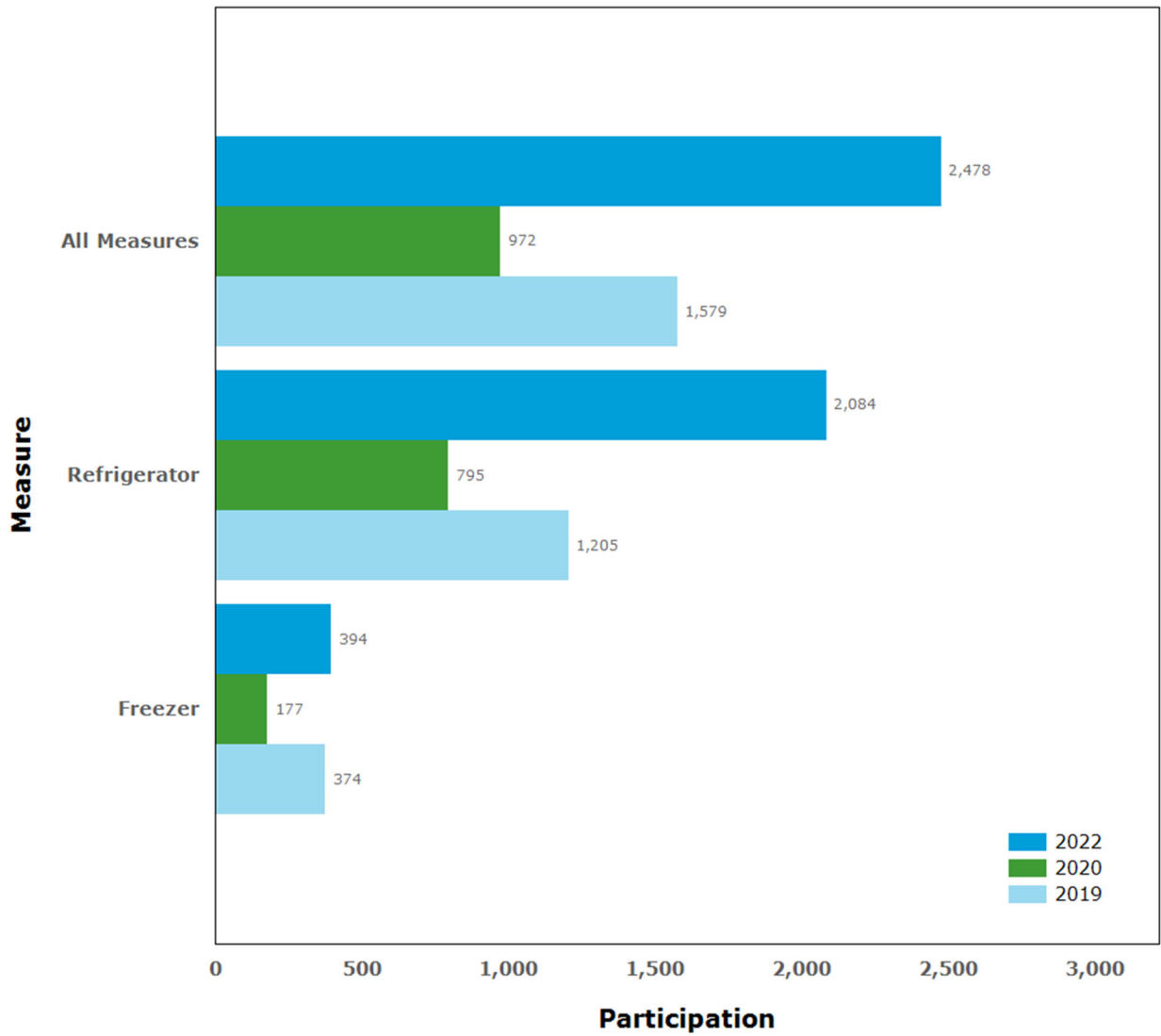
3.1.3.3 Additional Virginia program data

Figure 3-1 through Figure 3-2 show the Virginia program’s participation and gross annualized energy savings. Note that the definition of participants for Residential Appliance Recycling Program is the number of refrigerators and freezers recycled.

A total of 5,029 appliances have been recycled through the program since its inception (Figure 3-1). Approximately 81% of the recycled units were refrigerators (4,084) and 19% were freezers (945). Other detailed program participation and savings at the measure level appear in Appendix O.7.



Figure 3-1. Virginia Residential Appliance Recycling Program participation by measure and year⁶⁹

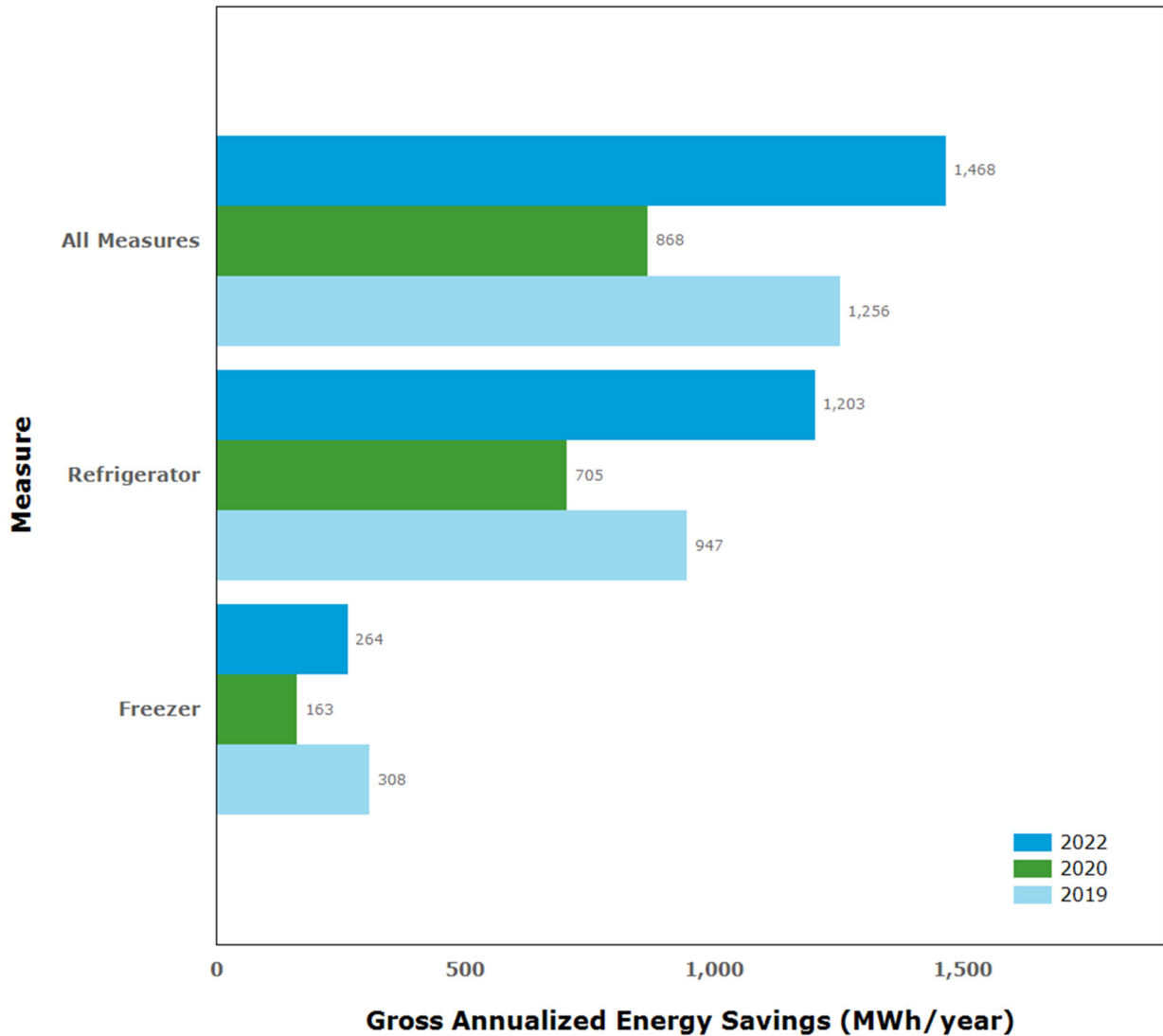


⁶⁹ There was no program activity during 2021.



From 2019 through 2022, the Residential Appliance Recycling program had 3,591,183 kWh/year in gross annualized energy savings. Of that, 80% of the gross annualized savings resulted from refrigerators and 20% resulted from freezers.

Figure 3-2. Virginia Residential Appliance Recycling Program gross annualized energy savings by measure and year (MWh/year)⁷⁰



3.1.3.4 Additional North Carolina program data

As shown in Figure 3-3 and Figure 3-4, in 2022, the first North Carolina customers participated in the program. Four freezers and 19 refrigerators were recycled through the program in 2022. Of the 14,260 gross annualized kWh/year savings in 2022, 76% resulted from recycling refrigerators and 24% resulted from recycling freezers. Other detailed program participation and savings information at the measure level appear in Appendix P.6.

⁷⁰ There was no program activity during 2021.



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

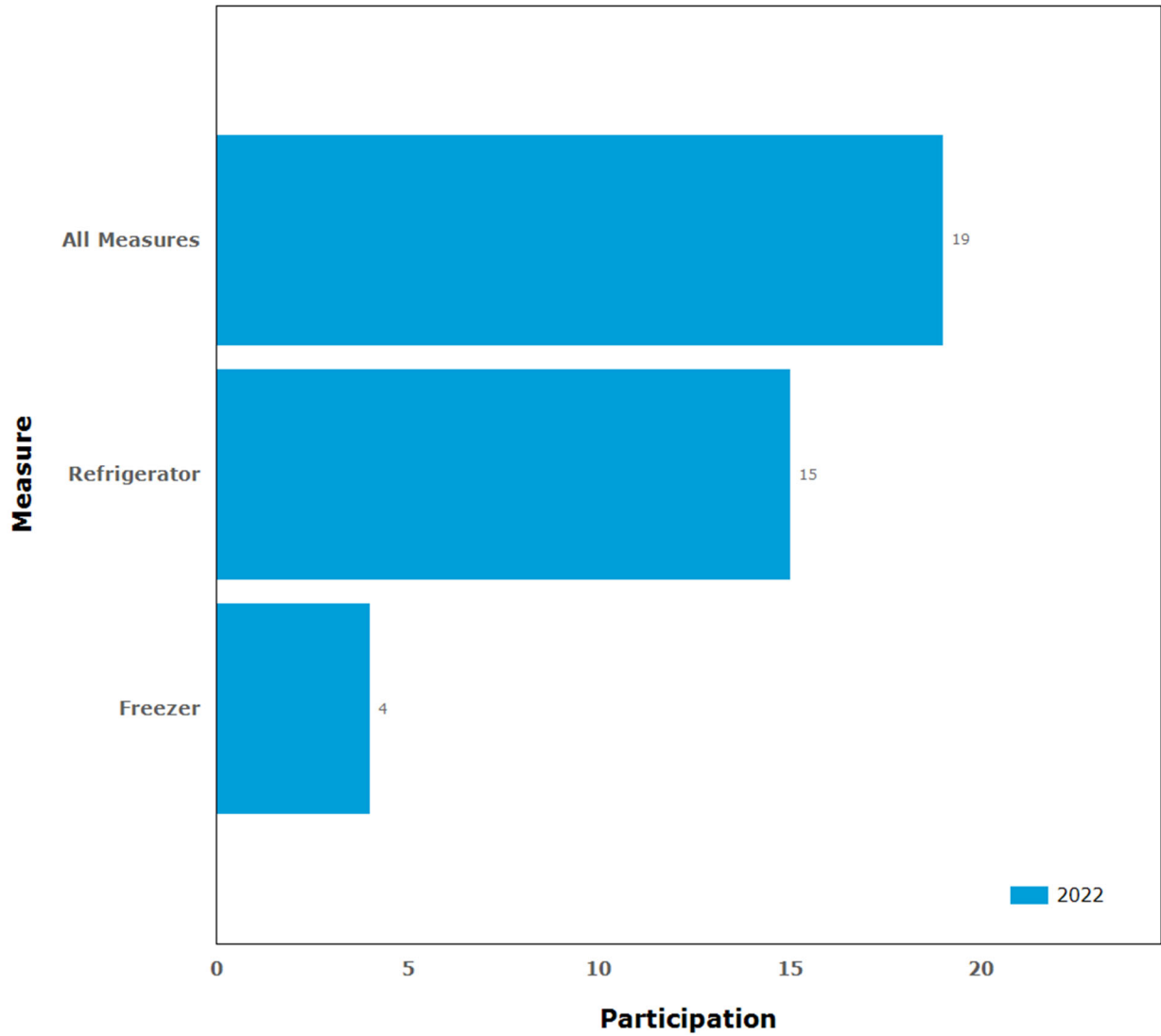
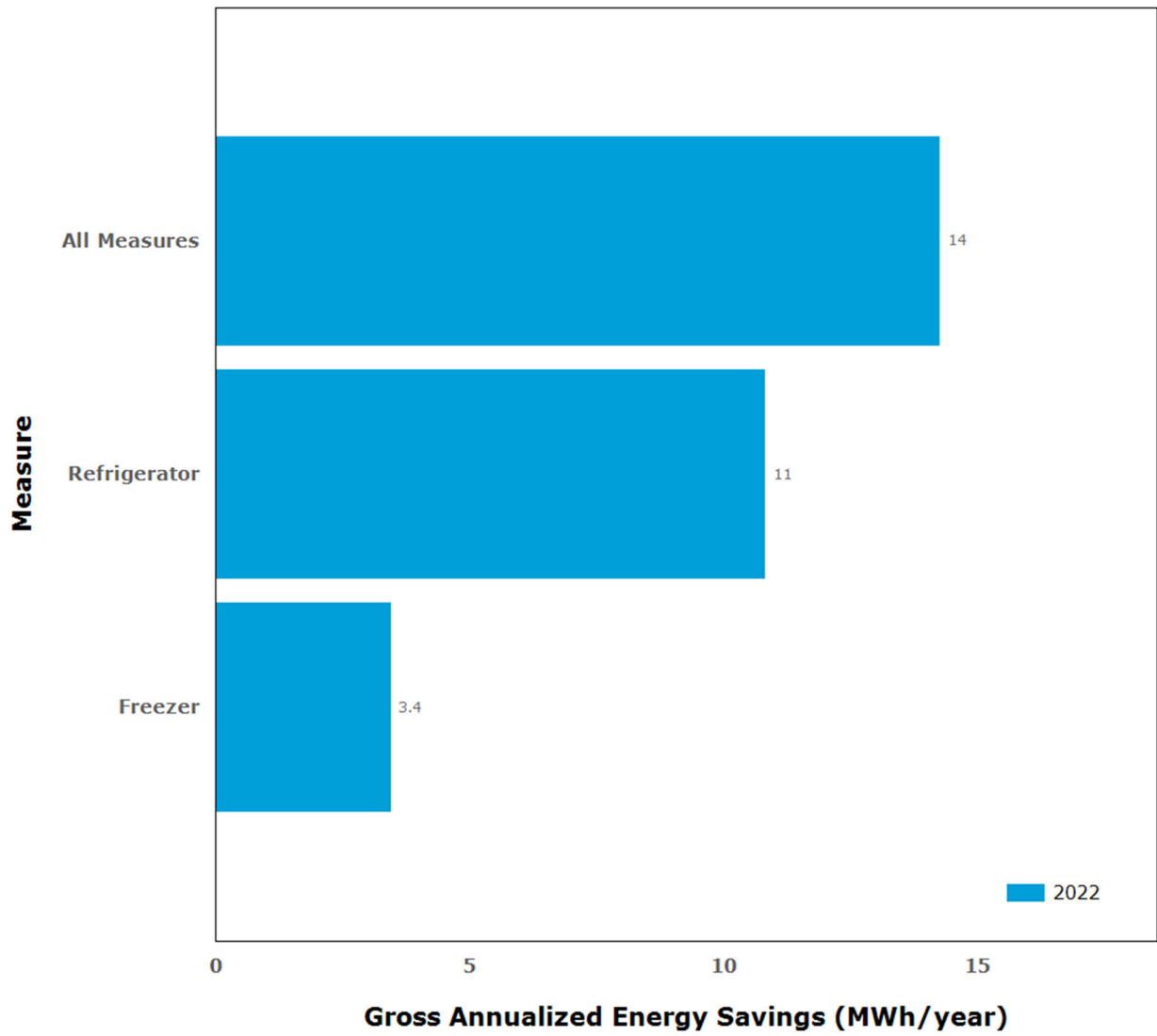




Figure 3-4. North Carolina Residential Appliance Recycling Program gross annualized energy savings by measure and year (MWh/year)





3.2 Residential Home Energy Assessment Program – Virginia and North Carolina

3.2.1 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 audit. This includes a walk-through audit of customer homes, direct install 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.



Image courtesy of Dominion Energy

Residential customers living in single-family residences or townhomes with Dominion electric service are eligible for this program. Customers must contact a 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 is issued. This process can take several months, as customers have 45 days to submit their rebate application, and the Company has 90 days to process it.

The eligible improvements are primarily energy efficiency measures that impact electricity consumption and include:

- Direct install lighting
- Hot water appliances
- Efficient faucets and aerators
- Heat pump tune-up and upgrade
- Duct sealing and duct insulation
- 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, 2019.⁷¹ The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 567). The program officially launched on January 1, 2020.⁷² Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

The program was evaluated in early 2023 for program years 2020–2022 (attached as Appendix H). The evaluation calculated net energy savings using an augmented comparison approach that compared pre-installation normalized annual consumption to post-installation normalized annual consumption and adjusted the difference using a well-matched comparison group. The average three-year per-participant savings was 562 kWh/year.

Although it is impossible to determine exactly what is driving the lower-than-expected savings, DNV identified three potential contributing factors:

⁷¹ Virginia Residential Home Energy Assessment Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/va-rhea-terms-conditions.pdf>. Accessed March 31, 2023.

⁷² North Carolina Residential Home Energy Assessment Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/north-carolina---electric/save-energy/home-energy-assessment/res-hea-terms-conditions-nce.pdf>. Accessed March 31, 2023.



- The largest potential contributor to the low lighting measure savings may be the difference between the installed lighting baseline, the TRM lighting baseline, and planned lighting baseline. The baseline wattages in the program planning assumption and the DE TRM may be higher than program conditions, resulting in overstated deemed savings estimates.
- The lighting measure realization rate (RR) increases as the number of lamps installed per household decreases. Dominion Energy implemented program design changes in the program’s second year by limiting the number of lamps installed to 70 per household. Improvements in the RR from this program reset can be seen late in 2021 and throughout 2022.
- The program pause initiated at the beginning of the COVID-19 pandemic in March 2020 lowered participation and decreased measure mix diversity. Even after the program was reinstated later in 2020, customers were generally hesitant to invite contractors into their homes.

3.2.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 3-4 outlines Dominion Energy’s initial program planning assumptions used to design the program. DNV uses the planned NTG factor in its net savings calculations until it can be verified through EM&V.

Table 3-4. Residential Home Energy Assessment Program planning assumptions system-wide

| Assumption | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|-----------------------|-------|-------|-------|-------|
| Target market | Residential customers | | | | |
| NTG factor | 80% | | | | |
| Measure life (years) | 12.41 | | | | |
| Gross average annual energy savings per participant (kWh/year) | 587 | 409 | 426 | 452 | 453 |
| Gross average summer coincident peak demand reduction per participant (kW) | 0.244 | 0.191 | 0.194 | 0.181 | 0.177 |
| Gross average winter coincident peak demand reduction per participant (kW) | 0.775 | 0.556 | 0.549 | 0.474 | 0.451 |
| Net average annual energy savings per participant (kWh/year) | 470 | 327 | 341 | 362 | 362 |
| Net average summer coincident peak demand reduction (kW) per participant | 0.195 | 0.153 | 0.156 | 0.145 | 0.141 |
| Net average winter coincident peak demand reduction (kW) per participant | 0.620 | 0.445 | 0.439 | 0.379 | 0.361 |
| Average rebate (US\$) per participant | \$82 | | | | |

3.2.3 Assessment of program progress toward plan

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

3.2.3.1 Key Virginia program data

Table 3-5 provides performance indicator data annually and cumulatively from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.8 provides detailed program indicators by year and month. Appendix Q shows cumulative gross and net savings. Appendix O.8.3 gives program performance by measure. Appendix O.8.4 gives a comparison of program savings with usage by rate schedule.



Table 3-5. Virginia Residential Home Energy Assessment Program performance indicators (2019–2022)⁷³

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|----------------------------------|--------------|--------------|-------------|-------------|---------------------------|
| Operations and management costs (\$) | Indirect other (administrative) | \$24,171 | \$153,132 | \$358,842 | \$194,634 | \$730,778 |
| | | | | | | |
| Total costs (\$) | Total ⁷⁴ | \$715,145 | \$2,981,049 | \$7,652,974 | \$4,661,476 | \$16,010,645 |
| | Planned | \$2,326,635 | \$4,257,214 | \$4,755,154 | \$4,925,188 | \$16,264,190 |
| | Variance | -\$1,611,489 | -\$1,276,164 | \$2,897,820 | -\$263,712 | -\$253,545 |
| | Annual % of planned | 31% | 70% | 161% | 95% | 98% |
| Participants | Total (Gross) | 0 | 2,738 | 9,917 | 6,509 | 19,164 |
| | Planned (Gross) | 11,030 | 28,536 | 32,919 | 32,005 | 104,490 |
| | Variance | -11,030 | -25,798 | -23,002 | -25,496 | -85,326 |
| | Annual % of planned (Gross) | 0% | 10% | 30% | 20% | 18% |
| Installed energy savings (kWh/year) | Total gross deemed savings | 0 | 4,960,666 | 22,601,069 | 12,667,811 | 40,229,547 |
| | Realization rate | N/A | 22% | 23% | 40% | 28% |
| | Realization rate adjustment | 0 | -3,869,320 | -17,402,823 | -7,600,687 | -28,872,830 |
| | Adjusted gross savings | 0 | 1,091,347 | 5,198,246 | 5,067,125 | 11,356,717 |
| | Net-to-gross ratio ⁷⁵ | N/A | 100% | 100% | 100% | 100% |
| | Net-to-gross adjustment | 0 | 0 | 0 | 0 | 0 |

⁷³ The sum of the individual annual values may differ from the total value due to rounding.

⁷⁴ 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.

⁷⁵ 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 57% 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, Methodology, section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019-2022) |
|---|--|-----------|-----------|------------|------------|---------------------------|
| | Net adjusted savings | 0 | 1,091,347 | 5,198,246 | 5,067,125 | 11,356,717 |
| | Planned savings (Net) | 5,175,460 | 9,329,981 | 11,219,605 | 11,583,221 | 37,308,268 |
| | Annual % toward planned savings (Net) | 0% | 11.7% | 46.3% | 43.7% | 30.4% |
| | Avg. savings per participant (Gross) | N/A | 1,812 | 2,279 | 1,946 | 2,099 |
| | Avg. savings per participant (Net) | N/A | 399 | 524 | 778 | 593 |
| | | | | | | |
| Installed summer demand reduction (kW) | Total gross deemed demand | 0.0 | 411.2 | 1,414.5 | 1,024.9 | 2,850.6 |
| | Realization rate | N/A | 22% | 23% | 40% | 29% |
| | Realization rate adjustment | 0.0 | -320.7 | -1,089.1 | -615.0 | -2,024.8 |
| | Adjusted gross demand | 0.0 | 90.5 | 325.3 | 410.0 | 825.8 |
| | Net-to-gross ratio ⁷⁶ | N/A | 100% | 100% | 100% | 100% |
| | Net-to-gross adjustment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net adjusted demand | 0.0 | 90.5 | 325.3 | 410.0 | 825.8 |
| | Planned demand (Net) | 2,150.5 | 4,368.7 | 5,121.4 | 4,639.2 | 16,279.8 |
| | Annual % toward planned demand (Net) | 0% | 2.07% | 6.35% | 8.84% | 5.07% |
| | Avg. peak demand per participant (Gross) | N/A | 0.2 | 0.1 | 0.2 | 0.1 |
| | Avg. demand per participant (Net) | N/A | 0.03 | 0.03 | 0.06 | 0.04 |
| Installed winter demand reduction (kW) | Total gross deemed demand | - | - | 3,163.4 | 1,724.4 | 4,887.8 |
| | Realization rate | - | - | 23% | 40% | 29% |
| | Realization rate adjustment | - | - | -2,435.8 | -1,034.6 | -3,470.4 |
| | Adjusted gross demand | - | - | 727.6 | 689.8 | 1,417.3 |
| | Net-to-gross ratio ⁷⁷ | - | - | 100% | 100% | 100% |
| | Net-to-gross adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Net adjusted demand | - | - | 727.6 | 689.8 | 1,417.3 |

⁷⁶ Ibid.

⁷⁷ Ibid.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019-2022) |
|----------------------------|--|-------|--------|----------|----------|---------------------------|
| | Planned demand (Net) | - | - | 14,462.2 | 12,131.2 | 26,593.4 |
| | Annual % toward planned demand (Net) | - | - | 5.03% | 5.69% | 5.33% |
| | Avg. peak demand per participant (Gross) | - | - | 0.3 | 0.3 | 0.3 |
| | Avg. demand per participant (Net) | - | - | 0.07 | 0.1 | 0.09 |
| Program performance | Cum. annual \$admin. per participant (Gross) | N/A | \$65 | \$42 | \$38 | \$38 |
| | Cum. annual \$admin. per kWh/year (Gross) | N/A | \$0.04 | \$0.02 | \$0.02 | \$0.02 |
| | Cum. annual \$admin. per kW (Gross) | N/A | \$431 | \$294 | \$256 | \$256 |
| | Cum. annual \$EM&V per total costs (\$) | 14.1% | 7.4% | 3.9% | 3.8% | 3.8% |
| | Cum. annual \$rebate per participant (Gross) | N/A | \$473 | \$542 | \$505 | \$505 |
| | | | | | | |



3.2.3.2 Key North Carolina program data

Table 3-6 provides performance indicator data annually and cumulatively from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix P.7 provides detailed program indicators by year and month. Appendix Q shows cumulative net savings. Appendix P.7.3 gives program performance by measure. Appendix P.7.4 gives a comparison of program savings with usage by rate schedule.

Table 3-6. North Carolina Residential Home Energy Assessment Program Performance Indicators (2020–2022)⁷⁸

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------|------------|------------|------------|---------------------------|
| Operations and management costs (\$) | | | | | |
| | | | | | |
| | | | | | |
| | Indirect other (administrative) | \$5,032 | \$5,671 | \$4,541 | \$15,245 |
| Total costs (\$) | Total ⁷⁹ | \$96,955 | \$120,947 | \$108,763 | \$326,666 |
| | Planned | \$270,379 | \$295,885 | \$314,257 | \$880,520 |
| | Variance | -\$173,423 | -\$174,938 | -\$205,493 | -\$553,855 |
| | Annual % of planned | 36% | 41% | 35% | 37% |
| Participants | Total (Gross) | 17 | 32 | 18 | 67 |
| | Planned (Gross) | 1,821 | 2,101 | 2,043 | 5,965 |
| | Variance | -1,804 | -2,069 | -2,025 | -5,898 |
| | Annual % of planned (Gross) | 1% | 2% | 1% | 1% |
| Installed energy savings (kWh/year) | Total gross deemed savings | 19,413 | 70,833 | 28,587 | 118,833 |
| | Realization rate | 22% | 23% | 40% | 27% |
| | Realization rate adjustment | -15,142 | -54,541 | -17,152 | -86,836 |
| | Adjusted gross savings | 4,271 | 16,292 | 11,435 | 31,997 |

⁷⁸ The sum of the individual annual values may differ from the total value due to rounding.

⁷⁹ 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 | 2020 | 2021 | 2022 | Program total (2020-2022) |
|---|--|---------|---------|---------|---------------------------|
| | Net-to-gross ratio ⁸⁰ | 100% | 100% | 100% | 100% |
| | Net-to-gross adjustment | 0 | 0 | 0 | 0 |
| | Net adjusted savings | 4,271 | 16,292 | 11,435 | 31,997 |
| | Planned savings (Net) | 595,385 | 716,072 | 739,401 | 2,050,858 |
| | Annual % toward planned savings (Net) | 0.72% | 2.28% | 1.55% | 1.56% |
| | Avg. savings per participant (Gross) | 1,142 | 2,214 | 1,588 | 1,774 |
| | Avg. savings per participant (Net) | 251 | 509 | 635 | 478 |
| | Total gross deemed demand | 1.4 | 4.4 | 2.0 | 7.9 |
| | Realization rate | 22% | 23% | 40% | 27% |
| | Realization rate adjustment | -1.1 | -3.4 | -1.2 | -5.7 |
| Installed summer demand reduction (kW) | Adjusted gross demand | 0.3 | 1.0 | 0.8 | 2.1 |
| | Net-to-gross ratio ⁸¹ | 100% | 100% | 100% | 100% |
| | Net-to-gross adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net adjusted demand | 0.3 | 1.0 | 0.8 | 2.1 |
| | Planned demand (Net) | 278.8 | 326.9 | 296.1 | 901.8 |
| | Annual % toward planned demand (Net) | 0.11% | 0.31% | 0.27% | 0.24% |
| | Avg. peak demand per participant (Gross) | 0.08 | 0.1 | 0.1 | 0.1 |
| | Avg. demand per participant (Net) | 0.02 | 0.03 | 0.04 | 0.03 |
| | Total gross deemed demand | - | 9.6 | 4.3 | 13.9 |
| | Realization rate | - | 23% | 40% | 28% |
| Installed winter demand reduction (kW) | Realization rate adjustment | - | -7.4 | -2.6 | -10.0 |
| | Adjusted gross demand | - | 2.2 | 1.7 | 3.9 |

⁸⁰ 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 57% 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.

⁸¹ Ibid.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020-2022) |
|----------------------------|--|---------|---------|---------|---------------------------|
| | Net-to-gross ratio ⁸² | - | 100% | 100% | 100% |
| | Net-to-gross adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net adjusted demand | - | 2.2 | 1.7 | 3.9 |
| | Planned demand (Net) | - | 923.0 | 774.4 | 1,697.4 |
| | Annual % toward planned demand (Net) | - | 0.24% | 0.22% | 0.23% |
| | Avg. peak demand per participant (Gross) | - | 0.3 | 0.2 | 0.3 |
| | Avg. demand per participant (Net) | - | 0.07 | 0.09 | 0.08 |
| | | | | | |
| Program performance | Cum. annual \$admin. per participant (Gross) | \$296 | \$218 | \$228 | \$228 |
| | Cum. annual \$admin. per kWh/year (Gross) | \$0 | \$0 | \$0 | \$0 |
| | Cum. annual \$admin. per kW (Gross) | \$3,488 | \$1,819 | \$1,939 | \$1,939 |
| | Cum. annual \$EM&V per total costs (\$) | 9.2% | 8.8% | 9.2% | 9.2% |
| | Cum. annual \$rebate per participant (Gross) | \$262 | \$460 | \$439 | \$439 |

⁸² Ibid.



3.2.3.3 Additional Virginia program data

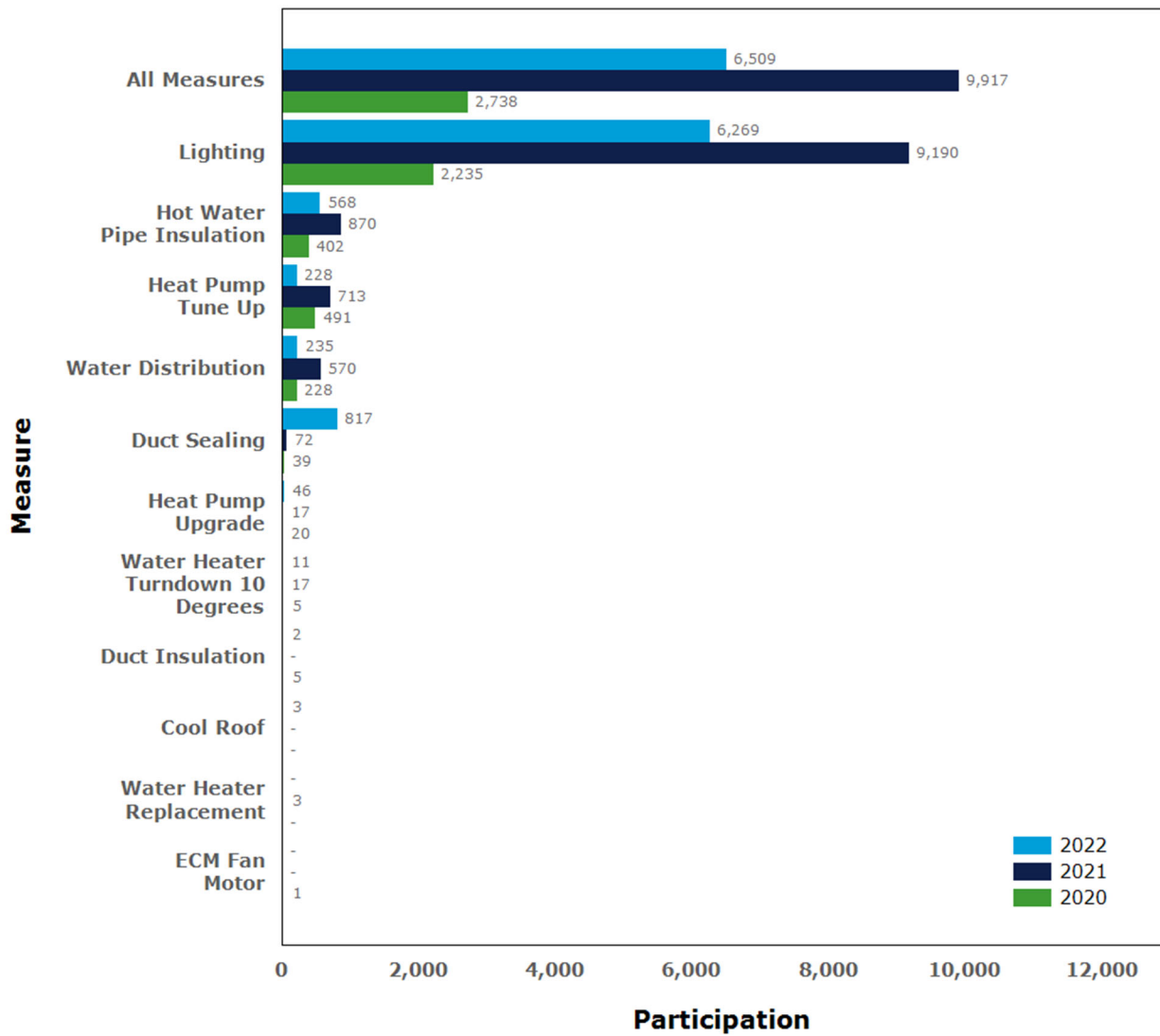
Figure 3-5 and Figure 3-6 show the program's participation and gross annualized energy savings, respectively, by measure type and year in Virginia. Other detailed program participation and savings at the measure level are provided in Appendix O.8.

Note that in these charts, participation is the count of new unique customers in the "all measures" presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from the participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Figure 3-5 shows that the most frequently adopted measure was lighting installation, which is all LED lamps, adopted by 96% of program participants. Duct sealing was the second most installed measure, adopted by 12% of participants. Hot water pipe insulation, which was the second most frequently implemented measure in 2021, was the third most frequently implemented measure in 2022, adopted by 9% of participants.



Figure 3-5. Virginia Residential Home Energy Assessment Program participation by measure and year



Lighting measures accounted for the most gross annualized energy savings in 2022, subtotalling 92% of the total energy saved, as shown in Figure 3-6. Hot water pipe insulation and duct sealing accounted for the second and third most energy savings in 2022, respectively. This means that the average savings per install were higher for hot water pipe insulation than for duct sealing, which was the second most adopted measure in 2022.



Figure 3-6. Virginia Residential Home Energy Assessment Program gross annualized energy savings by measure and year (MWh/year)

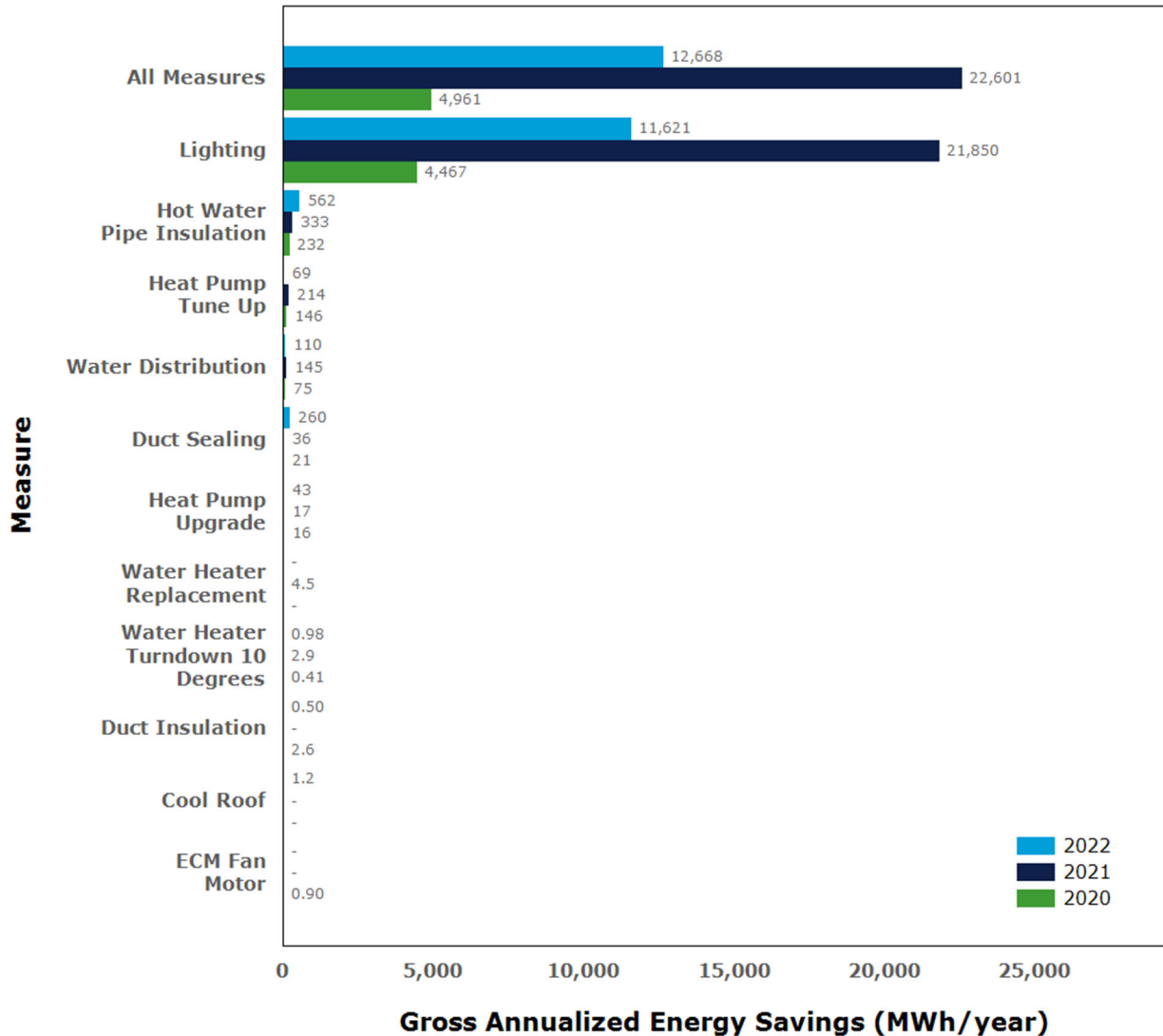
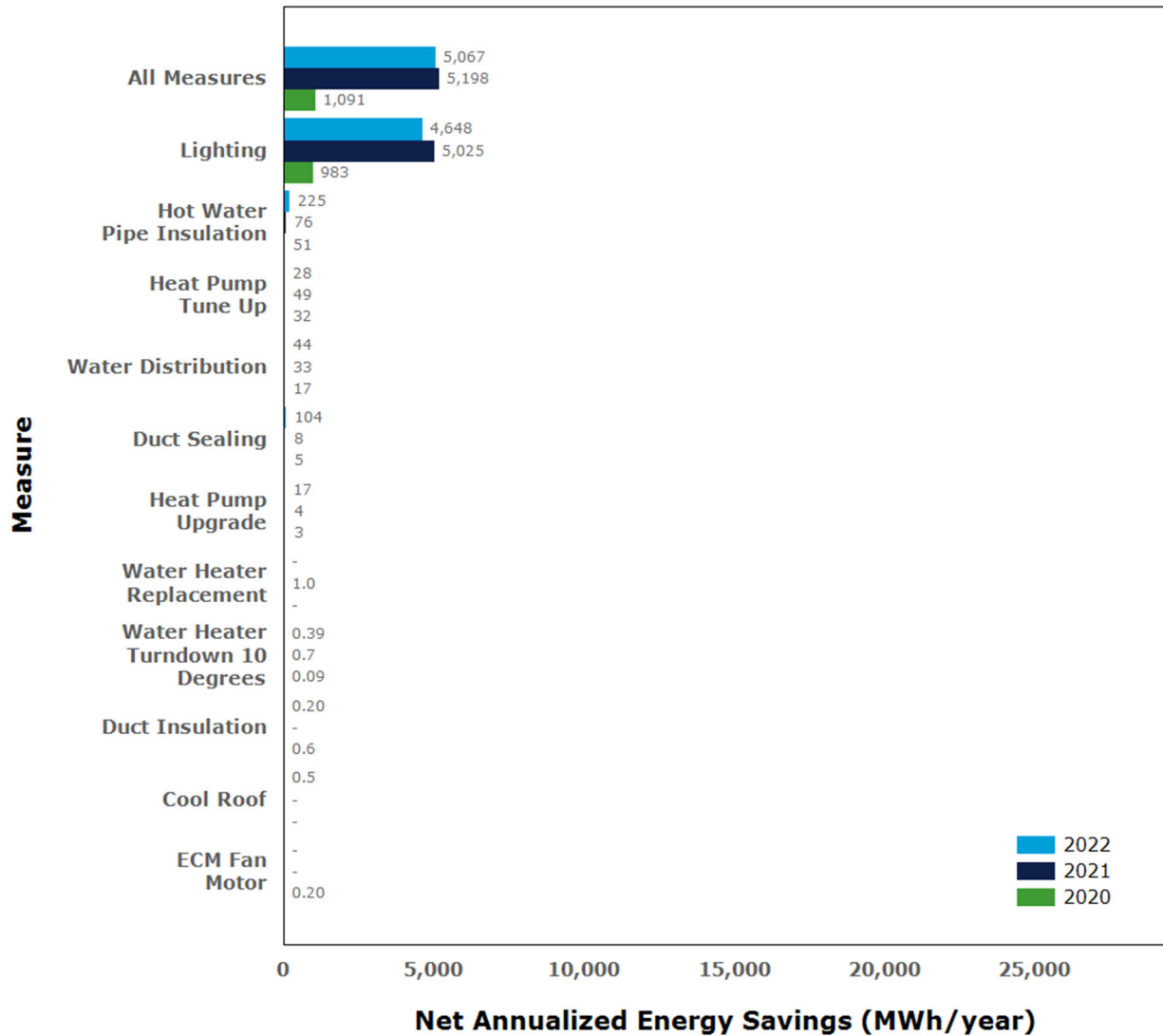


Figure 3-7 shows the net adjusted savings resulting from the program's impact analysis. The program's realization rate ranged from 22-40% for 2020 through 2022, the savings adjustments have been applied to each measure accordingly.



Figure 3-7. Virginia Residential Home Energy Assessment Program net annualized energy savings by measure and year (MWh/year)





3.2.3.4 Additional North Carolina program data

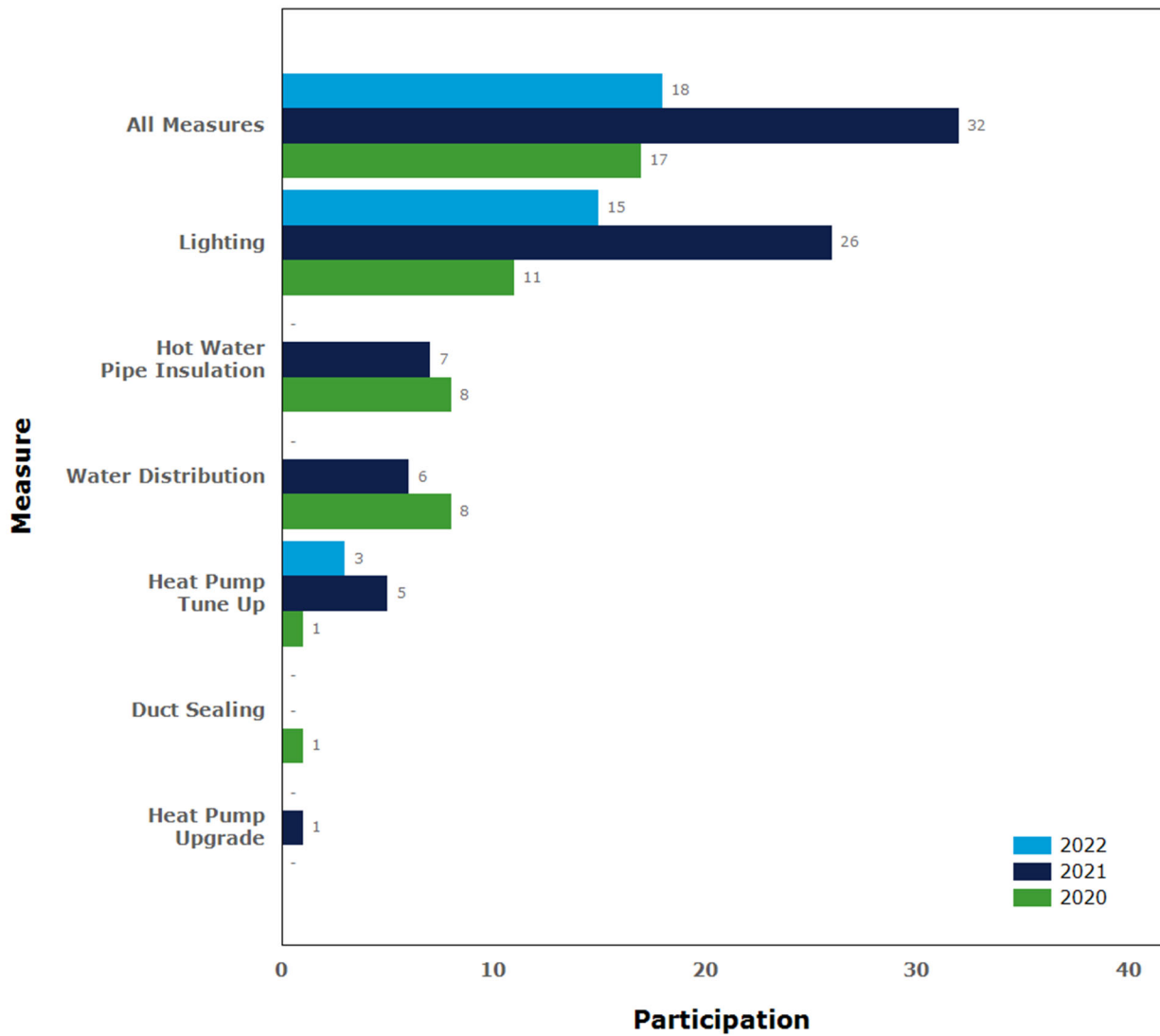
Figure 3-8 and Figure 3-9 show the program's participation and gross annualized energy savings, respectively, by measure type and year. Other detailed program participation and savings at the measure level are provided in Appendix P.7.

Note that in these charts, participation is the count of new unique customers in the "all measures" presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from the participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

As was the case in Virginia and in 2021, the most frequently adopted measure in 2022, in North Carolina, was the installation of lighting (all LED lamps), which was adopted by 83% of program participants, as shown in Figure 3-8. Heat pump tune-ups were the only other measure adopted in 2022, installed by 17% of program participants.



Figure 3-8. North Carolina Residential Home Energy Assessment Program participation by measure and year



Lighting measures accounted for the most gross annualized energy savings in 2022, subtotaling 97% of the total energy saved, as shown in Figure 3-9. Heat pump tune-ups were responsible for the remaining 3% of savings.



Figure 3-9. North Carolina Residential Home Energy Assessment Program gross annualized energy savings by measure and year (MWh/year)

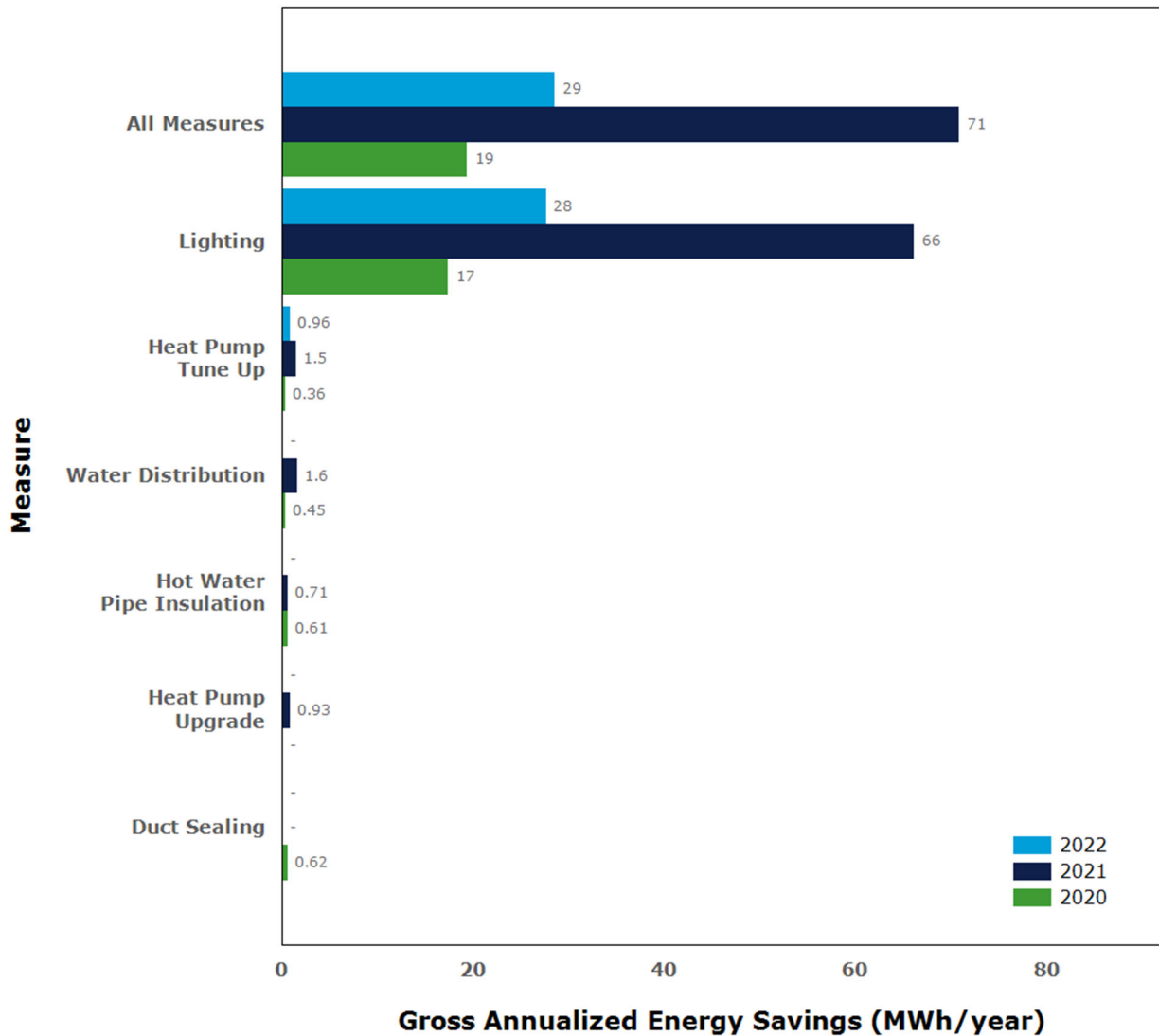
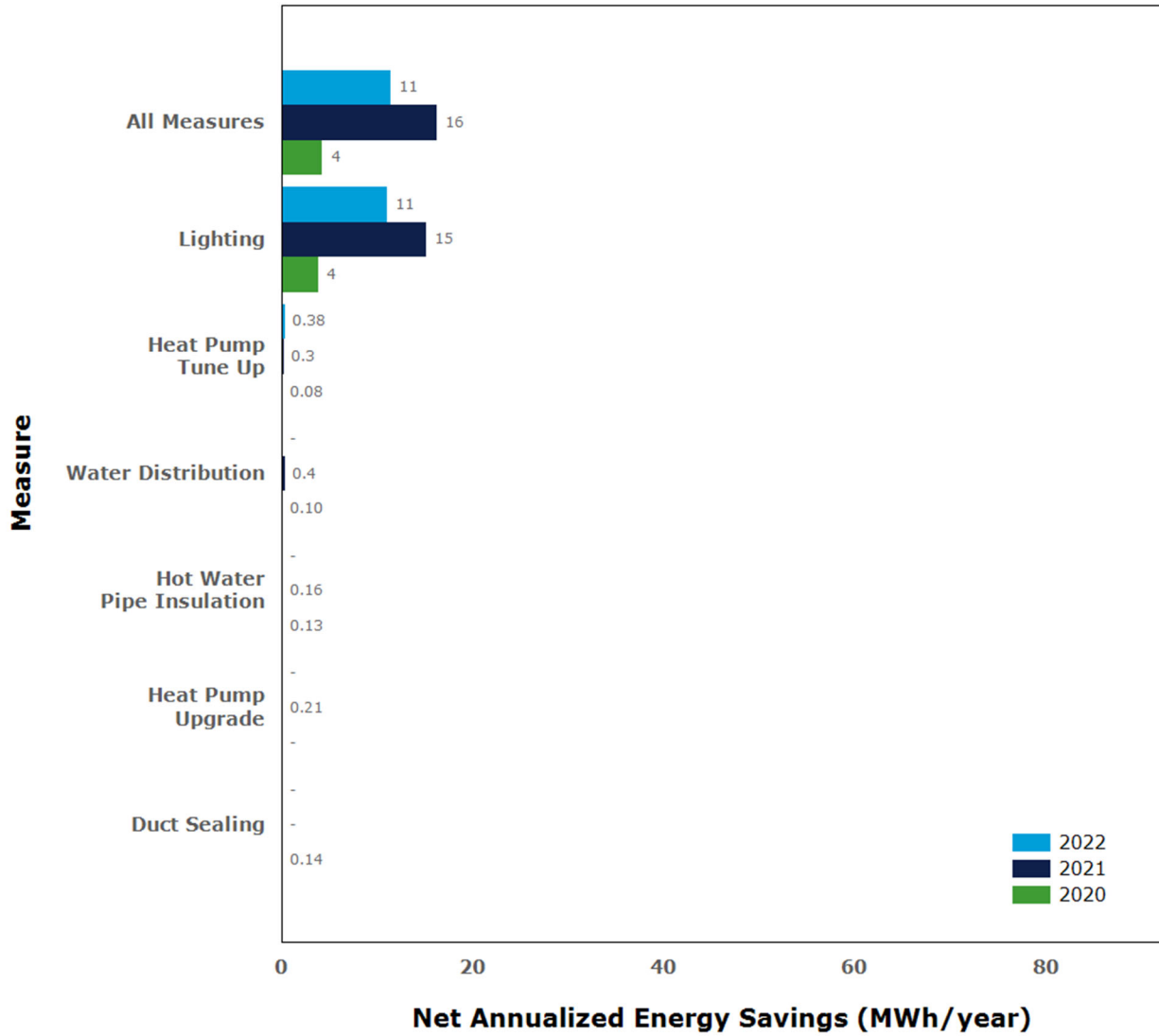


Figure 3-10 shows the net adjusted savings resulting from the program’s impact analysis. The program’s realization rate ranged from 22-40% for 2020 through 2022, the savings adjustments have been applied to each measure accordingly.



Figure 3-10. North Carolina Residential Home Energy Assessment Program net annualized energy savings by measure and year





3.3 Residential Customer Engagement Program – Virginia

3.3.1 Program description

The Residential Customer Engagement Program aims to motivate no- and low-cost energy conservation actions, participation in other Dominion Energy (DE) demand side management programs, or increased installation rates of energy efficiency measures by providing customers educational insights into their energy consumption through monthly digital or paper home energy reports (HERs).



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 evaluation employed three types of analyses: an energy savings impact analysis using consumption data, a joint savings impact analysis that used program tracking and load shape data, and a customer survey that informed the joint savings analysis and provides a descriptive analysis of customer behaviors, attitudes, and satisfaction.

Total 2021 and 2022 savings from the Customer Engagement program are 4.6 million kWh and 9.4 million kWh, respectively. An accompanying customer survey included a set of questions for the recipient group about their experience with the reports, including measuring awareness of the report, the depth of their review, and the report's usefulness. The results show that most HER report recipients recalled the reports, read some or all of the reports, and liked features of the reports.

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. These issues have since been resolved or are near resolution.

3.3.2 Methods for the current reporting period

The next section describes the program's progress toward planned participants, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data and estimating net energy savings and demand reduction using the DE TRM calculations in Appendix F. Table 3-7 outlines Dominion Energy's initial program planning assumptions. The evaluation estimated the net energy savings.



Table 3-7. Residential Customer Engagement Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target market | Residential customers |
| NTG factor | 100% |
| Measure life (years) | 1.0 |
| Gross average annual savings per participant (kWh/year) | 168.00 |
| Gross average summer coincident peak demand reduction per participant (kW) | 0.047 |
| Gross average winter coincident peak demand reduction per participant (kW) | 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 per participant (kWh/year) | 168.00 |
| Average rebate per participant (US\$) | \$0.00 |

3.3.3 Assessment of program progress toward plan

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

3.3.3.1 Key Virginia program data

Table 3-8 provides performance indicator data through 2022. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix O.9, and cumulative gross and net savings are in Appendix Q. Program performance by measure is provided in Appendix O.9.3, and a comparison of program savings with usage by rate schedule is provided in Appendix O.9.4.

Table 3-8. Virginia Residential Customer Engagement Program Performance Indicators (2020–2022)¹⁰²

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|--------------------------------------|---------------------------------|-----------|-------------|-------------|---------------------------|
| Operations and management costs (\$) | | | | | |
| | Indirect other (administrative) | \$6,939 | \$94,387 | \$73,045 | \$174,371 |
| Total costs (\$) | Total ¹⁰³ | \$162,614 | \$2,012,981 | \$1,749,425 | \$3,925,020 |
| | Planned | \$0 | \$1,904,508 | \$1,931,632 | \$3,836,140 |
| | Variance | \$162,614 | \$108,473 | -\$182,207 | \$88,880 |
| | Annual % of planned | N/A | 106% | 91% | 102% |
| Participants | Total (Gross) | 0 | 286,456 | 263,463 | 549,919 |
| | Planned (Gross) | 0 | 287,500 | 277,400 | 564,900 |
| | Variance | 0 | -1,044 | -13,937 | -14,981 |

¹⁰² The sum of the individual annual values may differ from the total value due to rounding.

¹⁰³ 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|------|-------------|-------------|---------------------------|
| | Annual % of planned (Gross) | N/A | 100% | 95% | 97% |
| Installed energy savings (kWh/year) | Total gross deemed savings | 0 | 58,274,006 | 53,407,869 | 111,681,875 |
| | Realization rate | N/A | 8% | 17% | 12% |
| | Realization rate adjustment | 0 | -53,612,085 | -44,328,532 | -97,940,617 |
| | Adjusted gross savings | 0 | 4,661,920 | 9,079,338 | 13,741,258 |
| | Net-to-gross ratio | N/A | 100% | 100% | 100% |
| | Net-to-gross adjustment | 0 | 0 | 0 | 0 |
| | Net adjusted savings | 0 | 4,661,920 | 9,079,338 | 13,741,258 |
| | Planned savings (Net) | 0 | 48,300,000 | 46,603,200 | 94,903,200 |
| | Annual percent toward planned savings (Net) | N/A | 9.65% | 19.5% | 14.5% |
| | Avg. savings per participant (Gross) | N/A | 203 | 203 | 203 |
| | Avg. savings per participant (Net) | N/A | 16 | 34 | 25 |
| Installed summer demand reduction (kW) | Total gross demand reduction | 0.0 | 0.0 | 0.0 | 0.0 |
| | Realization rate | N/A | N/A | N/A | N/A |
| | Realization rate adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted gross demand reduction | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net-to-gross ratio | N/A | N/A | N/A | N/A |
| | Net-to-gross Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net adjusted demand reduction | 0.0 | 0.0 | 0.0 | 0.0 |
| | Planned demand (Net) | 0.0 | 13,512.5 | 13,037.8 | 26,550.3 |
| | Annual % toward planned demand (Net) | N/A | 0% | 0% | 0% |
| | Avg. Peak demand per participant (Gross) | N/A | 0.0 | 0.0 | 0.0 |
| | Avg. demand per participant (Net) | N/A | 0.0 | 0.0 | 0.0 |
| Installed Winter Demand Reduction (kW) | Total gross demand reduction | - | 0.0 | 0.0 | 0.0 |
| | Realization rate | - | N/A | N/A | N/A |
| | Realization rate adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted gross demand reduction | - | 0.0 | 0.0 | 0.0 |
| | Net-to-gross ratio | - | N/A | N/A | N/A |
| | Net-to-gross adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net adjusted demand reduction | - | 0.0 | 0.0 | 0.0 |
| | Planned demand (Net) | - | 9,200.0 | 8,876.8 | 18,076.8 |
| | Annual % toward planned | - | 0% | 0% | 0% |



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------------------------|--|-------|--------|--------|---------------------------|
| | demand (Net) | | | | |
| | Avg. peak demand per participant (Gross) | - | 0.0 | 0.0 | 0.0 |
| | Avg. demand per participant (Net) | - | 0.0 | 0.0 | 0.0 |
| | | | | | |
| Program performance | Cum. annual \$admin. per participant (Gross) | N/A | \$0 | \$0 | \$0 |
| | Cum. annual \$admin. per kwh/year (gross) | N/A | \$0.00 | \$0.00 | \$0.00 |
| | Cum. annual \$admin. per kw (gross) | N/A | N/A | N/A | N/A |
| | Cum. annual \$EM&V per total costs (\$) | 18.9% | 9.5% | 8.5% | 8.5% |
| | Cum. annual \$rebate per participant (gross) | N/A | \$0 | \$0 | \$0 |

3.3.3.2 Additional Virginia program data

Figure 3-11 and Figure 3-12 show the unique customers that received home energy reports (those assigned to the treatment group) in the randomized control experimental designs. Participation in the treatment group remains constant throughout the life of the program. 263,463 customers received home energy reports in 2022, 61% of the reports were sent by email and 39% were paper reports delivered through the U.S. Postal Service. Other detailed program participation and savings at the measure level are provided in Appendix O.9.



Figure 3-11. Residential Customer Engagement Program participation by home energy report delivery method

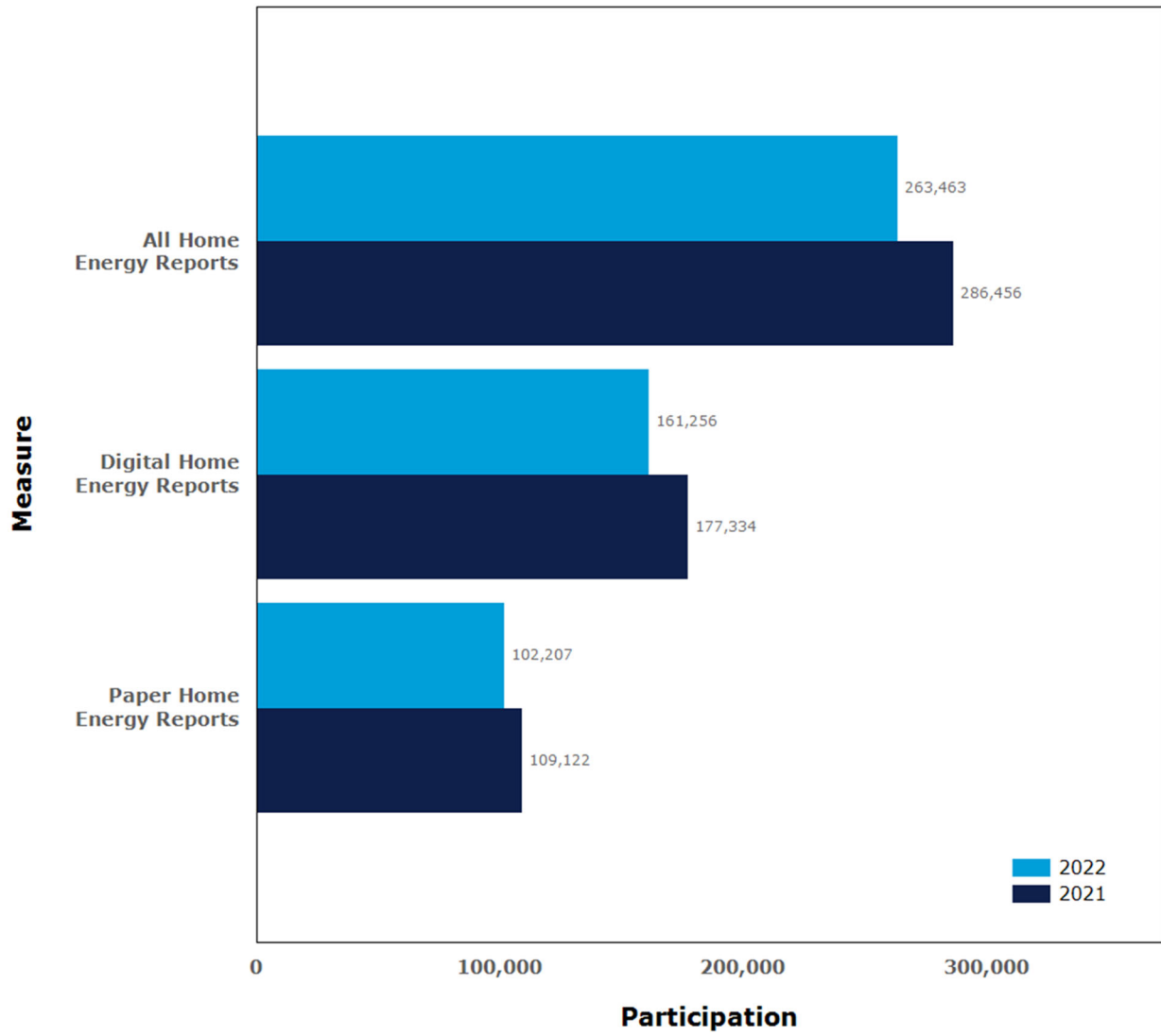




Figure 3-12. Virginia Residential Customer Engagement Program gross annualized energy savings by home energy report delivery method (MWh/year)

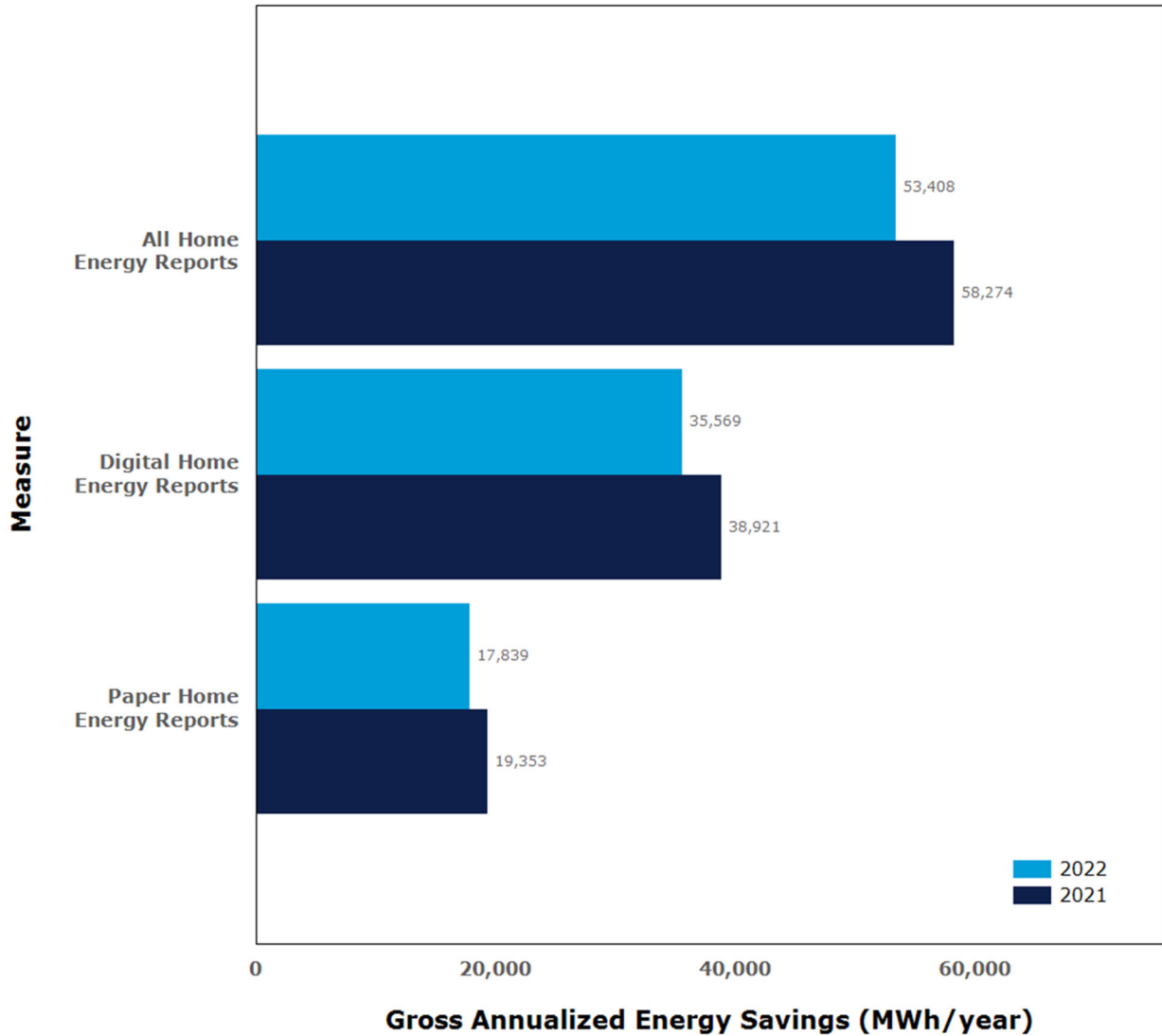
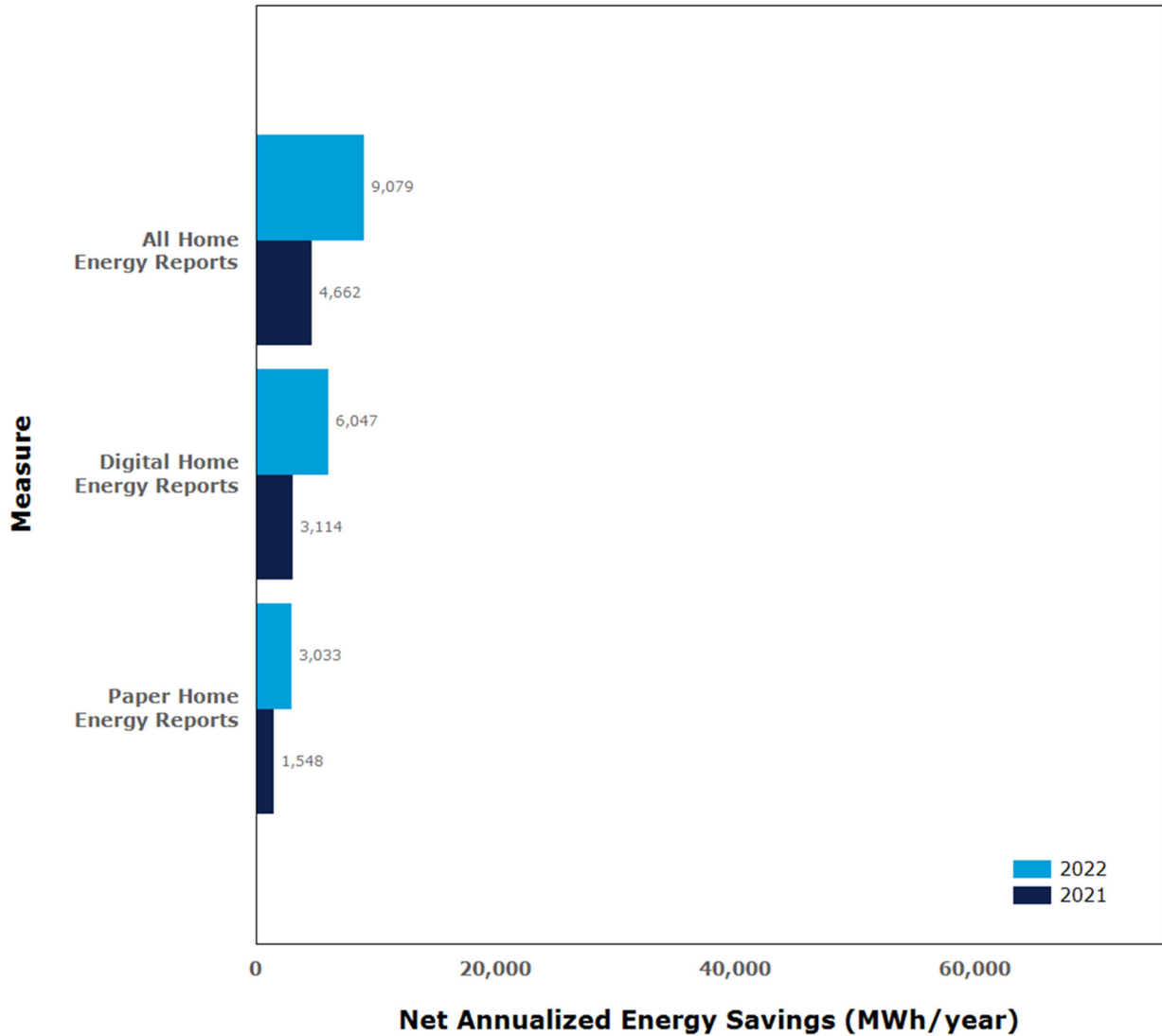




Figure 3-13. Virginia Residential Customer Engagement Program net annualized energy savings by home energy report delivery method (MWh/year)





3.4 Residential Manufactured Housing Program – Virginia

3.4.1 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.



A key program activity involves an auditor performing a walk-through audit covering 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 audit, the auditor will install all low-cost measures that meet the installation protocols.

The auditor will then review the findings and recommendations of the audit report with the homeowner. Part of the auditor'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 auditor will also provide customers with 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 auditor 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, 2021.¹⁰⁴ Upon approval, the Company immediately began building the necessary data infrastructure and rebate portal and implementing the program.

Program participation remained low in 2022. The program manager reported in a 2022 interview that despite marketing efforts at home fairs and community events, the program was struggling to generate participant interest.



¹⁰⁴ Residential Manufactured Housing Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/home-energy-assessment/rmhp-terms-conditions.pdf>. Accessed March 7, 2023.



3.4.2 Methods for the current reporting period

The next section describes the program’s progress toward planned participant, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 3-9 shows Dominion Energy’s initial program planning assumptions, which were used to design the program in the first iteration of the program, and in the most recent program extension.

Table 3-9. Residential Manufactured Housing Program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 15.13 |
| Gross Average Annual Savings per Participant (kWh/year) | 1,970.11 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.51 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.19 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 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 per Participant (US\$) | \$356.08 |

3.4.3 Assessment of program progress toward plan

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

3.4.3.1 Key Virginia program data

Table 3-10 provides performance indicator data annually and cumulatively from program inception through 2022, in Virginia. Shaded cells are considered extraordinarily sensitive information. Appendix O.10 presents detailed program indicators by month, cumulative gross and net savings, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 3-10. Virginia Residential Manufactured Housing Program performance indicators (2020–2022)¹⁰⁵

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|--------------------------------------|---------------------------------|----------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$2,122 | \$30,122 | \$26,196 | \$58,440 |
| Total Costs (\$) | Total ¹⁰⁶ | \$49,716 | \$642,418 | \$627,383 | \$1,319,517 |

¹⁰⁵ The sum of the individual annual values may differ from the total value due to rounding.

¹⁰⁶ 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|----------|-------------|--------------|---------------------------|
| | Planned | \$0 | \$1,129,167 | \$1,733,136 | \$2,862,303 |
| | Variance | \$49,716 | -\$486,749 | -\$1,105,753 | -\$1,542,786 |
| | Annual % of Planned | N/A | 57% | 36% | 46% |
| Participants | Total (Gross) | 0 | 3 | 3 | 6 |
| | Planned (Gross) | 0 | 1,000 | 2,200 | 3,200 |
| | Variance | 0 | -997 | -2,197 | -3,194 |
| | Annual % of Planned (Gross) | N/A | 0% | 0% | 0% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 916 | 310 | 1,225 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 916 | 310 | 1,225 |
| | Net-to-Gross Ratio ¹⁰⁷ | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | -92 | -31 | -123 |
| | Net Adjusted Savings | 0 | 824 | 279 | 1,103 |
| | Planned Savings (Net) | 0 | 1,773,101 | 3,900,822 | 5,673,923 |
| | Annual % Toward Planned Savings (Net) | N/A | 0.05% | 0.01% | 0.02% |
| | Avg. Savings per Participant (Gross) | N/A | 305 | 103 | 204 |
| | Avg. Savings per Participant (Net) | N/A | 275 | 93 | 184 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.1 | 0.03 | 0.1 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.1 | 0.03 | 0.1 |
| | Net-to-Gross Ratio ¹⁰⁸ | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | -0.003 | 0.0 |
| | Net Adjusted Demand | 0.0 | 0.1 | 0.02 | 0.1 |
| | Planned Demand (Net) | 0.0 | 459.0 | 1,009.8 | 1468.8 |
| | Annual % Toward Planned Reduction (Net) | N/A | 0.02% | 0.002% | 0.01% |
| | Avg. Demand per Participant (Gross) | N/A | 0.03 | 0.01 | 0.02 |
| | Avg. Demand per Participant (Net) | N/A | 0.03 | 0.01 | 0.02 |

¹⁰⁷ 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), the implementation vendor has calculated that 24% 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. Methodology, section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.

¹⁰⁸ Ibid.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|-------|-----------|-----------|---------------------------|
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 0.1 | 0.1 | 0.2 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.1 | 0.1 | 0.2 |
| | Net-to-Gross Ratio ¹⁰⁹ | - | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | 0.1 | 0.1 | 0.2 |
| | Planned Demand (Net) | - | 171.0 | 376.2 | 547.2 |
| | Annual % Toward Planned Reduction (Net) | - | 0.06% | 0.01% | 0.03% |
| | Avg. Demand per Participant (Gross) | - | 0.04 | 0.02 | 0.03 |
| | Avg. Demand per Participant (Net) | - | 0.03 | 0.02 | 0.03 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$10,748 | \$9,740 | \$9,740 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$35 | \$48 | \$48 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$381,172 | \$523,376 | \$523,376 |
| | Cml Annual \$EM&V per Total Costs (\$) | 92.1% | 22.1% | 18.0% | 18.0% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$15 | \$29 | \$29 |

3.4.3.2 Additional Virginia program data

Figure 3-14 and Figure 3-15 show the program’s participation and gross annualized energy savings, respectively, by measure type and year in Virginia. Other detailed program participation and savings at the measure level are provided in Appendix O.10.

Note that in these charts, participation is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data section above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

In 2022, the program enrolled three participants, all of whom adopted lighting measures, as shown in Figure 3-14 and Figure 3-15. All three participants who enrolled in 2022 live in manufactured homes.

¹⁰⁹ Ibid.



Figure 3-14. Residential Manufactured Housing Program participation by measure and year

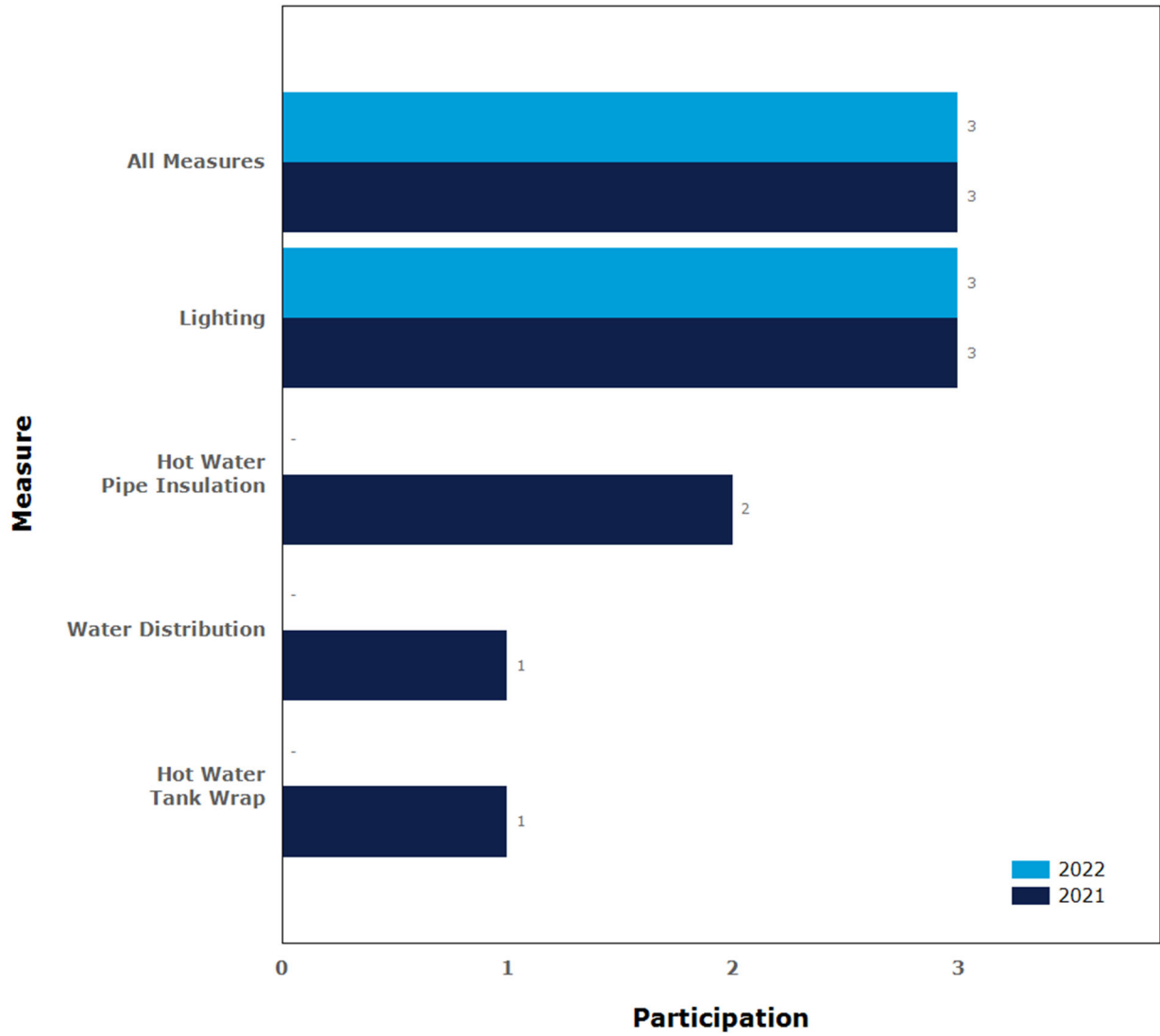
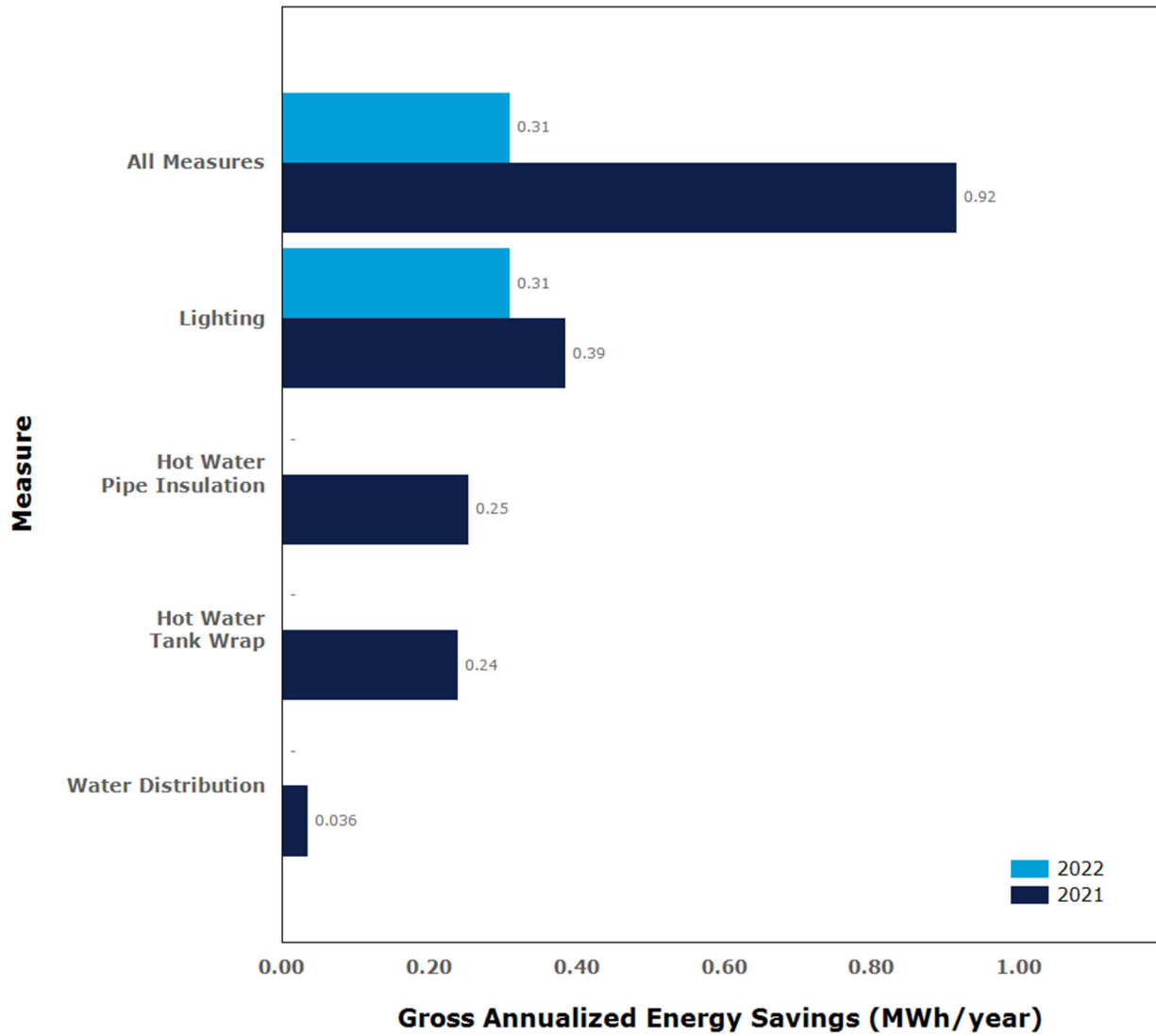




Figure 3-15. Virginia Residential Manufactured Housing Program gross annualized energy savings by measure and year (MWh/year)





3.5 Residential Multifamily Program – Virginia

3.5.1 Program description

The Multifamily Program is available in Virginia and provides property owners and managers with an on-site energy assessment 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 also installs some energy efficient measures during the assessment.



The Program contains both residential and non-residential components. The residential component of the Program reports the energy efficient measures installed in residential units. Measures that the Program installed in common areas, or on behalf of non-residential accounts, appear in the reporting for the non-residential component of the Program. This section of the report discusses the residential portion of the Program. The discussion of the non-residential component of this Program appears in Section 7.1.

The Program received a fraction of its 2022 participation goals. The Program Manager attributes low participation to unsuccessful outreach and low contractor availability in the beginning of the year. However, they have pivoted to a new outreach approach using contractor networks and organizations with much greater success.

Table 3-11 details the energy efficient measures that are eligible for the residential component of the Program.

Table 3-11. Measures offered through Residential Multifamily Program

| End use | Measure |
|---------------------------|--|
| Domestic Hot Water | ¾" Water Heater (WH) Pipe Insulation |
| | ½" WH Pipe Insulation |
| | WH Turndown 10 degrees |
| | Fixed Showerhead (1.5 Gallons Per Minute (GPM) max) |
| | Handheld Showerhead (1.5 GPM max) |
| | Kitchen Swivel Aerator (1.5 GPM max) |
| | Bathroom Aerator (1.5 GPM max) |
| Lighting | Decorative LED |
| | LED Globe |
| | LED Downlight |
| Refrigeration | Refrigerator Coil Brush |
| | Refrigerator Thermometer |
| Major Measures | Tune-Up on Heat Pump System and/or Central AC |
| | Packaged Terminal Heat Pump and/or Central AC Upgrade |
| | Smart Thermostat on Heat Pump and/or Central AC, Replacing a Manual and/or Programmable Thermostat |
| | Air Sealing |
| | Duct Sealing |
| | Attic Insulation |



| End use | Measure |
|-------------------------------|------------------------------|
| | Drill & Fill Wall Insulation |
| ENERGY STAR Appliances | Refrigerator |
| | Room/Wall AC Unit |
| | Clothes Washer |
| | Clothes Dryer |

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.

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, 2021.¹¹⁰

3.5.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which appears in Appendix E. For the current period, the evaluation approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 3-12 outlines Dominion Energy’s initial planning assumptions that were used to design the Program.

Table 3-12. Residential Multifamily Housing program planning assumptions system-wide

| Assumption | Value |
|---|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 10.22 |
| Gross Average Annual Savings per Participant (kWh/year) | 948.73 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.35 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.11 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 886.26 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.315 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.099 |
| Average Rebate per Participant (US\$) | \$100.37 |

3.5.3 Assessment of program progress toward plan

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

¹¹⁰ Residential Multifamily Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/home-energy-assessment/rmfp-terms-conditions.pdf>. Accessed March 9, 2023.



3.5.3.1 Key Virginia program data

Table 3-13 provides performance indicator data annually and cumulatively from Program inception through 2022, in Virginia. Shaded cells are considered extraordinarily sensitive information. Appendix O.11 provides detailed program indicators by month and year, program performance by measure, and a comparison of program savings with usage by rate schedule.

Appendix Q provides cumulative gross and net savings.

Table 3-13. Residential Multifamily Housing Program performance indicators (2020-2022)¹¹¹

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------------|----------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | | | | | |
| | Indirect Other (Administrative) | \$1,235 | \$29,521 | \$32,108 | \$62,863 |
| | | | | | |
| Total Costs (\$) | Total ¹¹² | \$28,940 | \$629,586 | \$768,978 | \$1,427,504 |
| | Planned | \$0 | \$1,677,691 | \$2,269,146 | \$3,946,837 |
| | Variance | \$28,940 | -\$1,048,105 | -\$1,500,168 | -\$2,519,334 |
| | Annual % of Planned | N/A | 38% | 34% | 36% |
| Participants | Total (Gross) | 0 | 9 | 1,634 | 1,643 |
| | Planned (Gross) | 0 | 9,000 | 14,000 | 23,000 |
| | Variance | 0 | -8,991 | -12,366 | -21,357 |
| | Annual % of Planned (Gross) | N/A | 0% | 12% | 7% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 335 | 428,505 | 428,840 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 335 | 428,505 | 428,840 |
| | Net-to-Gross Ratio ¹¹³ | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | -33 | -42,851 | -42,884 |
| | Net Adjusted Savings | 0 | 301 | 385,655 | 385,956 |
| | Planned Savings (Net) | 0 | 7,976,317 | 12,407,604 | 20,383,921 |
| | Annual % Toward Planned Savings (Net) | N/A | 0.00% | 3.11% | 1.89% |
| | Avg. Savings per Participant (Gross) | N/A | 37 | 262 | 261 |

¹¹¹ The sum of the individual annual values may differ from the total value due to rounding.

¹¹² 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.

¹¹³ 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), the implementation vendor has calculated that 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. Methodology, section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|-------|-----------|---------|---------------------------|
| | Avg. Savings per Participant (Net) | N/A | 33 | 236 | 235 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 106.7 | 106.7 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 106.7 | 106.7 |
| | Net-to-Gross Ratio ¹¹⁴ | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | -10.7 | -10.7 |
| | Net Adjusted Demand | 0.0 | 0.0 | 96.0 | 96.0 |
| | Planned Demand (Net) | 0.0 | 2,835.0 | 4,410.0 | 7,245.0 |
| | Annual % Toward Planned Reduction (Net) | N/A | 0.00% | 2.18% | 1.33% |
| | Avg. Demand per Participant (Gross) | N/A | 0.00 | 0.07 | 0.06 |
| | Avg. Demand per Participant (Net) | N/A | 0.00 | 0.06 | 0.06 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 0.0 | 168.7 | 168.8 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.0 | 168.7 | 168.8 |
| | Net-to-Gross Ratio ¹¹⁵ | - | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | - | 0.0 | -16.9 | -16.9 |
| | Net Adjusted Demand | - | 0.0 | 151.9 | 151.9 |
| | Planned Demand (Net) | - | 891.0 | 1,386.0 | 2,277.0 |
| | Annual % Toward Planned Reduction (Net) | - | 0.00% | 11.0% | 6.67% |
| | Avg. Demand per Participant (Gross) | - | 0.01 | 0.1 | 0.1 |
| | Avg. Demand per Participant (Net) | - | 0.00 | 0.09 | 0.09 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$3,417 | \$38 | \$38 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$92 | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$820,780 | \$589 | \$589 |
| | Cml Annual \$EM&V per Total Costs (\$) | 92.4% | 13.9% | 10.7% | 10.7% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$7 | \$53 | \$53 |

¹¹⁴ Ibid.

¹¹⁵ Ibid.



3.5.3.2 Additional Virginia program data

Figure 3-16 and Figure 3-17 show the Program's participation and gross annualized energy savings, respectively, by measure type and year in Virginia. Other detailed Program participation and savings at the measure level appear in Appendix O.11.

Note that in these charts, participation is the count of new unique customers in the "all measures" presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from the participation counts that appear in the Key Virginia program data section above, where a participant is only counted once (the first time they receive a rebate). After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Figure 3-16 shows that in 2022, HVAC Tune Up and Refrigerator Thermometer were the most frequently adopted measures, completed by 90% and 52% of participants, respectively.



Figure 3-16. Residential Multifamily Housing Program participation by measure and year

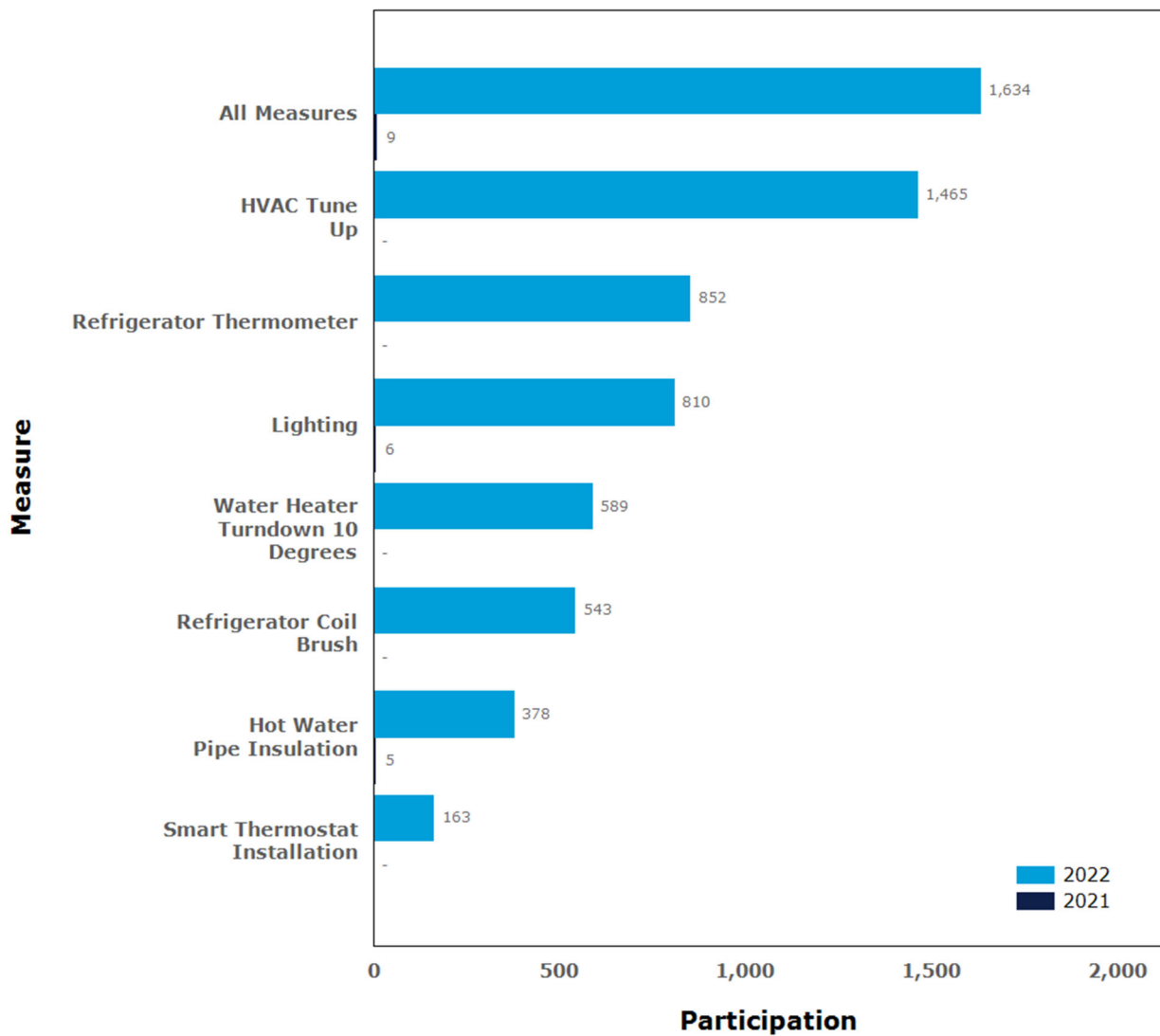
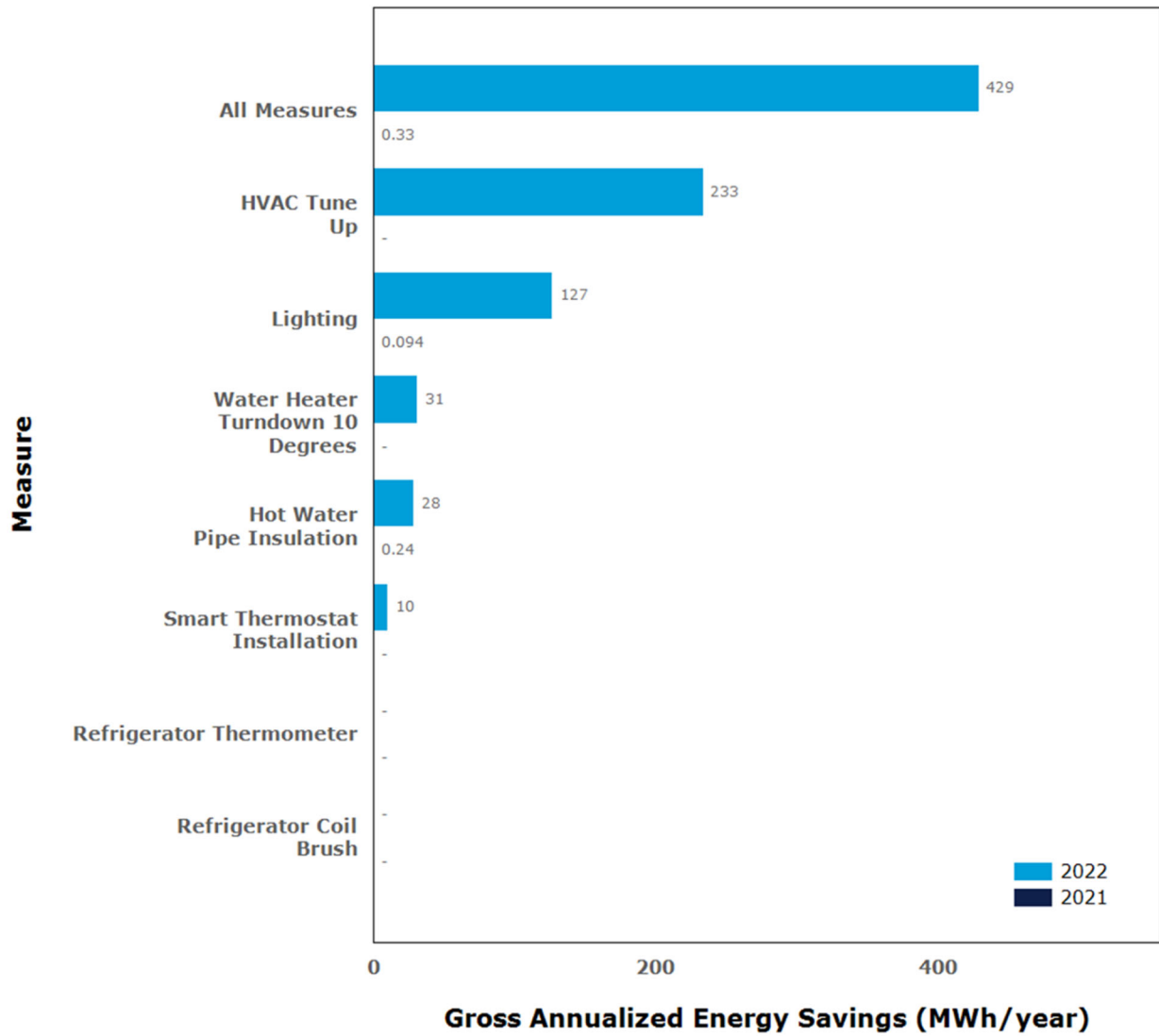


Figure 3-17 shows that HVAC Tune Ups accounted for the majority (54%) of energy savings in 2022. Refrigerator Thermometer measures do not have savings attributed to it. Lighting installations, which is comprised of different types of LEDs, generated the second highest savings, accounting for 30% of program savings in 2022.



Figure 3-17. Virginia Residential Multifamily Housing Program gross annualized energy savings by measure and year (MWh/year)





3.6 Residential Home Retrofit Program – Virginia and North Carolina

3.6.1 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 audit of customer homes, direct install 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 robust audit and pool of energy efficiency measures than those provided in the Home Energy Assessment Program, featured in Section 3.2



The eligible energy efficiency measures are detailed in Table 3-14.

Table 3-14. Measures offered through Residential Home Retrofit Program

| End use | Measure |
|---------------------------|--|
| Domestic Hot Water | ¾" Water Heater (WH) Pipe Insulation |
| | ½" WH Pipe Insulation |
| | WH Turndown 10 degrees |
| | Fixed Showerhead (1.5 Gallons Per Minute (GPM) max) |
| | Handheld Showerhead (1.5 GPM max) |
| | Kitchen Swivel Aerator (1.5 GPM max) |
| | Bathroom Aerator (1.5 GPM max) |
| Lighting | Decorative LED |
| | LED Globe |
| | LED Downlight |
| Refrigeration | Refrigerator Coil Brush |
| | Refrigerator Thermometer |
| Major Measures | Tune-Up on Heat Pump System and/or Central AC |
| | Duct Insulation on Heat Pump System and/or Central AC |
| | Heat Pump Upgrade |
| | Mini Split Heat Pump Upgrade |
| | Heat Pump Water Heater Replacement |
| | ECM Fan Motor on Heat Pump System and/or Central AC |
| | Smart to Central Home Energy Management System |
| | Smart Thermostat on Heat Pump and/or Central AC, replacing a manual and/or programmable thermostat |
| | Air Sealing |
| | Duct Sealing |
| Attic Insulation | |



| End use | Measure |
|---------|------------------------------|
| | Drill & Fill Wall Insulation |
| | Basement Wall Insulation |
| | Crawl Space Insulation |

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 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 the Company has 90 days to process it. Customers must contact a participating contractor to receive the assessment.

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, 2021.¹¹⁶ 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, 2021.¹¹⁷

Participation decreased from 2021 to 2022, resulting in lower savings in 2022 as compared to initial plans. The program manager indicated that low contractor availability, supply chain disruptions and lingering effects of the pandemic may have impacted participation in 2022.

3.6.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 3-15 outlines Dominion Energy’s initial program planning assumptions that were used to design the program in the first iteration of the program, and in the most recent program extension.

Table 3-15. Residential Home Retrofit Program planning assumptions system-wide

| Assumption | Value |
|---|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 23.7 |
| Gross Average Annual Savings per Participant (kWh/year) | 2,161 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.621 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.230 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 1,945 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.559 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.207 |
| Average Rebate per Participant (US\$) | \$378.61 |

¹¹⁶ Virginia Residential Home Retrofit Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/home-energy-assessment/rhr-terms-conditions.pdf>. Accessed March 7, 2023.

¹¹⁷ North Carolina Residential Home Retrofit Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/north-carolina---electric/save-energy/home-energy-assessment/res-home-retrofit-terms-conditions-nce.pdf>. Accessed March 7, 2023.



3.6.3 Assessment of program progress toward plan

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

3.6.3.1 Key Virginia program data

Table 3-16 provides performance indicator data annually and cumulatively from program inception through 2022, in Virginia. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by month are in Appendix O.12, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are presented in Appendix Q.

Table 3-16. Virginia Residential Home Retrofit Program performance indicators (2020–2022)¹¹⁸

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---------------------------------------|-----------------------------------|----------|-------------|--------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$2,428 | \$40,585 | \$35,604 | \$78,616 |
| Total Costs (\$) | Total ¹¹⁹ | \$56,887 | \$865,549 | \$852,714 | \$1,775,149 |
| | Planned | \$0 | \$1,308,446 | \$1,874,062 | \$3,182,508 |
| | Variance | \$56,887 | -\$442,897 | -\$1,021,348 | -\$1,407,359 |
| | Annual % of Planned | N/A | 66% | 46% | 56% |
| Participants | Total (Gross) | 0 | 99 | 50 | 149 |
| | Planned (Gross) | 0 | 846 | 1,880 | 2,726 |
| | Variance | 0 | -747 | -1,830 | -2,577 |
| | Annual % of Planned (Gross) | N/A | 12% | 3% | 5% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 207,565 | 127,675 | 335,240 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 207,565 | 127,675 | 335,240 |
| | Net-to-Gross Ratio ¹²⁰ | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | -20,757 | -12,767 | -33,524 |
| | Net Adjusted Savings | 0 | 186,809 | 114,907 | 301,716 |
| | Planned Savings (Net) | 0 | 1,645,617 | 3,656,927 | 5,302,543 |
| Annual % Toward Planned Savings (Net) | N/A | 11.4% | 3.14% | 5.69% | |

¹¹⁸ The sum of the individual annual values may differ from the total value due to rounding.

¹¹⁹ 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.

¹²⁰ 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), the implementation vendor has calculated that 87% 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. Methodology, section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|-------|-------|---------|---------------------------|
| | Avg. Savings per Participant (Gross) | N/A | 2,097 | 2,553 | 2,250 |
| | Avg. Savings per Participant (Net) | N/A | 1,887 | 2,298 | 2,025 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 68.4 | 30.1 | 98.4 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 68.4 | 30.1 | 98.4 |
| | Net-to-Gross Ratio ¹²¹ | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | -6.8 | -3.0 | -9.8 |
| | Net Adjusted Demand | 0.0 | 61.5 | 27.1 | 88.6 |
| | Planned Demand (Net) | 0.0 | 472.6 | 1,050.3 | 1,522.9 |
| | Annual % Toward Planned Reduction (Net) | N/A | 13.0% | 2.58% | 5.82% |
| | Avg. Demand per Participant (Gross) | N/A | 0.7 | 0.6 | 0.7 |
| | Avg. Demand per Participant (Net) | N/A | 0.6 | 0.5 | 0.6 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 75.0 | 44.3 | 119.3 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 75.0 | 44.3 | 119.3 |
| | Net-to-Gross Ratio ¹²² | - | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | - | -7.5 | -4.4 | -11.9 |
| | Net Adjusted Demand | - | 67.5 | 39.9 | 107.4 |
| | Planned Demand (Net) | - | 174.7 | 388.3 | 563.1 |
| | Annual % Toward Planned Reduction (Net) | - | 38.7% | 10.3% | 19.1% |
| | Avg. Demand per Participant (Gross) | - | 0.8 | 0.9 | 0.8 |
| | Avg. Demand per Participant (Net) | - | 0.7 | 0.8 | 0.7 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$434 | \$528 | \$528 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0 | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$629 | \$799 | \$799 |
| | Cml Annual \$EM&V per Total Costs (\$) | 90.6% | 17.7% | 17.8% | 17.8% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$234 | \$492 | \$492 |

¹²¹ Ibid.

¹²² Ibid.



3.6.3.2 Key North Carolina program data

Table 3-17 provides performance indicator data annually and cumulatively from program inception through 2022, in North Carolina. Shaded cells are considered extraordinarily sensitive information. Appendix P.8 provides detailed program indicators by month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 3-17. North Carolina Residential Home Retrofit Program performance indicators (2021-2022)¹²³

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|---------------------------------------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$1,676 | \$2,021 | \$3,696 |
| Total Costs (\$) | Total ¹²⁴ | \$35,738 | \$48,397 | \$84,135 |
| | Planned | \$81,417 | \$119,576 | \$200,993 |
| | Variance | -\$45,678 | -\$71,179 | -\$116,858 |
| | Annual % of Planned | 44% | 40% | 42% |
| Participants | Total (Gross) | 0 | 0 | 0 |
| | Planned (Gross) | 54 | 120 | 174 |
| | Variance | -54 | -120 | -174 |
| | Annual % of Planned (Gross) | 0% | 0% | 0% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 0 | 0 |
| | Realization Rate | N/A | N/A | N/A |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 0 | 0 |
| | Net-to-Gross Ratio ¹²⁵ | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | 0 | 0 | 0 |
| | Net Adjusted Savings | 0 | 0 | 0 |
| | Planned Savings (Net) | 105,039 | 233,421 | 338,460 |
| | Annual % Toward Planned Savings (Net) | 0% | 0% | 0% |
| | Avg. Savings per Participant (Gross) | N/A | N/A | N/A |
| | Avg. Savings per Participant (Net) | N/A | N/A | N/A |

¹²³ The sum of the individual annual values may differ from the total value due to rounding.

¹²⁴ 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.

¹²⁵ 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), the implementation vendor has calculated that 87% 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 section 3.1.3 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|---|------|-------|---------------------------|
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 0.0 |
| | Realization Rate | N/A | N/A | N/A |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ¹²⁶ | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | 30.2 | 67.0 | 97.2 |
| | Annual % Toward Planned Reduction (Net) | 0% | 0% | 0% |
| | Avg. Demand per Participant (Gross) | N/A | N/A | N/A |
| | Avg. Demand per Participant (Net) | N/A | N/A | N/A |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 0.0 |
| | Realization Rate | N/A | N/A | N/A |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ¹²⁷ | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | 11.2 | 24.8 | 35.9 |
| | Annual % Toward Planned Reduction (Net) | 0% | 0% | 0% |
| | Avg. Demand per Participant (Gross) | N/A | N/A | N/A |
| | Avg. Demand per Participant (Net) | N/A | N/A | N/A |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | N/A | N/A |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | N/A | N/A |
| | Cml Annual \$Admin. per kW (Gross) | N/A | N/A | N/A |
| | Cml Annual \$EM&V per Total Costs (\$) | 6.9% | 14.2% | 14.2% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | N/A | N/A |

3.6.3.3 Additional Virginia program data

Figure 3-18 and Figure 3-19 show the program’s participation and gross annualized energy savings, respectively, by measure type and year in Virginia. Other detailed program participation and savings at the measure level are provided in Appendix O.12.

Note that in these charts, participation is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program

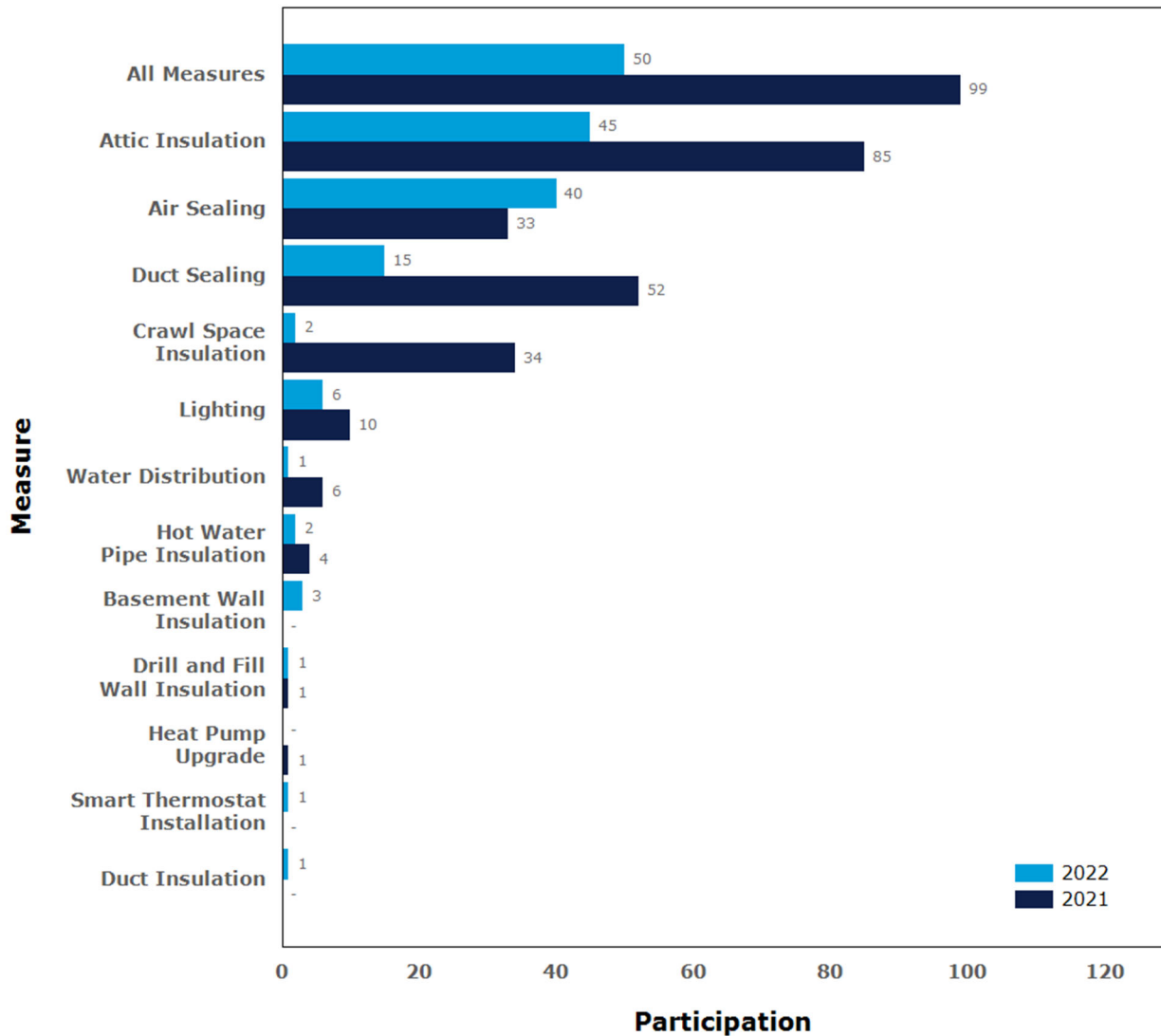
¹²⁶ Ibid.
¹²⁷ Ibid.



data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

In 2022, the most frequently adopted measure was attic insulation, which 90% of the participants installed, as shown in Figure 3-18. Air sealing was the second most adopted measure, completed by 80% of the participants.

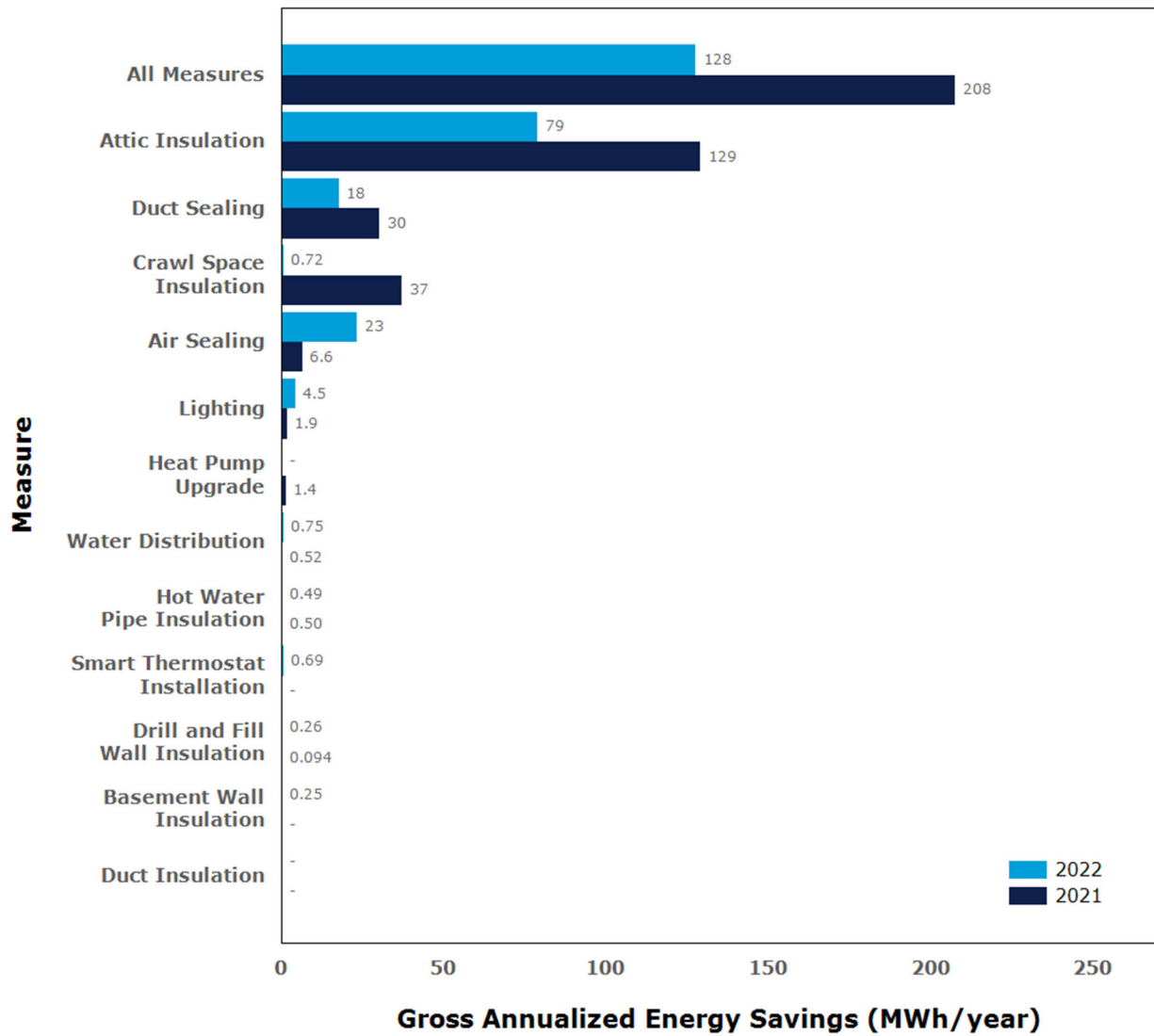
Figure 3-18. Residential Home Retrofit Program participation by measure and year



In addition to being the most frequently adopted measure, attic insulation also accounted for the majority of savings (62%) achieved by the program in 2022, as shown in Figure 3-19.



Figure 3-19. Virginia Residential Home Retrofit Program gross annualized energy savings by measure and year (MWh/year)



3.6.3.4 Additional North Carolina program data

No North Carolina customers have participated in the program through 2022.



3.7 Residential Virtual Energy Audit Program – Virginia and North Carolina

3.7.1 Program description

The Residential Virtual Energy Audit Program offers residential customers the opportunity to participate in an online, self-directed home energy assessment. The energy assessment is completed entirely by the customer, with no trade ally entering the home. Customers who complete the self-assessment have the opportunity to receive a kit of low-cost measures at no cost to them. The measures would be based on questions in the assessment determining which measures would address specific energy savings opportunities in each home.



The program is available to all customers residences in Dominion Energy's Virginia and North Carolina service territory. The measures customers are eligible to receive include low-flow showerheads and aerators, water heater pipe insulation, LED lamp upgrades, door/window weatherstripping, door sweep, 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 and EM&V tracking started in the summer of 2022 for Virginia and North Carolina.

The program only achieved 4% of its planned participant savings goal in 2022. In part, this may be attributed to the delayed program start but is still a cause for concern.

3.7.2 Methods for the current reporting period

The next section describes the program's progress toward planned participant, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 3-18 outlines Dominion Energy's initial program planning assumptions, which were used to design the program.



Table 3-18. Residential Virtual Audits program planning assumptions system-wide

| Assumption | Value |
|--|-----------------------|
| Target Market | Residential customers |
| NTG Factor | 60% |
| Measure Life (years) | 16.88 |
| 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\$) | \$51.14 |

3.7.3 Assessment of program progress toward plan

3.7.3.1 Key Virginia program data

Table 3-19 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Appendix O.13 provides program performance by measure and a comparison of program savings with usage by rate schedule. Appendix Q shows detailed program indicators by year and month and cumulative gross and net savings.

Table 3-19. Virginia Residential Virtual Audit Program performance indicators (2022)¹²⁸

| Category | Item | 2021 | 2022 | Program total (2021 - 2022) |
|--------------------------------------|---------------------------------|---------|--------------|-----------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$209 | \$27,770 | \$27,980 |
| Total Costs (\$) | Total ¹²⁹ | \$4,465 | \$665,100 | \$669,556 |
| | Planned | \$0 | \$4,205,740 | \$4,205,740 |
| | Variance | \$4,465 | -\$3,540,640 | -\$3,536,175 |
| | Annual % of Planned | N/A | 16% | 16% |
| Participants | Total (Gross) | 0 | 2,149 | 2,149 |
| | Planned (Gross) | 0 | 56,400 | 56,400 |
| | Variance | 0 | -54,251 | -54,251 |
| | Annual % of Planned (Gross) | N/A | 4% | 4% |

¹²⁸ The sum of the individual annual values may differ from the total value due to rounding.

¹²⁹ 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 | Program total (2021 - 2022) |
|---|---|------|------------|-----------------------------|
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 1,972,641 | 1,972,641 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 1,972,641 | 1,972,641 |
| | Net-to-Gross Ratio | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | 0 | -789,056 | -789,056 |
| | Net Adjusted Savings | 0 | 1,183,584 | 1,183,584 |
| | Planned Savings (Net) | 0 | 16,784,640 | 16,784,640 |
| | Annual % Toward Planned Savings (Net) | N/A | 7.05% | 7.05% |
| | Avg. Savings per Participant (Gross) | N/A | 918 | 918 |
| | Avg. Savings per Participant (Net) | N/A | 551 | 551 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 163.6 | 163.6 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 163.6 | 163.6 |
| | Net-to-Gross Ratio | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | 0.0 | -65.4 | -65.4 |
| | Net Adjusted Demand | 0.0 | 98.2 | 98.2 |
| | Planned Demand (Net) | 0.0 | 5,752.8 | 5,752.8 |
| | Annual % Toward Planned Reduction (Net) | N/A | 1.71% | 1.71% |
| | Avg. Demand per Participant (Gross) | N/A | 0.08 | 0.08 |
| | Avg. Demand per Participant (Net) | N/A | 0.05 | 0.05 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 269.3 | 269.3 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 269.3 | 269.3 |
| | Net-to-Gross Ratio | N/A | 60% | 60% |
| | Net-to-Gross Adjustment | 0.0 | -107.7 | -107.7 |
| | Net Adjusted Demand | 0.0 | 161.6 | 161.6 |
| | Planned Demand (Net) | 0.0 | 3,722.4 | 3,722.4 |
| | Annual % Toward Planned Reduction (Net) | N/A | 4.34% | 4.34 |
| | Avg. Demand per Participant (Gross) | N/A | 0.1 | 0.1 |
| | Avg. Demand per Participant (Net) | N/A | 0.08 | 0.08 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$13 | \$13 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0.01 | \$0.01 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$171 | \$171 |
| | Cml Annual \$EM&V per Total Costs (\$) | 0.0% | 7.2% | 7.2% |



| Category | Item | 2021 | 2022 | Program total (2021 - 2022) |
|----------|---|------|-------|-----------------------------|
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$119 | \$119 |

3.7.3.2 Key North Carolina program data

Table 3-20 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Appendix P.9 provides detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 3-20. North Carolina Residential Virtual Audit Program performance indicators (2022)¹³⁰

| Category | Item | 2022 | Program total (2022) |
|---|---------------------------------------|-----------|----------------------|
| Operations and Management Costs (\$) | | | |
| | Indirect Other (Administrative) | \$647 | \$647 |
| Total Costs (\$) | Total ¹³¹ | \$15,492 | \$15,492 |
| | Planned | \$107,801 | \$107,801 |
| | Variance | -\$92,308 | -\$92,308 |
| | Annual % of Planned | 14% | 14% |
| Participants | Total (Gross) | 39 | 39 |
| | Planned (Gross) | 3,600 | 3,600 |
| | Variance | -3,561 | -3,561 |
| | Annual % of Planned (Gross) | 1% | 1% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 40,749 | 40,749 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Savings | 40,749 | 40,749 |
| | Net-to-Gross Ratio | 60% | 60% |
| | Net-to-Gross Adjustment | -16,300 | -16,300 |
| | Net Adjusted Savings | 24,450 | 24,450 |
| | Planned Savings (Net) | 1,071,360 | 1,071,360 |
| | Annual % Toward Planned Savings (Net) | 2.28% | 2.28% |
| | Avg. Savings per Participant (Gross) | 1,045 | 1,045 |
| Avg. Savings per Participant (Net) | 627 | 627 | |

¹³⁰ The sum of the individual annual values may differ from the total value due to rounding.

¹³¹ 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 | Program total (2022) |
|---|---|--------|----------------------|
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 3.5 | 3.5 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 |
| | Adjusted Gross Demand | 3.5 | 3.5 |
| | Net-to-Gross Ratio | 60% | 60% |
| | Net-to-Gross Adjustment | -1.4 | -1.4 |
| | Net Adjusted Demand | 2.1 | 2.1 |
| | Planned Demand (Net) | 367.2 | 367.2 |
| | Annual % Toward Planned Reduction (Net) | 0.57% | 0.57% |
| | Avg. Demand per Participant (Gross) | 0.09 | 0.09 |
| | Avg. Demand per Participant (Net) | 0.05 | 0.05 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 5.6 | 5.6 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 |
| | Adjusted Gross Demand | 5.6 | 5.6 |
| | Net-to-Gross Ratio | 60% | 60% |
| | Net-to-Gross Adjustment | -2.2 | -2.2 |
| | Net Adjusted Demand | 3.4 | 3.4 |
| | Planned Demand (Net) | 237.6 | 237.6 |
| | Annual % Toward Planned Reduction (Net) | 1.41% | 1.41% |
| | Avg. Demand per Participant (Gross) | 0.1 | 0.1 |
| | Avg. Demand per Participant (Net) | 0.09 | 0.09 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$17 | \$17 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.02 | \$0.02 |
| | Cml Annual \$Admin. per kW (Gross) | \$185 | \$185 |
| | Cml Annual \$EM&V per Total Costs (\$) | 11.0% | 11.0% |
| | Cml Annual \$Rebate per Participant (Gross) | \$127 | \$127 |

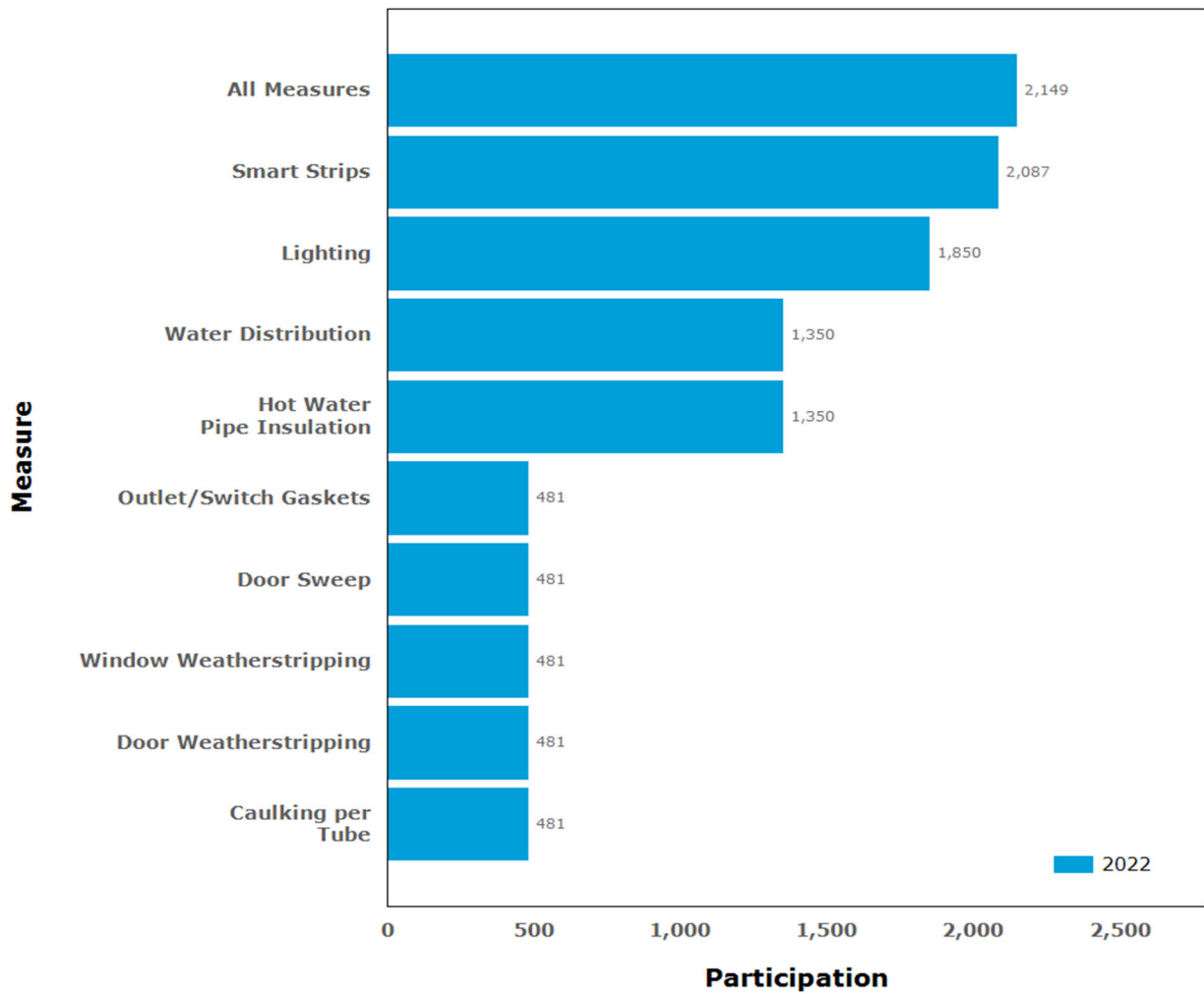
3.7.3.3 Additional Virginia program data

Figure 3-20 and Figure 3-21 show Virginia participants and gross annualized energy savings by measure and year. Other detailed program participation and savings at the measure level are provided in Appendix O.13.

Note that participation in these charts is the count of new unique customers in the “All Measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years.



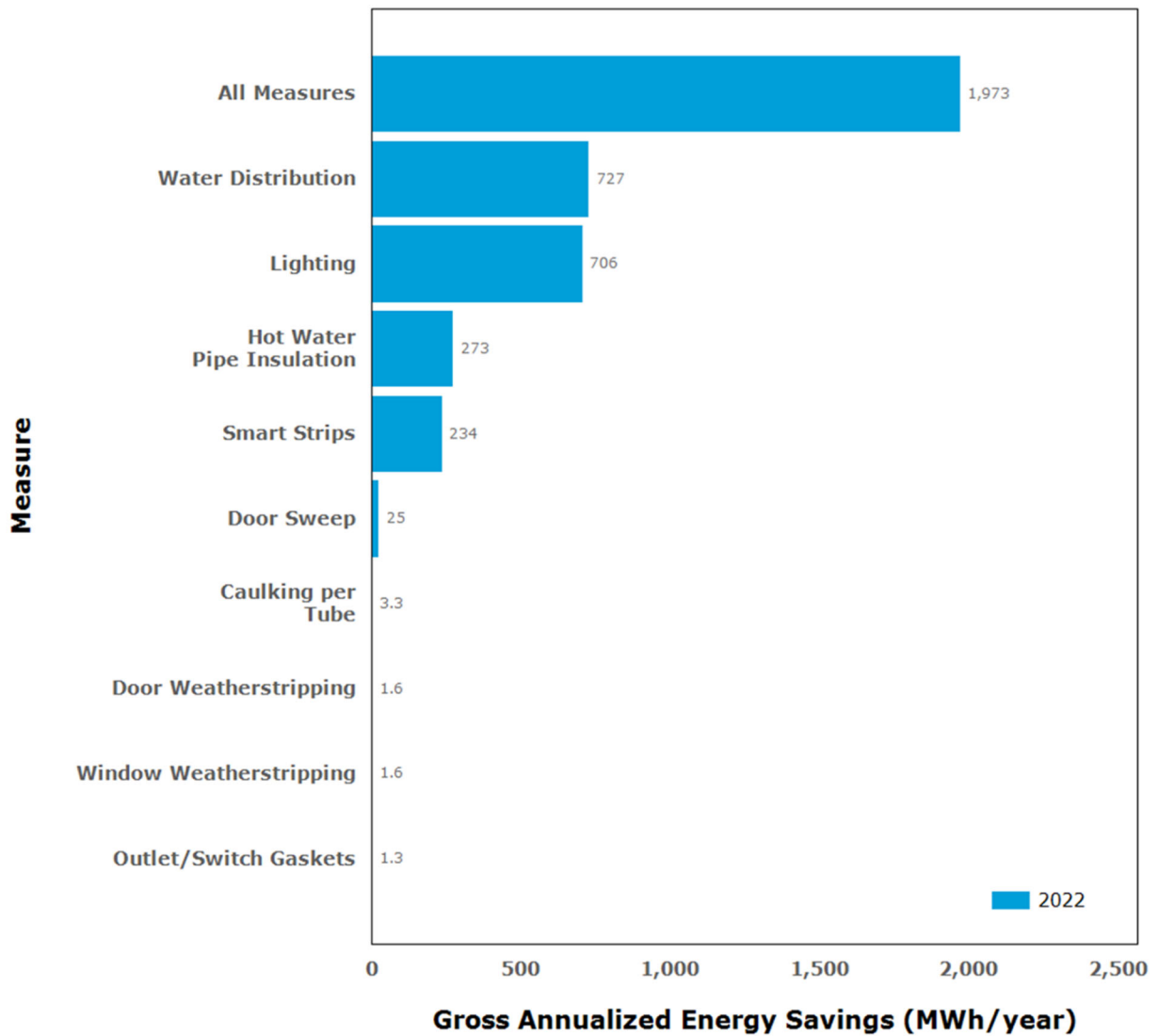
Figure 3-20. Virginia Residential Virtual Audit Program participation by measure and year



The first participants in the program enrolled in July 2022, with a total of 2,149 for the year. Smart strips were the most popular measure with 97% of participants receiving a smart strip, followed by lighting (86%), water distribution and hot water pipe insulation (63%), and weatherization measures (22%).



Figure 3-21. Virginia Residential Virtual Audit Program gross annualized energy savings by measure and year



The program’s gross annualized energy savings can be attributed to the most popular measures that participants received. Water distribution measures account for 37% (727 MWh), followed by Lighting accounts for 36% (706 MWh), hot water pipe insulation (14% or 273 MWh) and smart strips (12% or 234 MWh). The remainder of installed measures had relatively minimal annualized energy savings.

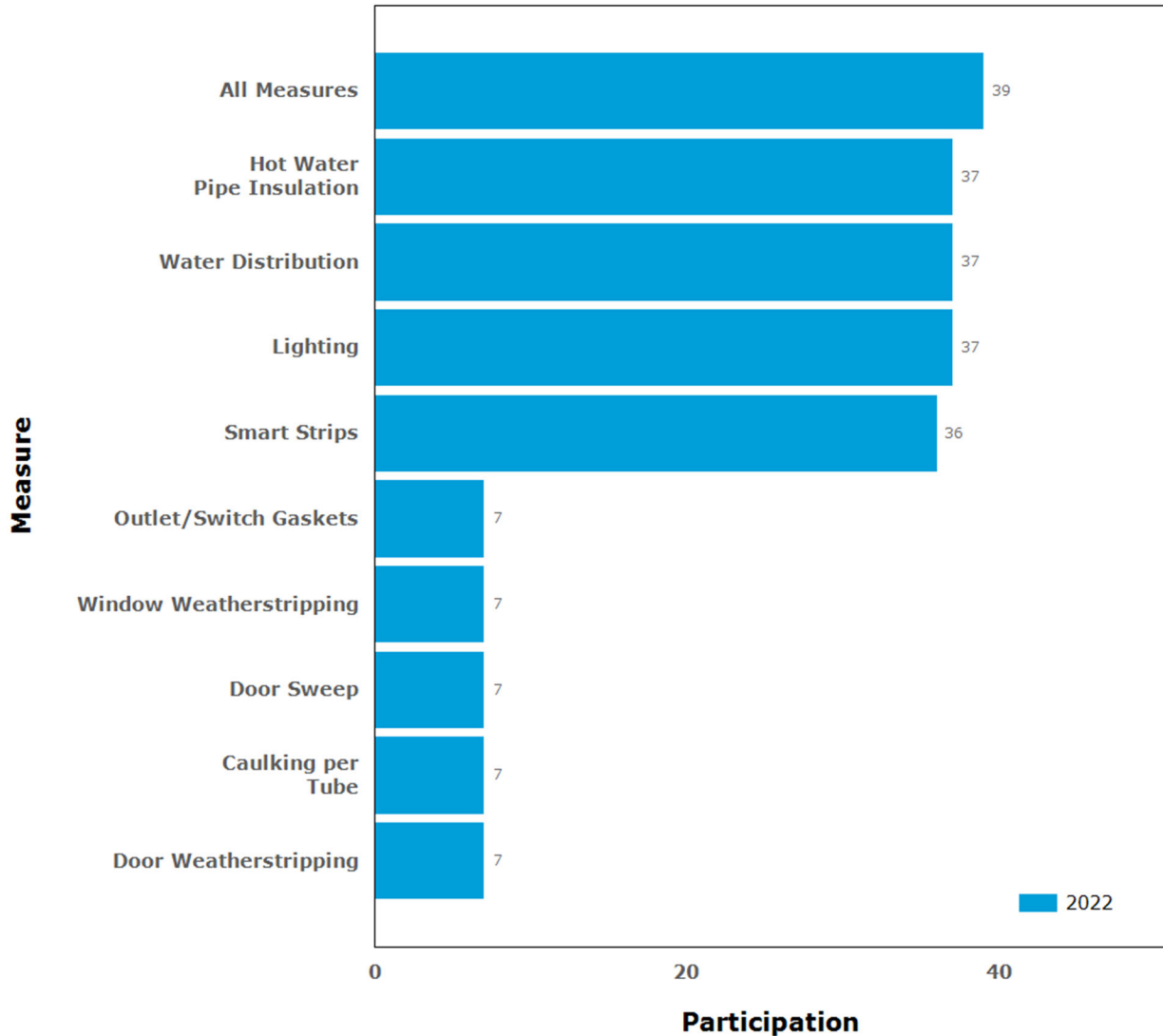
3.7.3.4 Additional North Carolina program data

Figure 3-22 and Figure 3-23 show North Carolina participants and gross annualized energy savings by measure and year. Other detailed program participation and savings at the measure level appear in Appendix P.9.



Note that participation in these charts is the count of new unique customers in the “All Measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years.

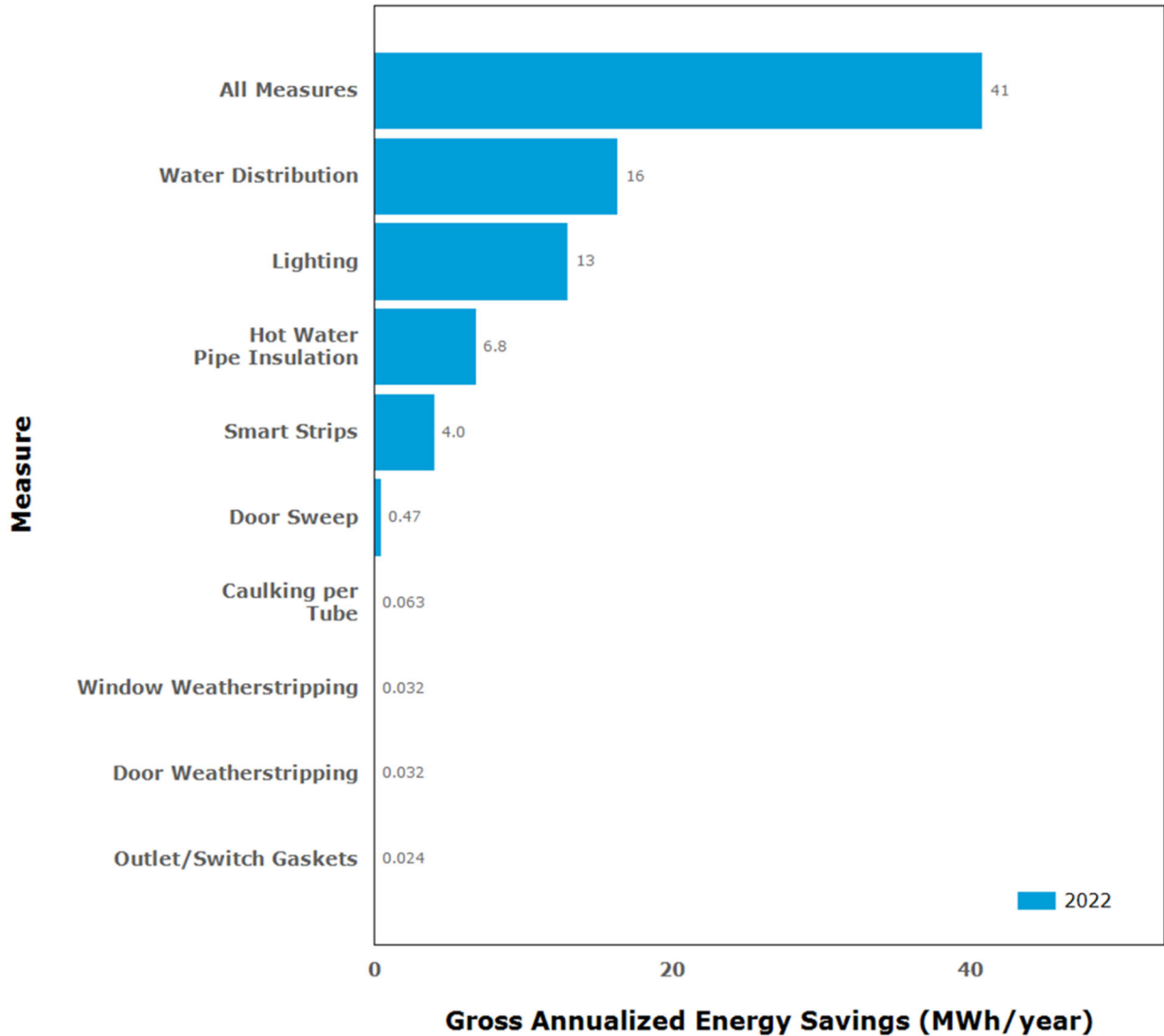
Figure 3-22. North Carolina Virtual Audit Program participation by measure and year



The first participants in the program enrolled in the summer of 2022, with a total of 39 for the year. Hot water pipe insulation, water distribution, and lighting were the most popular measures with 95% of participants receiving each measure. The vast majority of participants also received a smart strip (92%) with weatherization measures being the least prevalent (18%).



Figure 3-23. North Carolina Residential Virtual Audit Program gross annualized energy savings by measure and year



The program’s gross annualized energy savings can be attributed to the most popular measures that participants received. Water distribution accounts for 40% (16 MWh/year), followed by lighting accounts (32% or 13 MWh/year), followed , hot water pipe insulation (17% or 6.8 MWh/year), and smart strips (10% or 4.0 MWh/year). The remainder of installed measures had relatively minimal annualized energy savings.



4 ENERGY EFFICIENCY – RESIDENTIAL NEW CONSTRUCTION

4.1 Residential New Construction Program – Virginia

4.1.1 Program description

The Residential New Construction Program provides incentives to home builders for the construction of new homes that are ENERGY STAR® certified.¹³² 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.

This program was impacted by COVID-related supply chain issues in 2021 that caused delays in construction and likely caused additional delays and decreased participation. Global and local supply chain issues delayed the delivery of HVAC equipment, windows, lumber, and appliances that were required for construction. As a result, enrollment was delayed. In 2022, the program experienced lingering impacts from the COVID-19 pandemic. Early in the year, vendors could not go out and meet with builders and had limited ability to conduct trainings. Additionally, housing market vacillations including significant increases in mortgage interest rates have impacted the program. Despite these challenges, there was a dramatic increase in program participation with 2,560 participants in 2022, up from 1,018 in 2021.

The Virginia SCC finalized an order on October 27, 2021, to conduct baseline studies for at least two DSM programs (PUR-2020-00156). The Residential New Construction Program was one of two Dominion Energy programs selected for a baseline study. The results of that study are included in the report in Appendix J. The study concludes that there was a small natural market for ENERGY STAR certified homes in Dominion Energy's service territory which has room for growth. The study also found that while builders who were already building ENERGY STAR certified homes prior to the program were earlier adopters of the program, the program was driving an increase in the number of ENERGY STAR certified homes being built by those and other builders. Other drivers of ENERGY STAR certified homes included builder competitive motivations and some municipal policies.

4.1.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program which is included in Appendix E. For the current period, the approach included reviewing the tracking data and building models for estimating net energy savings. Demand reductions are

¹³² ENERGY STAR Certified Homes website: https://www.energystar.gov/newhomes/features_benefits, Accessed March 19, 2023.



calculated using the methodology in the DE TRM located in Appendix F. Table 4-1 outlines Dominion Energy’s initial program planning assumptions which were used to design the program.

Table 4-1. Residential New Construction program planning assumptions system-wide

| Assumption | Description |
|--|----------------------|
| Target Market | Residential builders |
| NTG Factor | 87% |
| Measure Life (years) | 25.00 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 1,602.79 |
| 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 per Participant (kWh/year) | 1,394.42 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.77 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.23 |
| Average Rebate (US\$) per Participant | \$858.82 |

4.1.3 Assessment of program progress toward plan

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

4.1.3.1 Key Virginia program data

Table 4-2 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.14 provides detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings. Participation in this program is defined as a unique electric account ID.

Table 4-2. Virginia Residential New Construction program performance indicators (2020–2022)¹³³

| Category | Item | 2020 | 2021 | 2022 | Program total (2020-2022) |
|--------------------------------------|---------------------------------|----------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$1,284 | \$56,428 | \$112,259 | \$169,970 |
| Total Costs (\$) | Total ¹³⁴ | \$30,084 | \$1,203,424 | \$2,688,603 | \$3,922,111 |
| | Planned | \$0 | \$4,218,145 | \$4,560,431 | \$8,778,576 |
| | Variance | \$30,084 | -\$3,014,721 | -\$1,871,828 | -\$4,856,465 |

¹³³ The sum of the individual annual values may differ from the total value due to rounding.

¹³⁴ 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 | 2020 | 2021 | 2022 | Program total (2020-2022) |
|---|---|-------|-----------|-----------|---------------------------|
| | Annual % of Planned | N/A | 29% | 59% | 45% |
| Participants | Total (Gross) | 0 | 1,018 | 2,560 | 3,578 |
| | Planned (Gross) | 0 | 4,250 | 4,548 | 8,798 |
| | Variance | 0 | -3,232 | -1,988 | -5,220 |
| | Annual % of Planned (Gross) | N/A | 24% | 56% | 41% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 1,971,437 | 5,129,363 | 7,100,800 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 1,971,437 | 5,129,363 | 7,100,800 |
| | Net-to-Gross Ratio | N/A | 87% | 87% | 87% |
| | Net-to-Gross Adjustment | 0 | -256,287 | -666,817 | -923,104 |
| | Net Adjusted Savings | 0 | 1,715,150 | 4,462,546 | 6,177,696 |
| | Planned Savings (Net) | 0 | 5,926,305 | 6,341,844 | 12,268,149 |
| | Annual Percent Toward Planned Savings (Net) | N/A | 28.9% | 70.4% | 50.4% |
| | Avg. Savings per Participant (Gross) | N/A | 1,937 | 2,004 | 1,985 |
| Avg. Savings per Participant (Net) | N/A | 1,685 | 1,743 | 1,727 | |
| Installed Summer Demand Reduction (kW) | Total Gross Demand Reduction | 0.0 | 883.5 | 2,285.0 | 3,168.4 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | 0.0 | 883.5 | 2,285.0 | 3,168.4 |
| | Net-to-Gross Ratio | N/A | 87% | 87% | 87% |
| | Net-to-Gross Adjustment | 0.0 | -114.9 | -297.0 | -411.9 |
| | Net Adjusted Demand Reduction | 0.0 | 768.6 | 1,987.9 | 2,756.5 |
| | Planned Demand (Net) | 0.0 | 3,390.8 | 3,521.5 | 6,812.3 |
| | Annual % Toward Planned Demand (Net) | N/A | 23.4% | 56.5% | 40.5% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.9 | 0.9 | 0.9 |
| Avg. Demand per Participant (Net) | N/A | 0.8 | 0.8 | 0.8 | |
| Installed Winter Demand Reduction (kW) | Total Gross Demand Reduction | - | 342.6 | 969.7 | 1,312.3 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand Reduction | - | 342.6 | 969.7 | 1,312.3 |
| | Net-to-Gross Ratio | - | 87% | 87% | 87% |
| | Net-to-Gross Adjustment | - | -44.5 | -126.1 | -170.6 |
| | Net Adjusted Demand Reduction | - | 298.1 | 843.7 | 1,141.7 |
| | Planned Demand (Net) | - | 998.3 | 1,068.3 | 2,066.7 |



| Category | Item | 2020 | 2021 | 2022 | Program total (2020-2022) |
|----------------------------|--|-------|--------|--------|---------------------------|
| | Annual % Toward Planned Demand (Net) | - | 29.9% | 79.0% | 55.2% |
| | Avg. Peak Demand per Participant (Gross) | - | 0.3 | 0.4 | 0.4 |
| | Avg. Demand per Participant (Net) | - | 0.3 | 0.3 | 0.3 |
| Program Performance | Cum. Annual \$Admin. per Participant (Gross) | N/A | \$57 | \$48 | \$48 |
| | Cum. Annual \$Admin. per kWh/year (Gross) | N/A | \$0.03 | \$0.02 | \$0.02 |
| | Cum. Annual \$Admin. per kW (Gross) | N/A | \$65 | \$54 | \$54 |
| | Cum. Annual \$EM&V per Total Costs (\$) | 74.6% | 9.7% | 7.9% | 7.9% |
| | Cum. Annual \$Rebate per Participant (Gross) | N/A | \$838 | \$837 | \$837 |

4.1.3.2 Additional Virginia program data

Figure 4-1 shows Virginia gross annualized energy savings and participation by end use and year. Since savings are achieved at the whole-building level, they cannot be disaggregated into individual measures. Therefore, end-use level savings are a good way to see the categories of savings achieved. Lighting and appliances represent the largest savings, although those decreased slightly in 2022. Savings in this category largely results from the lighting component. This decrease is likely the result of smaller buildings having been constructed. The proportion of each building type roughly stayed the same between 2021 and 2022, but the average size decreased by 8.3%. The lighting and appliance savings decreased by 6.7%. Qualifying homes have 100% LED lighting for all interior and exterior lighting.

Space cooling followed by space heating are the next largest energy-saving end uses. Savings in these end uses are attributed to HVAC equipment efficiency, duct system performance, and building envelope characteristics such as air tightness and insulation.

The domestic hot water end use has negative average savings per participant and across the program. While some homes have domestic hot water savings, many installed hot water heaters that are less efficient than the program’s assumed baseline water heater (although this is better than the federal code efficiency). It is worth noting that the domestic hot water energy consumption is only a small proportion of the total annual energy consumption. Additionally, the program manager said that many builders who install standard electric domestic hot water measures can avoid the minimum hot water heater efficiency requirement by installing commercial grade electric resistance units that can have uniform efficiency factors (UEFs) lower than residential units. However, only hot water heaters greater than 80 gallons are subject to the lower efficiency requirements. As a result, some builders may find that the larger commercial units cost less than smaller but more efficient residential hot water heaters.

Other detailed program participation and savings at the measure level are provided in Appendix O.14.



Figure 4-1. Virginia Residential New Construction Program participation by end use and year

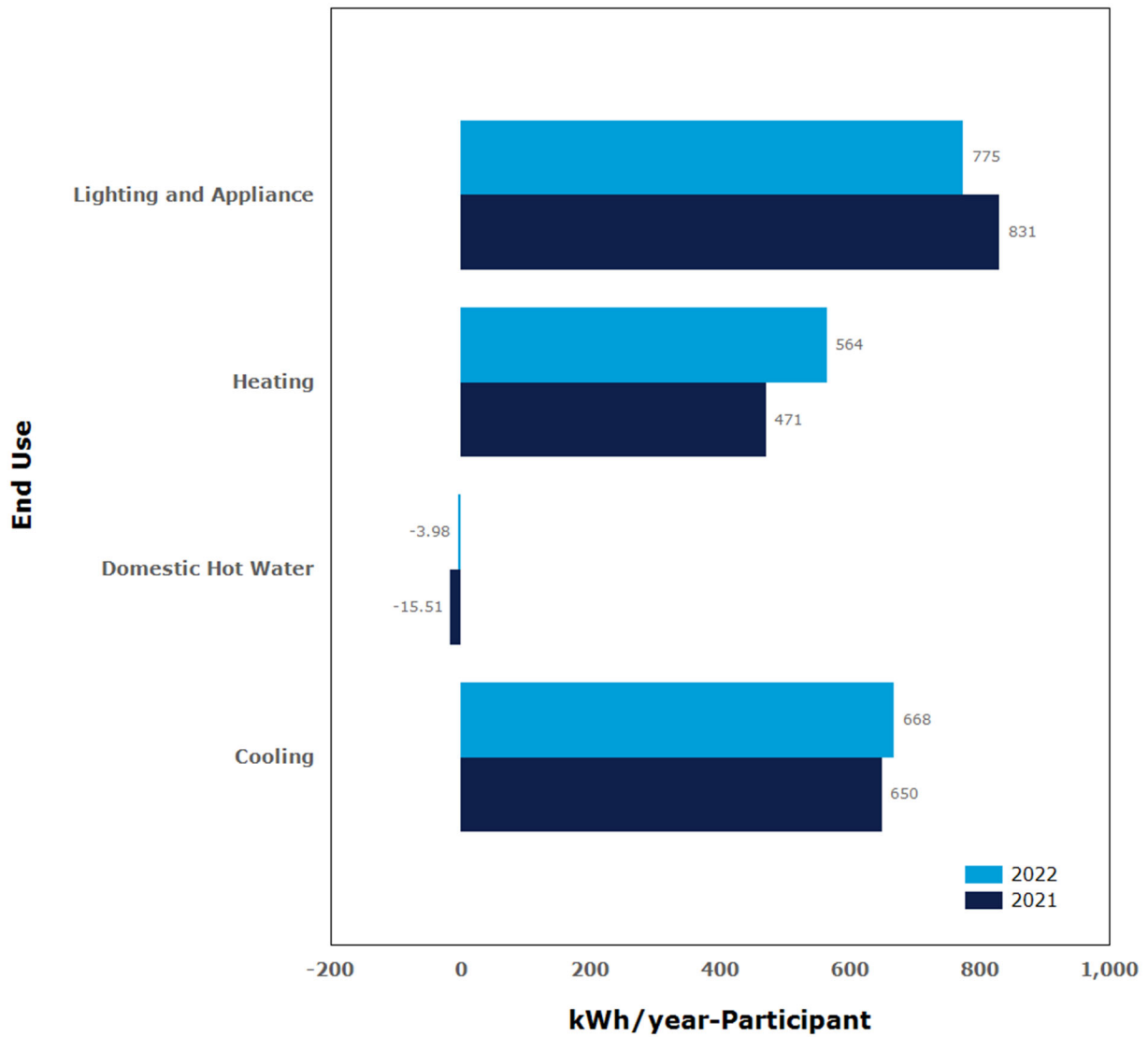
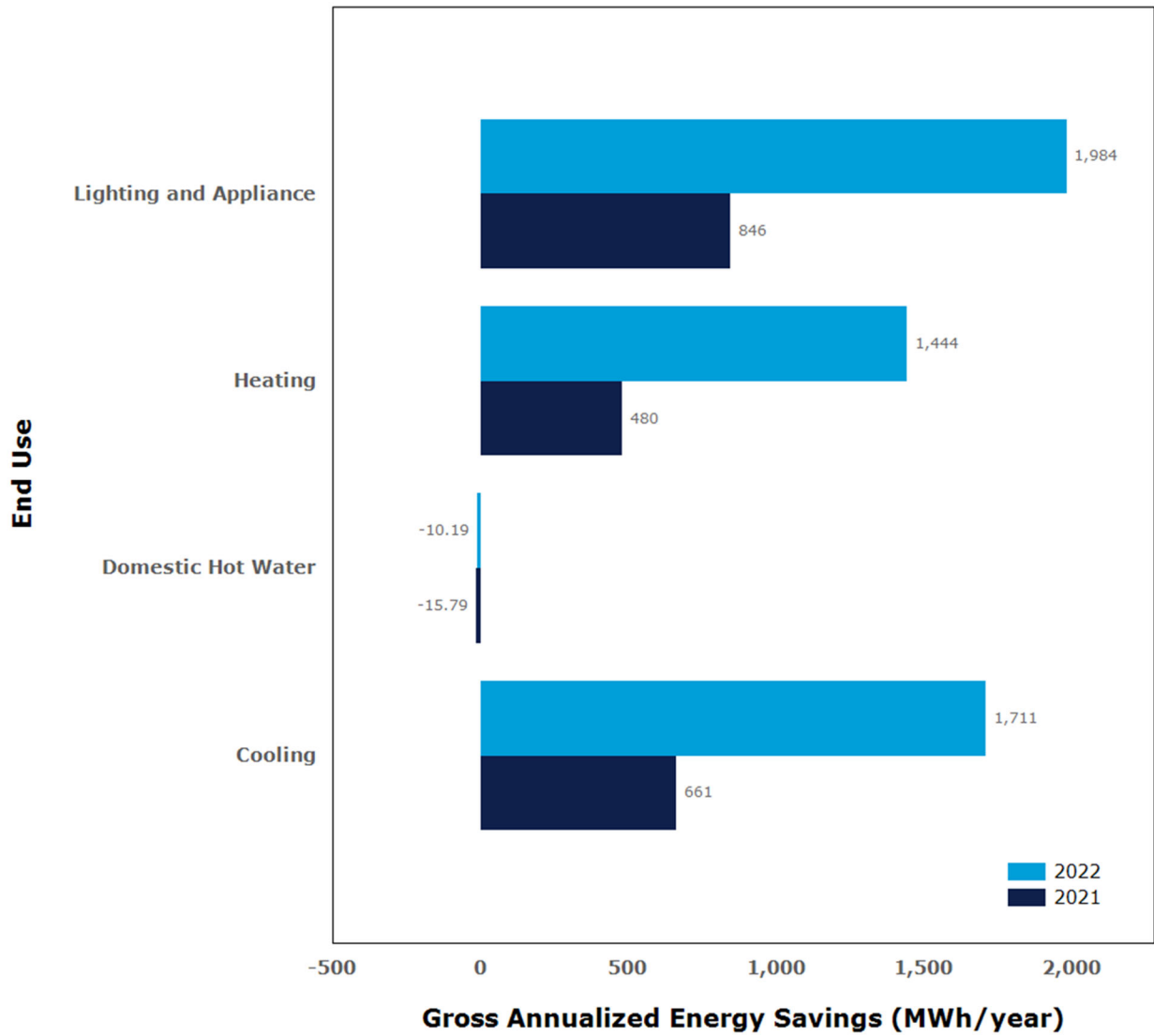


Figure 4-2 shows the gross annualized energy savings for the program by year. 2022 shows a significant increase in savings in 2022. Some of the changes in savings are due to the savings per participant. However, the primary reason for the increase in savings is an increase in participation in 2022. The program participation is up 251% from 2021 participation, and the savings increased 234%, respectively.



Figure 4-2. Virginia Residential New Construction Program gross annualized energy savings end use and year (MWh/year)





5 ENERGY EFFICIENCY – INCOME AND AGE QUALIFIED

5.1 Residential HVAC Health and Safety Program – Virginia

5.1.1 Program description

The Residential Heating Ventilation and Air Conditioning (HVAC) Health and Safety Program provides direct-install energy efficiency improvements to eligible age- and income-qualifying homeowners to reduce heating and cooling costs and to enhance the health and safety of residents in Dominion Energy’s service territory. To qualify for the Program in the Company’s Virginia service territory, a customer must meet the following eligibility requirements. Customer must be a current Dominion Energy or a new service customer and either:



- Customer has a total household income that does not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income, whichever is greater; or
- Customer is 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income.

Both owner-occupied and renter-occupied households are eligible to participate. However, renter-occupied households are only eligible for the program if they have permission from the homeowner for improvements to be installed.

To participate in the Program, Dominion Energy customers can contact Dominion Energy-approved weatherization service providers. Table 5-1 shows the energy-saving products that the Program may include:

Table 5-1. Energy-saving products for Residential Health and Safety Program

| End use | Measure |
|--------------------------|---|
| HVAC | Heat pump replacement |
| | HVAC/home ventilation improvements |
| | Electric baseboard heat upgrade/changeout |
| | Upgrades to mini-split/ductless heat pumps |
| | Thermostat replacement |
| | HVAC tune-up |
| | Duct sealing/insulation/repair/replacement |
| Building Envelope | Insulation repair/upgrade wall |
| | Insulation repair/upgrade floor |
| | Comprehensive air sealing |
| Health and Safety | Mold/mildew removal |
| | Re-wiring |
| | Air quality control |
| | Carbon monoxide detectors and sources |
| | Assessments of indoor air quality |
| | Combustion appliance safety checks/enhancements |
| | Fire and fall safety checks/enhancements |
| Roof repairs | |



| End use | Measure |
|---------|---------------|
| | Dehumidifiers |

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 February 1, 2021.¹³⁵ This program is the first of two components resulting from the passage of Virginia House Bill 2789.¹³⁶ The first component offers incentives for Heating and Cooling/Health and Safety measures and the second component offers incentives for the installation of solar equipment. Participants of this program are eligible to participate in the second component. Details about the second component, Residential HB2789 Solar, appear in Section 5.3.

A DNV interview with the program manager revealed that supply-chain issues have continued to impact the Program in multiple ways. At the beginning of the year, contractors were reaching out to third party vendors or driving to neighboring states to pick up equipment that they were unable to keep in stock. Providers had to be flexible about products coming in and timelines for each project. The program manager also reported that the Program's contractors were installing more readily available measures first and then scheduling future installations for equipment that was not in stock yet, such as HVAC measures. Reduced staffing numbers also posed potential issues, leading to slower program activity.

5.1.2 Methods for the current reporting period

The next section describes the program's progress toward planned participant, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program, which appears in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 5-2 outlines Dominion Energy's initial program planning assumptions, which were used to design the program.

¹³⁵ HVAC Health and Safety Program Terms and Conditions, <https://www.dominionenergy.com/-/media/pdfs/virginia/save-energy/hvac-health-safety-program-terms-conditions.pdf> Accessed March 15, 2023.

¹³⁶ Virginia Acts of Assembly – 2019 Session. Chapter 748. Approved Mar 21, 2019. Or Hour Bill 2789. Accessed March 17, 2023. <https://lis.virginia.gov/cgi-bin/legp604.exe?191+ful+CHAP0748+pdf>



Table 5-2. Residential HVAC Health and Safety Program planning assumptions system-wide

| Assumption | Value (Residential) | Value (Non-Residential) |
|---|--|--|
| Target Market | Income- and age-qualifying residential customers | Income- and age-qualifying non-residential customers |
| NTG Factor | 80% | 80% |
| Measure Life (years) | 16.0 | 16.0 |
| Gross Average Annual Savings per Participant (kWh/year) | 825 | 3,978.75 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.973 | 2.06 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.352 | 1.45 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 664.40 | 3,183.00 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.778 | 1.65 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.281 | 1.16 |
| Average Rebate per Participant (US\$) | \$933 | \$14,585 |

5.1.3 Assessment of program progress toward plan

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

5.1.3.1 Key Virginia program data

Table 5-3 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Appendix O.15 provides detailed program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings, respectively.

Table 5-3. Virginia Residential HVAC Health and Safety indicators (2020-2022)¹³⁷

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------|----------|--------------|--------------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$2,122 | \$426,441 | \$509,068 | \$937,630 |
| Total Costs (\$) | Total ¹³⁸ | \$49,722 | \$9,094,648 | \$12,192,181 | \$21,336,551 |
| | Planned | \$0 | \$10,821,869 | \$10,948,523 | \$21,770,392 |
| | Variance | \$49,722 | -\$1,727,220 | \$1,243,658 | -\$433,841 |

¹³⁷ The sum of the individual annual values may differ from the total value due to rounding.

¹³⁸ 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 reported expenditures do not include Dominion Energy’s margins.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|------|-----------|-----------|---------------------------|
| | Annual % of Planned | N/A | 84% | 111% | 98% |
| Participants | Total (Gross) | 0 | 3,361 | 3,661 | 7,022 |
| | Planned (Gross) | 0 | 8,791 | 8,791 | 17,582 |
| | Variance | 0 | -5,430 | -5,130 | -10,560 |
| | Annual % of Planned (Gross) | N/A | 38% | 42% | 40% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 1,341,418 | 999,178 | 2,340,596 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 1,341,418 | 999,178 | 2,340,596 |
| | Net-to-Gross Ratio | N/A | 80% | 80% | 80% |
| | Net-to-Gross Adjustment | 0 | -268,284 | -199,836 | -468,119 |
| | Net Adjusted Savings | 0 | 1,073,134 | 799,342 | 1,872,477 |
| | Planned Savings (Net) | 0 | 5,802,060 | 5,802,060 | 11,604,120 |
| | Annual % Toward Planned Savings (Net) | N/A | 18.5% | 13.8% | 16.1% |
| | Avg. Savings per Participant (Gross) | N/A | 399 | 273 | 333 |
| | Avg. Savings per Participant (Net) | N/A | 319 | 218 | 267 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 200.2 | 194.1 | 394.3 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 200.2 | 194.1 | 394.3 |
| | Net-to-Gross Ratio | N/A | 80% | 80% | 80% |
| | Net-to-Gross Adjustment | 0.0 | -40.0 | -38.8 | -78.9 |
| | Net Adjusted Demand | 0.0 | 160.2 | 155.3 | 315.4 |
| | Planned Demand (Net) | 0.0 | 6,841.6 | 6,841.6 | 13,683.3 |
| | Annual % Toward Planned Reduction (Net) | N/A | 2.34% | 2.27% | 2.31% |
| | Avg. Demand per Participant (Gross) | N/A | 0.06 | 0.05 | 0.06 |
| | Avg. Demand per Participant (Net) | N/A | 0.05 | 0.04 | 0.04 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 295.0 | 296.2 | 591.1 |
| | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 295.0 | 296.2 | 591.1 |
| | Net-to-Gross Ratio | - | 80% | 80% | 80% |
| | Net-to-Gross Adjustment | - | -59.0 | -59.2 | -118.2 |
| | Net Adjusted Demand | - | 236.0 | 237.0 | 472.9 |
| | Planned Demand (Net) | - | 2,473.7 | 2,473.7 | 4,947.4 |



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------------------------|---|-------|---------|---------|---------------------------|
| | Annual % Toward Planned Reduction (Net) | - | 9.54% | 9.58% | 9.56% |
| | Avg. Demand per Participant (Gross) | - | 0.09 | 0.08 | 0.08 |
| | Avg. Demand per Participant (Net) | - | 0.07 | 0.06 | 0.07 |
| | | | | | |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$128 | \$134 | \$134 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0.32 | \$0.40 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$2,141 | \$2,378 | \$2,378 |
| | Cml Annual \$EM&V per Total Costs (\$) | 93.0% | 2.3% | 1.7% | 1.7% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$2,141 | \$2,433 | \$2,433 |



5.1.3.2 Additional Virginia program data

Figure 5-1 through Figure 5-2 show the Virginia program's participation and gross annualized energy savings (for participants who installed the measure in the respective years) by measure type. Other detailed program participation and savings at the measure level appear in Appendix O.15.

Note that participation in these charts is the count of new unique customers in the "all measures" presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation counts that appear in the Key Virginia program data sections above, where a participant is only counted once (the first time they receive a rebate). After the first time the participant enrolls in a program, future applications are not counted as a new participant, although their savings are counted.

Thermostat replacements were the most frequently installed and highest savings HVAC measure (381 MWh/year), followed by heat pump upgrades (369 MWh/year). These two measures made up 75% of the gross energy savings for 2022. Fewer insulation repair/upgrade and duct sealing projects were installed compared to last year. The most frequently installed health and safety measures were carbon monoxide detectors and sources, fire and fall safety checks/enhancements, and air quality control. Health and safety measures do not receive savings. The majority of participants, as well as the largest amount of gross annualized energy savings, were from multi-family buildings. This pattern is similar to what was seen last year.



Figure 5-1. Virginia Residential HVAC Health and Safety Program participation by measure and year

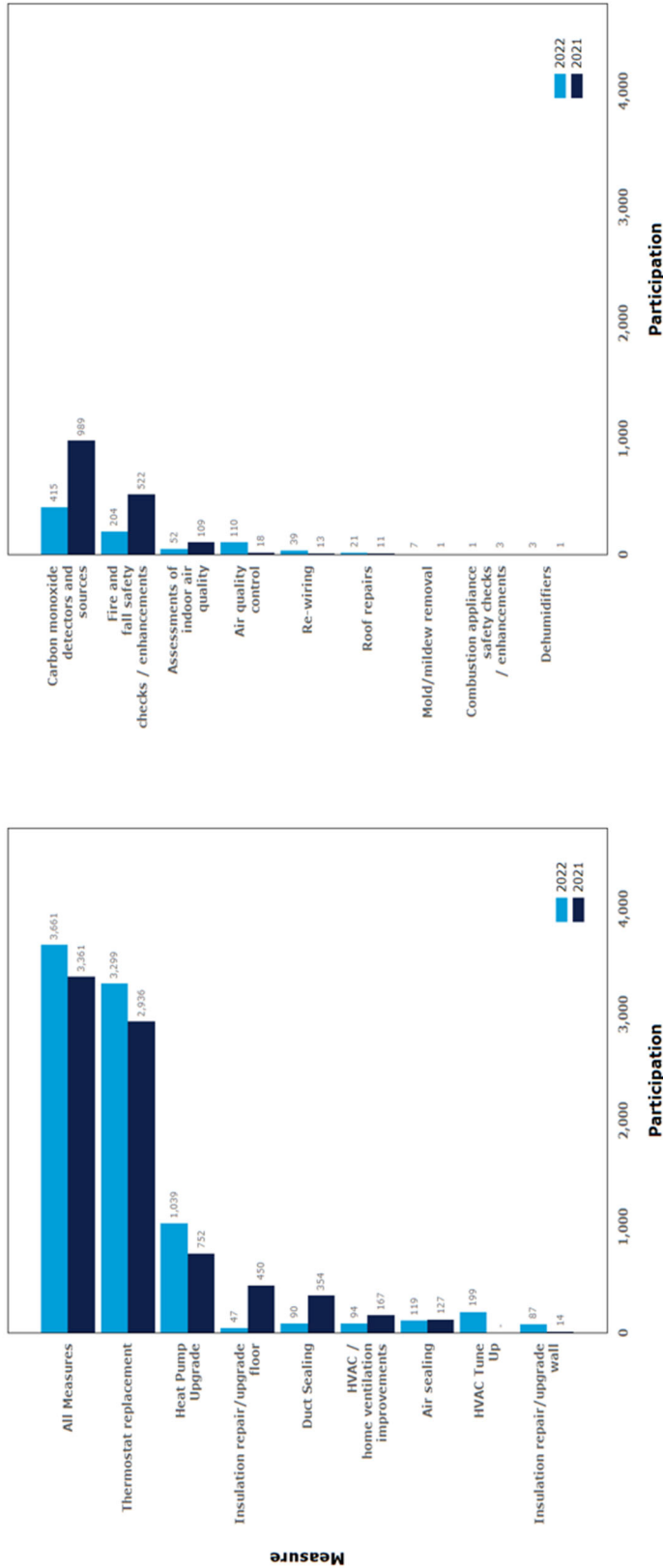
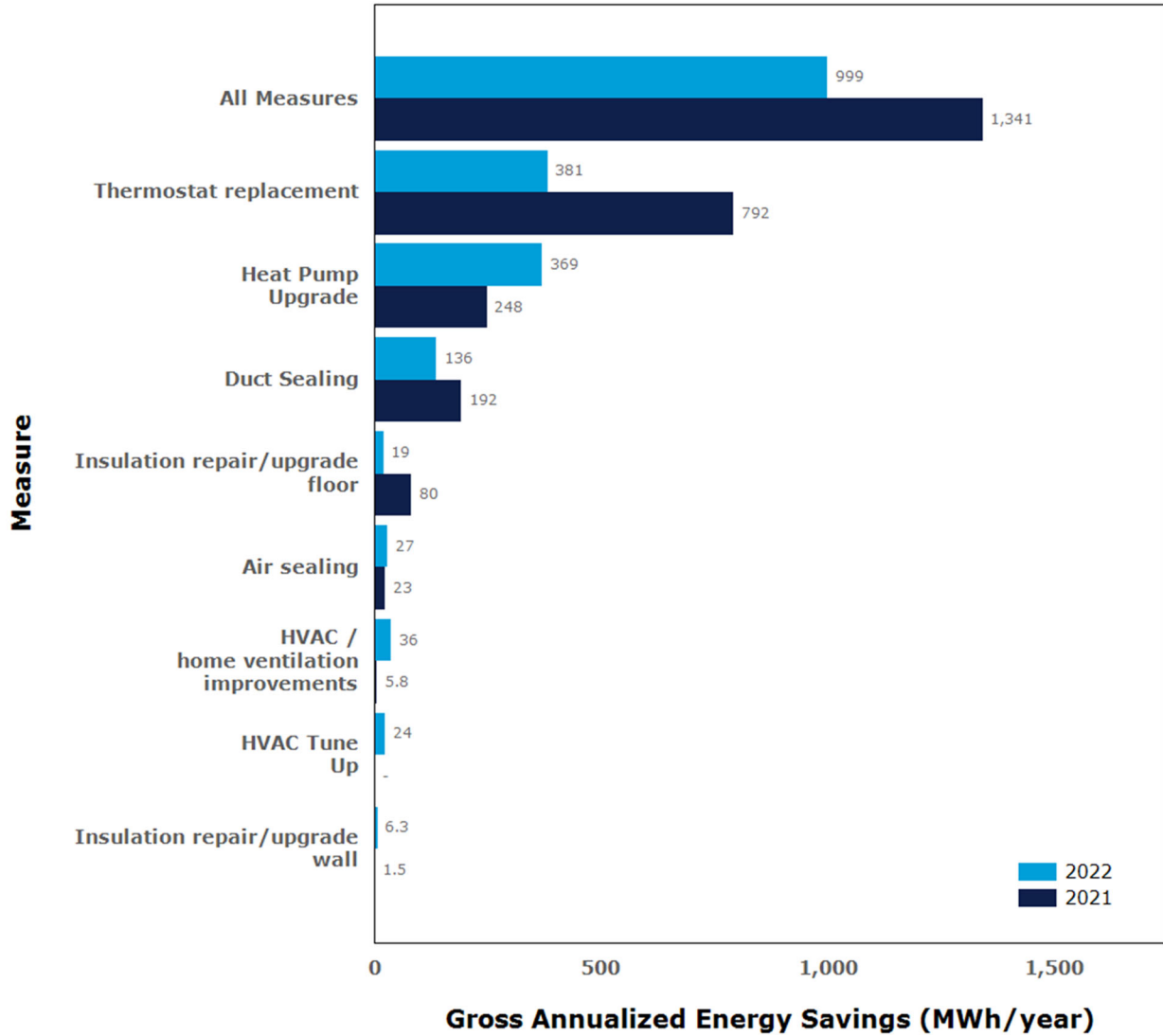




Figure 5-2. Virginia Residential HVAC Health and Safety Program gross annualized energy savings by measure and year (MWh/year)





5.2 Residential Income and Age Qualifying Energy Efficiency Program – Virginia and North Carolina

5.2.1 Program description

The Residential Income and Age Qualifying Home Improvement Program provides direct-install energy efficiency improvements to eligible age- and income-qualifying homeowners to reduce electric usage in Dominion Energy’s service territory. To qualify for the Program in the Virginia service territory, customers must meet the following eligibility requirements:



- Be a current Dominion Energy customer receiving electric services on a residential rate schedule
- Meets one of the following criteria:
 - Have a total household income that does not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income, whichever is greater; or
 - Be 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income.

To qualify for the Program in the North Carolina service territory, customers must meet the following eligibility requirements, which also conform to the North Carolina State Energy Office qualification guidelines:

- Have a total household income that does not exceed 200% of the federal poverty level.
- Be 60 years of age or older and have income at or below 250% of the federal poverty level.

Both owner-occupied and renter-occupied households are eligible to participate in the Program. However, participation of the renter-occupied households is conditional on their being responsible for the electric bill and either owning their homes or being able to secure permission from the owners to perform the Program-qualifying installations or improvements. Eligible customers must be living in single-family residences, town homes, mobile homes, or separately metered multifamily dwellings (apartments and condominiums) with electric or non-electric heating and electric cooling. Multifamily facilities owned by local housing authorities are not eligible for the Program.

Customer measures receiving incentives through this Program are not eligible to receive incentives for the same measures through any other programs offered by Dominion Energy. In addition, the Program limits each household to only one application.

To participate in the Program, Dominion Energy customers can contact Dominion Energy-approved weatherization service providers. These weatherization service providers also go door-to-door in some areas of the Dominion Energy service territory to promote the Program. The Program’s energy-saving products may include those shown in Table 5-4. In addition to these energy-saving measures, this program includes two safety (tier I and II) measures that address necessary safety improvements that enable the installation of the energy efficiency measures. There is also an additional “admin” measure, which provides additional payment to installation for the additional costs to provide these services to certain eligible customers.

Table 5-4. Energy-saving products for Residential Income and Age Qualifying Energy Efficiency Program

| End use | Measure |
|---------|--------------|
| HVAC | HVAC tune-up |



| End use | Measure |
|---------------------------|---|
| | Duct sealing |
| Building Envelope | Attic insulation |
| | Floor insulation |
| | Air sealing |
| | Pipe insulation |
| Domestic Hot Water | Tank wrap |
| | Faucet aerator |
| | Low-flow showerhead |
| Lighting | ENERGY STAR qualified 40- or 60-watt light bulbs (screw base) |
| Plug Load | Refrigerator replacement |

The official Program start date was January 1, 2022, in both Virginia and North Carolina. The first instances of participation in Virginia was in May 2022. It is important to note that the time between enrollment and becoming a tracked participant in the EM&V data can lag several months. The Program was designed to replace the existing DSM Phase IV Residential Income and Age Qualifying Home Improvement Program and was approved for five years under Case No. PUR-2020-00274 in Virginia and Docket No. E-22, Sub 608 in North Carolina.

A DNV interview with the Program Manager revealed there were some delays in getting the first projects completed after the Program’s official launch in January 2022. However, some of the Program’s contractors were successful in recruiting participants early in the process and those early recruits became the first jobs completed under the Program

5.2.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which appears in Appendix E. For the current period, the EM&V approach included reviewing the tracking data and then estimating net energy savings and demand reductions using the DE TRM calculations located in Appendix F. Table 5-5 outlines Dominion Energy’s initial program planning assumptions.

Table 5-5. Residential Income and Age Qualifying Energy Efficiency Program planning assumptions system-wide

| Assumption | Value |
|---|---|
| Target Market | Income and age-qualifying residential customers |
| NTG Factor | 80% |
| Measure Life (years) | 11.01 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 66 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.017 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.034 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 53 |
| Net Average Summer Coincident Peak Demand Reduction per Participant (kW) | 0.014 |
| Net Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.030 |
| Average Rebate per Participant (US\$) | 525 |

5.2.3 Assessment of program progress toward plan

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



5.2.3.1 Key Virginia program data

Table 5-6 provides performance indicator data from 2021 through December 31, 2022, and shaded cells are considered extraordinarily sensitive information. Appendix O.16 provides detailed program indicator tables, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings by year and month.

Table 5-6. Virginia Residential Income and Age Qualifying Energy Efficiency Program performance indicators (2021–2022)

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|---------------------------------------|----------|--------------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | | | | |
| | | | | |
| | Indirect Other (Administrative) | \$736 | \$244,390 | \$245,126 |
| Total Costs (\$) | Total ¹³⁹ | \$15,696 | \$5,853,130 | \$5,868,826 |
| | Planned | \$0 | \$7,426,787 | \$7,426,787 |
| | Variance | \$15,696 | -\$1,573,657 | -\$1,557,961 |
| | Annual % of Planned | N/A | 79% | 79% |
| Participants | Total (Gross) | 0 | 4,782 | 4,782 |
| | Planned (Gross) | 0 | 9,724 | 9,724 |
| | Variance | 0 | -4,942 | -4,942 |
| | Annual % of Planned (Gross) | N/A | 49% | 49% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 3,096,191 | 3,096,191 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 3,096,191 | 3,096,191 |
| | Net-to-Gross Ratio | N/A | 80% | 80% |
| | Net-to-Gross Adjustment | 0 | -619,238 | -619,238 |
| | Net Adjusted Savings | 0 | 2,476,953 | 2,476,953 |
| | Planned Savings (Net) | 0 | 513,427 | 513,427 |
| | Annual % Toward Planned Savings (Net) | N/A | 482.4% | 482.4% |
| | Avg. Savings per Participant (Gross) | N/A | 647 | 647 |
| | Avg. Savings per Participant (Net) | N/A | 518 | 518 |
| Installed Summer | Total Gross Deemed Demand | 0.0 | 689.3 | 689.3 |

¹³⁹ 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 | Program total (2021–2022) |
|---|---|-------|---------|---------------------------|
| Demand Reduction (kW) | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 689.3 | 689.3 |
| | Net-to-Gross Ratio | N/A | 80% | 80% |
| | Net-to-Gross Adjustment | 0.0 | -137.9 | -137.9 |
| | Net Adjusted Demand | 0.0 | 551.5 | 551.5 |
| | Planned Demand (Net) | 0.0 | 132.0 | 132.0 |
| | Annual % Toward Planned Demand (Net) | N/A | 417.7% | 417.7% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.1 | 0.1 |
| | Avg. Demand per Participant (Net) | N/A | 0.1 | 0.1 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 1,713.7 | 1,713.7 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 1,713.7 | 1,713.7 |
| | Net-to-Gross Ratio | N/A | 80% | 80% |
| | Net-to-Gross Adjustment | 0.0 | -342.7 | -342.7 |
| | Net Adjusted Demand | 0.0 | 1,371.0 | 1,371.0 |
| | Planned Demand (Net) | 0.0 | 293.6 | 293.6 |
| | Annual % Toward Planned Demand (Net) | N/A | 467.0% | 467.0% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.4 | 0.4 |
| | Avg. Demand per Participant (Net) | N/A | 0.3 | 0.3 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$51 | \$51 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0.08 | \$0.08 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$356 | \$356 |
| | Cml Annual \$EM&V per Total Costs (\$) | 68.2% | 2.0% | 2.0% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$917 | \$917 |

5.2.3.2 Key North Carolina program data

Key data highlights for participation or enrollment, energy savings, demand reduction, and program costs for North Carolina appear below. Following this summary, Table 5-7 provides performance indicator data from January 1, 2022, through December 31, 2022. Shaded cells are considered extraordinarily sensitive information. Appendix P.10 provides detailed



program indicator tables, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix M provides cumulative gross and net savings by year and month.

Table 5-7. North Carolina Residential Income and Age Qualifying Energy Efficiency Program performance indicators (2022)¹⁴⁰

| Category | Item | 2022 | Program total (2022) |
|---|---------------------------------------|------------|----------------------|
| Operations and Management Costs (\$) | | | |
| | Indirect Other (Administrative) | \$5,904 | \$5,904 |
| Total Costs (\$) | Total ¹⁴¹ | \$141,404 | \$141,404 |
| | Planned | \$309,337 | \$309,337 |
| | Variance | -\$167,933 | -\$167,933 |
| | Annual % of Planned | 46% | 46% |
| Participants | Total (Gross) | 26 | 26 |
| | Planned (Gross) | 621 | 621 |
| | Variance | -595 | -595 |
| | Annual % of Planned (Gross) | 4% | 4% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 47,257 | 47,257 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 |
| | Adjusted Gross Savings | 47,257 | 47,257 |
| | Net-to-Gross Ratio | 80% | 80% |
| | Net-to-Gross Adjustment | -9,451 | -9,451 |
| | Net Adjusted Savings | 37,806 | 37,806 |
| | Planned Savings (Net) | 32,789 | 32,789 |
| | Annual % Toward Planned Savings (Net) | 115.3% | 115.3% |
| | Avg. Savings per Participant (Gross) | 1,818 | 1,818 |
| Avg. Savings per Participant (Net) | 1,454 | 1,454 | |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 15.6 | 15.6 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 |
| | Adjusted Gross Demand | 15.6 | 15.6 |
| | Net-to-Gross Ratio | 80% | 80% |
| | Net-to-Gross Adjustment | -3.1 | -3.1 |

¹⁴⁰ The sum of the individual annual values may differ from the total value due to rounding.

¹⁴¹ Program expenditures include operations and maintenance (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.



| Category | Item | 2022 | Program total (2022) |
|---|---|---------|----------------------|
| | Net Adjusted Demand | 12.5 | 12.5 |
| | Planned Demand (Net) | 8.4 | 8.4 |
| | Annual % Toward Planned Demand (Net) | 147.9% | 147.9% |
| | Avg. Peak Demand per Participant (Gross) | 0.6 | 0.6 |
| | Avg. Demand per Participant (Net) | 0.5 | 0.5 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 26.5 | 26.5 |
| | Realization Rate | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 |
| | Adjusted Gross Demand | 26.5 | 26.5 |
| | Net-to-Gross Ratio | 80% | 80% |
| | Net-to-Gross Adjustment | -5.3 | -5.3 |
| | Net Adjusted Demand | 21.2 | 21.2 |
| | Planned Demand (Net) | 18.7 | 18.7 |
| | Annual % Toward Planned Demand (Net) | 113.1% | 113.1% |
| | Avg. Peak Demand per Participant (Gross) | 1.0 | 1.0 |
| | Avg. Demand per Participant (Net) | 0.8 | 0.8 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$227 | \$227 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | \$379 | \$379 |
| | Cml Annual \$EM&V per Total Costs (\$) | 3.3% | 3.3% |
| | Cml Annual \$Rebate per Participant (Gross) | \$3,536 | \$3,536 |

5.2.3.3 Additional Virginia program data

Figure 5-3 and Figure 5-4 show the Virginia program’s participation and gross annualized energy savings by measure type. Other detailed program participation and savings at the measure level are provided in Appendix O.16.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

In 2022, the most frequently installed measures were LED replacement of 40 W and 60 W incandescent lamps, attic insulation, and safety tier I. The measures with the most gross energy savings in 2022, in decreasing order, were attic insulation (2,059 MWh/year), LED replacement of 40 W incandescent lamps (327 MWh/year), and 60 W incandescent lamps (228 MWh/year). These three measures made up over 84% of the gross energy savings for 2022. Safety Tier I, which was one of the most frequently installed measure, is not an energy savings measures.



Figure 5-3. Virginia Residential Income and Age Qualifying Energy Efficiency Program participation by measure and year

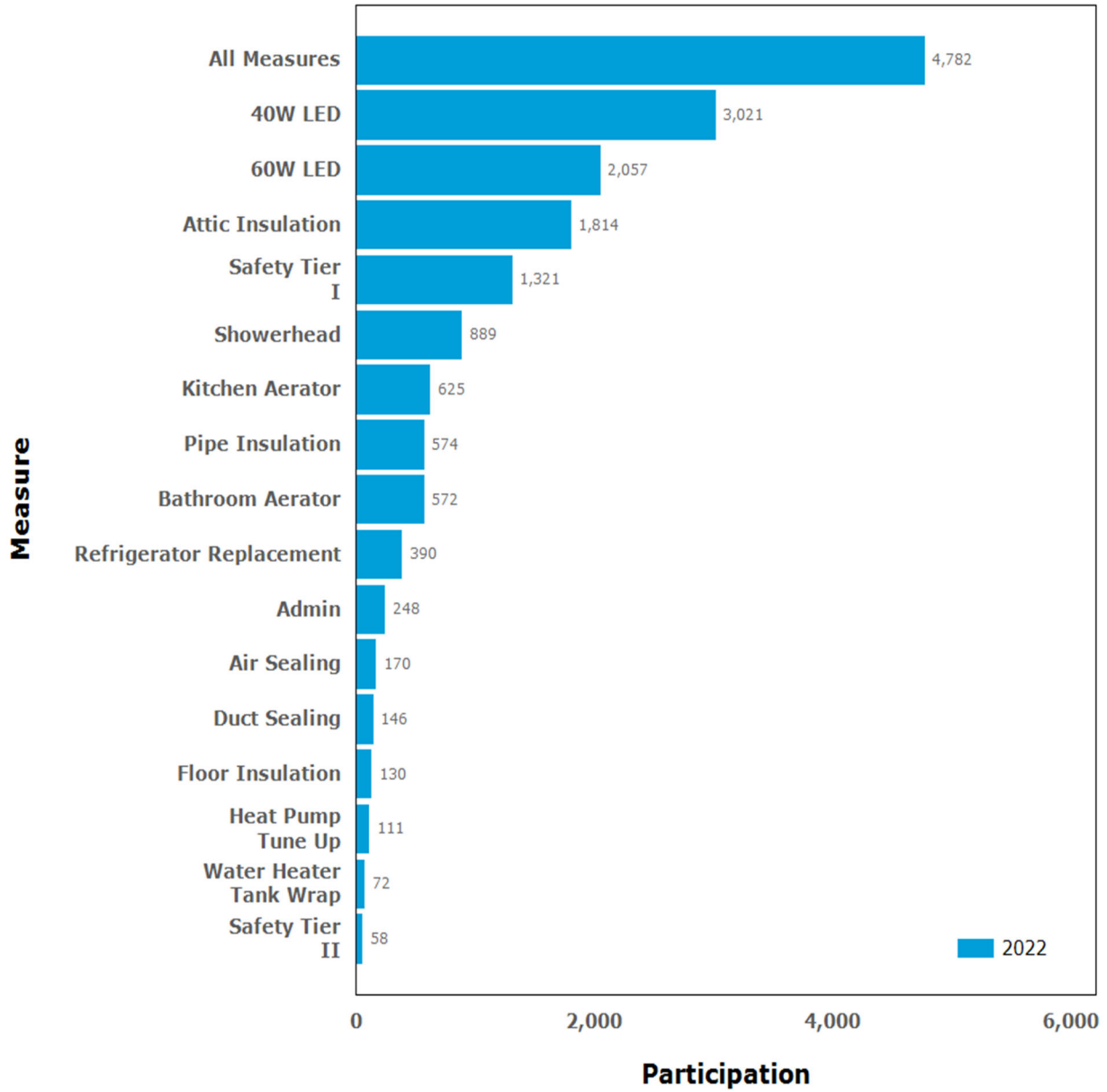
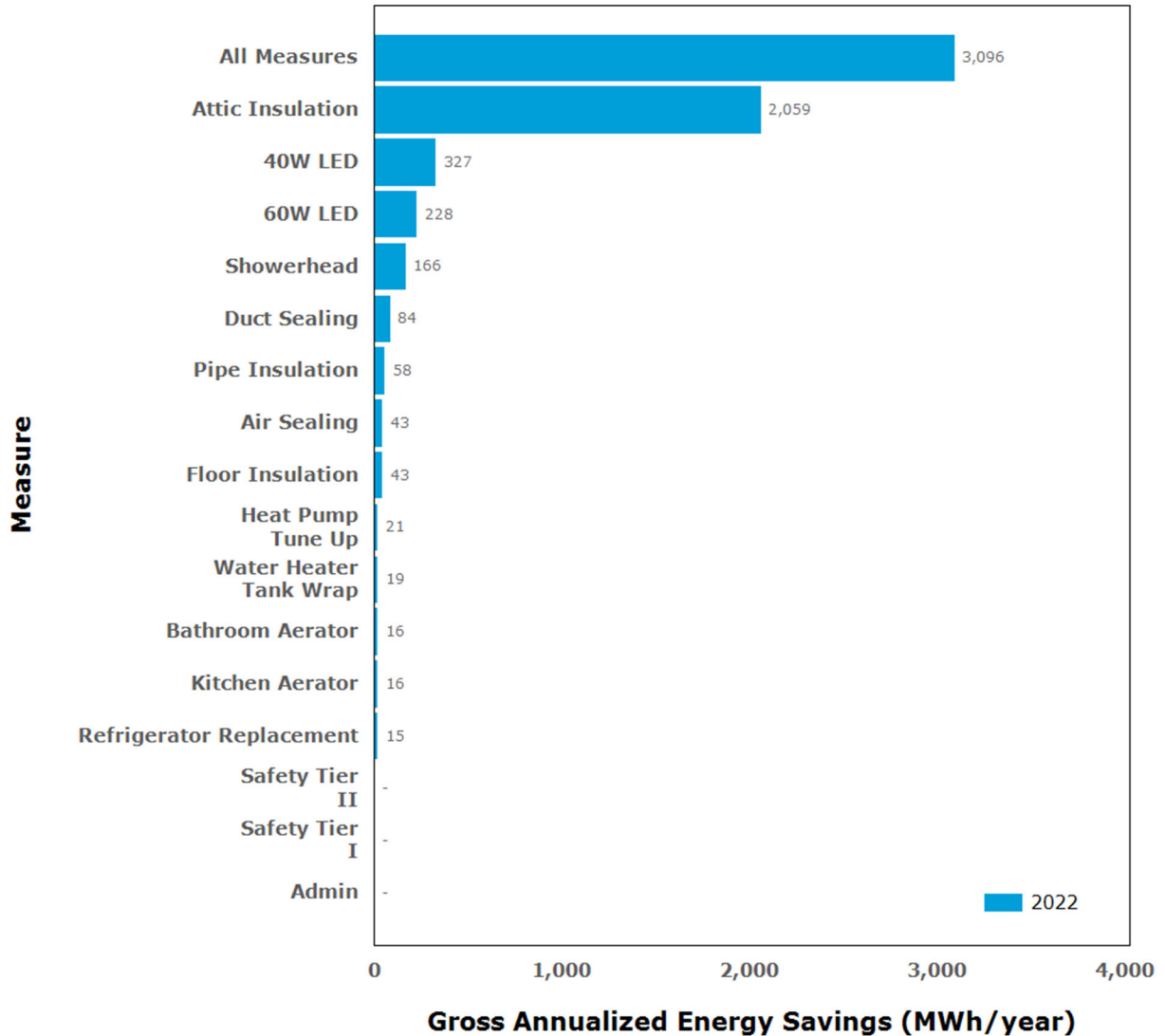




Figure 5-4. Virginia Residential Income and Age Qualifying Energy Efficiency Program gross annualized energy savings by measure and year (MWh/year)



5.2.3.4 Additional North Carolina program data

Figure 5-5 and Figure 5-6 show the Virginia program’s participation and gross annualized energy savings by measure type. Other detailed program participation and savings at the measure level are provided in Appendix P.10.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.



In 2022, the most frequently installed measures were admin, air sealing, and safety tier I. The measures with the most gross energy savings in 2022, in decreasing order, were attic insulation (16.0 MWh/year), duct sealing (13.3 MWh/year), and water heater tank wrap (3.5 MWh/year). These three measures made up over 69% of the gross energy savings for 2022. Safety tier I and admin, which were two of the most frequently installed measures, are not energy savings measures.

Figure 5-5. North Carolina Residential Income and Age Qualifying Energy Efficiency Program participation by measure and year

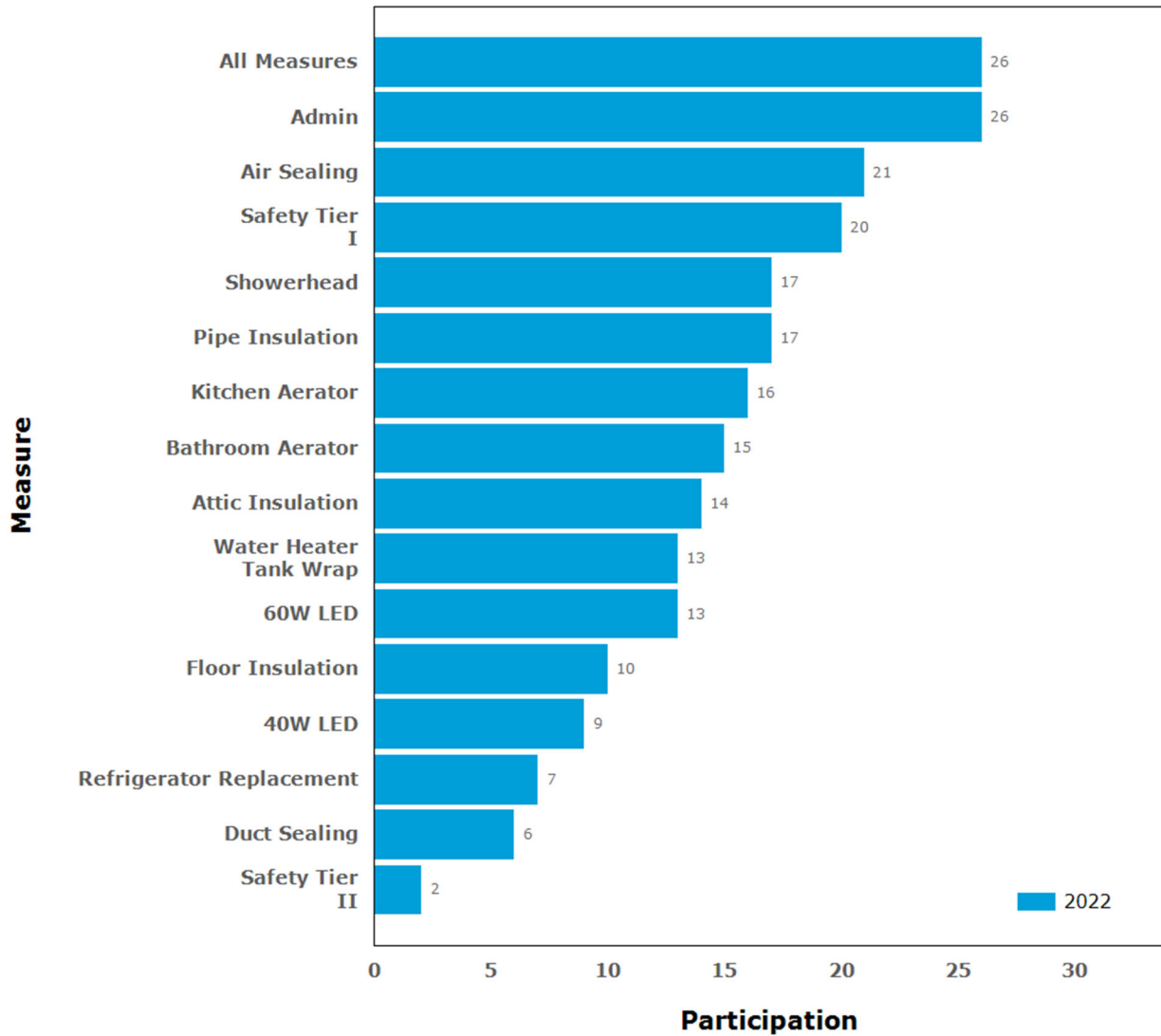
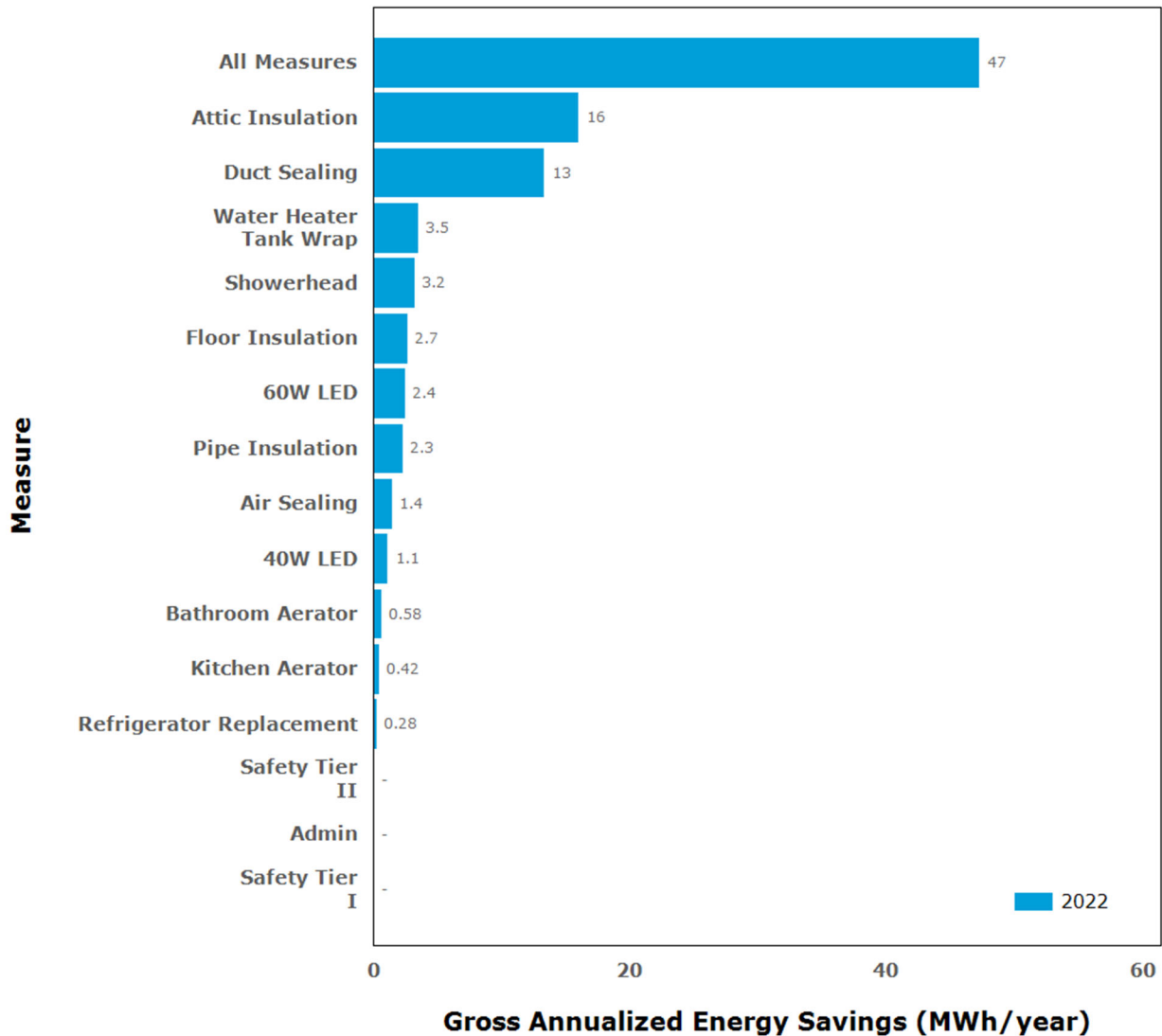




Figure 5-6. North Carolina Residential Income and Age Qualifying Energy Efficiency Program gross annualized energy savings by measure and year (MWh/year)





5.3 Income and Age Qualifying Solar Program – Virginia

5.3.1 Program description

The Residential Income and Age Qualifying Solar Program offers incentives for the installation of solar photovoltaic (PV) systems to eligible age- and income-qualifying homeowners in Dominion Energy’s service territory. To qualify for the Program in the Company’s Virginia service territory, customers must meet the following eligibility requirements:



- Must have previous participation in one of the Income-Qualifying programs offered by Dominion Energy
- Be a current Dominion Energy customer receiving electric services on a residential rate schedule
- Meet one of the following criteria:
 - Have a total household income that does not exceed 60% of the Virginia Median Income, or 80% of the Local Area Median Income, whichever is greater; or
 - Be 60 years or older with a total household income that does not exceed 120% of the Virginia Median Income.

Both owner-occupied and renter-occupied households are eligible to participate in the Program. However, renter-occupied households must be responsible for the electric bill and be able to secure permission from the owner to perform the program-qualifying installations or improvements. Eligible customers must be living in single-family residences, town homes, or mobile homes placed on a permanent foundation. Multifamily facilities owned by local housing authorities are not eligible for the program.

The Virginia SCC approved this program, as part of the DSM Phase IX programs, on September 7, 2021, (PUR-2020-00274) for a five-year period of January 1, 2022, through December 31, 2026. The official program start date was August 1, 2022, in Virginia. The first instances of participation did not begin until November 2022 because the time between enrollment and becoming a tracked participant in the EM&V data can lag several months.

5.3.2 Methods for the current reporting period

The next section describes the program’s progress toward planned participants, energy savings, and demand reduction goals. DNV developed an EM&V Plan for this program which is included in Appendix E. For the current period, the approach included reviewing the tracking data and then estimating net energy savings and demand reduction using the DE TRM calculations located in Appendix F. Table 5-8 outlines Dominion Energy’s initial program planning assumptions that were used to design the program.

Table 5-8. Income and Age Qualifying Solar Program planning assumptions, system-wide

| Assumption | Value (Residential) |
|---|--|
| Target Market | Income- and age-qualifying residential customers |
| NTG Factor | 80% |
| Measure Life (years) | 20.0 |
| Gross Average Annual Savings per Participant (kWh/year) | 4,590 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 2.20 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 0.00497 |



| Assumption | Value (Residential) |
|--|---------------------|
| Net Average Annual Energy Savings per Participant (kWh/year) | 3,672 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 1.76 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.00398 |
| Average Rebate per Participant (US\$) | \$15,000.00 |

5.3.3 Assessment of program progress toward plan

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

5.3.3.1 Key Virginia program data

Table 5-9 provides performance indicator data through December 31, 2022, and shaded cells are considered extraordinarily sensitive information. Detailed program indicator tables by year and month can be found in Appendix O.17 along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings (kWh and kW) by year and month can be found in Appendix Q.

Table 5-9. Virginia Residential Income and Age Qualifying Solar Program performance indicators (2021-2022)

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|---------------------------------|----------|---------------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$514 | \$8,190 | \$8,704 |
| Total Costs (\$) | Total ¹⁴² | \$10,963 | \$196,159 | \$207,123 |
| | Planned | \$0 | \$10,522,665 | \$10,522,665 |
| | Variance | \$10,963 | -\$10,326,506 | -\$10,315,543 |
| | Annual % of Planned | N/A | 2% | 2% |
| Participants | Total (Gross) | 0 | 7 | 7 |
| | Planned (Gross) | 0 | 555 | 555 |
| | Variance | 0 | -548 | -548 |
| | Annual % of Planned (Gross) | N/A | 1% | 1% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 34,559 | 34,559 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 34,559 | 34,559 |
| | Net-to-Gross Ratio | N/A | 80% | 80% |

¹⁴² 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 | Program total (2021–2022) |
|---|---|-------|-----------|---------------------------|
| | Net-to-Gross Adjustment | 0 | -6,912 | -6,912 |
| | Net Adjusted Savings | 0 | 27,647 | 27,647 |
| | Planned Savings (Net) | 0 | 2,037,960 | 2,037,960 |
| | Annual % Toward Planned Savings (Net) | N/A | 1.4% | 1.4% |
| | Avg. Savings per Participant (Gross) | N/A | 4,937 | 4,937 |
| | Avg. Savings per Participant (Net) | N/A | 3,950 | 3,950 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 12.4 | 12.4 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 12.4 | 12.4 |
| | Net-to-Gross Ratio | N/A | 80% | 80% |
| | Net-to-Gross Adjustment | 0.0 | -2.5 | -2.5 |
| | Net Adjusted Demand | 0.0 | 10.0 | 10.0 |
| | Planned Demand (Net) | 0.0 | 976.3 | 976.3 |
| | Annual % Toward Planned Reduction (Net) | N/A | 1.02% | 1.02% |
| | Avg. Demand per Participant (Gross) | N/A | 1.8 | 1.8 |
| | Avg. Demand per Participant (Net) | N/A | 1.4 | 1.4 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 0.0 |
| | Realization Rate | N/A | N/A | N/A |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | 0.0 | 2.2 | 2.2 |
| | Annual % Toward Planned Reduction (Net) | N/A | 0% | 0% |
| | Avg. Demand per Participant (Gross) | N/A | N/A | N/A |
| | Avg. Demand per Participant (Net) | N/A | N/A | N/A |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$1,243 | \$1,243 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$699 | \$699 |
| | Cml Annual \$EM&V per Total Costs (\$) | 25.7% | 9.5% | 9.5% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$18,194 | \$18,194 |

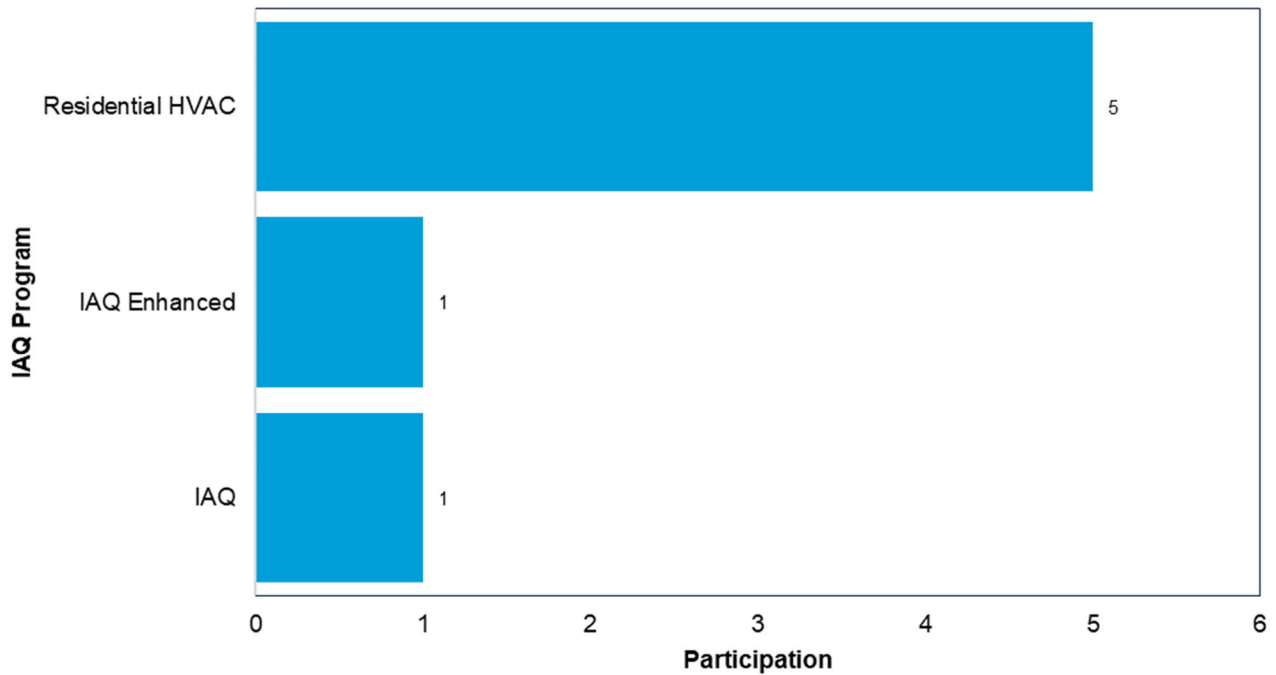


5.3.3.2 Additional Virginia program data

There are seven participants in the first year of the Virginia program. The solar PV systems all have 12 panels and are between 4.3 kW to 4.7 kW in rated DC panel capacity. The average annual capacity factor is 12.4%. This yields a gross annualized energy savings of 35 MWh/year.

The eligibility for this program requires that the participants participated in one of the other income and age qualifying programs. Figure 5-7 shows that of the seven program participants in 2022, five participated in the Phase VIII Residential HVAC Program, one participated in the Phase VIII Income and Age Qualifying Enhanced Program (IAQ Enhanced), and one participated in the Phase IV Income and Age Qualifying Program (IAQ).

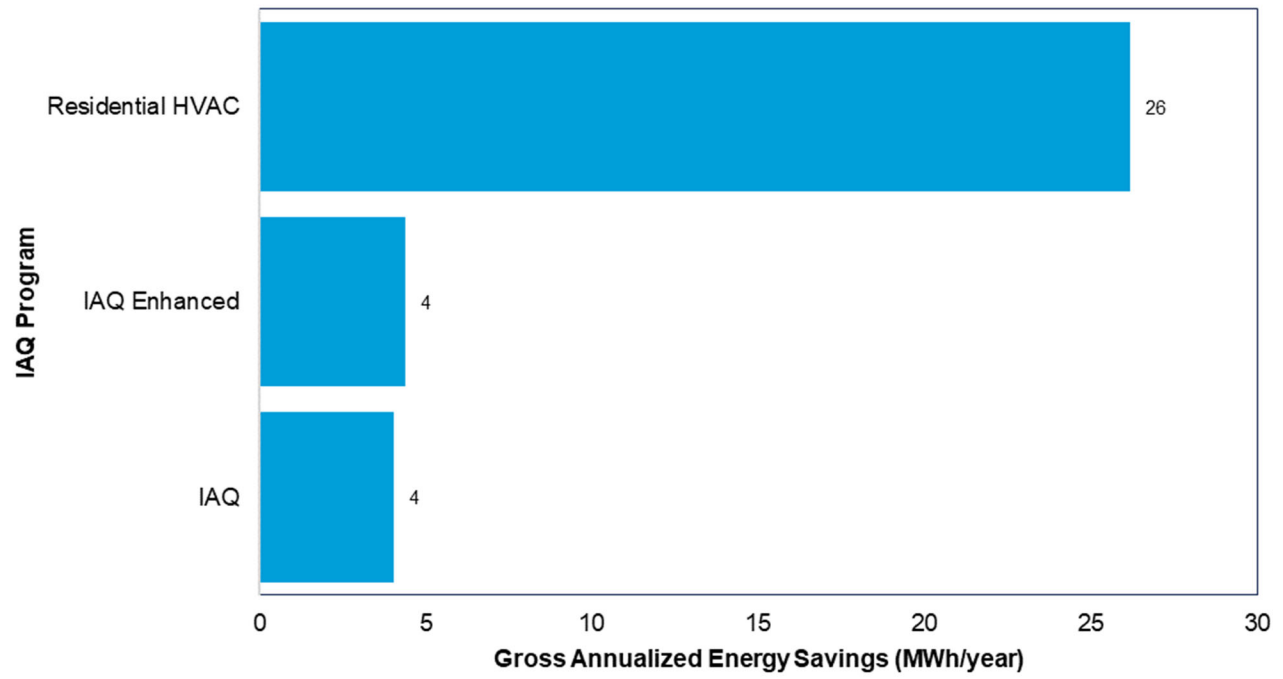
Figure 5-7. Virginia Residential IAQ Solar Program participation by IAQ program



Most of the gross annualized savings (26.2 MWh/year) were from participants that previously enrolled in the Residential IAQ HVAC program as shown in Figure 5-8.



Figure 5-8. Virginia Residential IAQ Solar Program gross annualized savings (MWh/year) by IAQ program





6 ENERGY EFFICIENCY – NON-RESIDENTIAL GENERAL PRODUCTS & SERVICES

6.1 Non-Residential Prescriptive Program – Virginia and North Carolina

6.1.1 Program description



Image courtesy of Dominion Energy

In the Non-Residential Prescriptive program, qualifying customers were eligible to pursue one or more of the qualified measures through a participating contractor registered with the program. To qualify for this program, the customer must have been responsible for the electric bill and must have been the owner of the facility or reasonably able to secure permission to complete the measures.

This program was approved in Virginia on June 1, 2017, in Case No. PUE-2016-00111, and the program became available to eligible customers in the Company’s Virginia service territory in the last quarter of 2017. On October 16, 2017, the program was approved for implementation in North Carolina in Docket E-22, Sub 543 and launched in 2017. It stopped enrolling new customers at the end of 2021. And the last new customers’ savings are issued in this report section. A new iteration of the programs is available, the Phase IX Non-Residential Prescriptive Program Enhanced. The Enhanced Program was approved in the Final Order to Case No. PUR-2020-00274 on September 7, 2021. Details about that programs’ performance can be found in section 6.2 of this report.

Since the program was implemented through a contractor network, customers had to contact a participating vendor to pursue the qualifying measures. Upon completion of the work, a rebate application was submitted by the contractor. Customers could either opt to receive the rebate directly or authorize the rebate to be paid to the contractor. Customers were not counted as participants until a completed application form was processed and a rebate was issued.

The program measures offered were primarily EE measures designed to decrease energy consumption through replacement of inefficient equipment, installation of new equipment that exceeds current code efficiency standards and recommissioning of existing HVAC equipment. Measures eligible to receive a rebate include those shown in Table 6-1.

The last year of this program was 2021, with the last participant records processed in 2022. The program used both conventional (bill inserts, brochures, trade shows, etc.), web-based (search engine marketing, pop-up ads, etc.), and one-on-one phone call marketing approaches. DNV conducted an impact evaluation of this program in 2019 - 2020 that was included in the EM&V report that was filed with the SCC on May 14, 2021, as Appendix X-1.¹⁴³

Table 6-1. Measures offered through Non-Residential Prescriptive Program

| End use | Measure |
|---------|--------------------------------------|
| Cooking | Commercial Convection Oven |
| | Commercial Electric Combination Oven |
| | Commercial Electric Fryer |
| | Commercial Griddle |
| | Commercial Hot Food Holding Cabinet |
| | Commercial Steam Cooker |

¹⁴³ SCC Case No. PUR-2019-00201. Accessed March 10, 2023. <https://www.scc.virginia.gov/docketsearch#caseDocs/140330>



| End use | Measure |
|---------------|--|
| HVAC | Duct Testing & Sealing |
| | Unitary/Split AC & HP Tune-up |
| | Variable Speed Drives on Kitchen Fan |
| Plug Load | Smart Strip |
| Refrigeration | Door Closer |
| | Door Gasket |
| | Evaporator Fan Control |
| | Floating Head Pressure Control |
| | Refrigeration Night Cover |
| | Refrigeration Coil Cleaning |
| | Suction Pipe Insulation |
| | Strip Curtain |
| | Vending Machine Miser |
| | Commercial Freezers and Refrigerators – Solid Door |
| | Ice Maker |
| | Low/No-Sweat Door Film |

6.1.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 6- outlines Dominion Energy’s initial program planning assumptions used to design the program.

Table 6-. Non-Residential Prescriptive Program planning assumptions

| Assumption | Value |
|--|---------------------------|
| Target Market | Non-Residential customers |
| NTG Factor | 85% |
| Measure Life (years) | 6.3 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 128,984 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 19.29 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 109,636 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 16.40 |
| Average Rebate per Participant (US\$) | \$10,091 per participant |

6.1.3 Assessment of program progress toward plan

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



6.1.3.1 Key Virginia program data

Table 6-2 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix O.18, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are provided in Appendix Q.

Table 6-2. Virginia Non-Residential Prescriptive Program performance indicators (2017–2022)¹⁴⁴

| Category | Item | 2017 | 2018 ¹⁴⁵ | 2019 | 2020 | 2021 | 2022 | Program total (2017–2022) |
|--------------------------------------|---------------------------------|--------------|---------------------|-------------|--------------|-------------|-----------|---------------------------|
| Operations and Management Costs (\$) | Indirect Other (Administrative) | \$28,898 | \$381,096 | \$281,598 | \$579,427 | \$398,097 | \$8,943 | \$1,678,059 |
| | Total ¹⁴⁶ | \$734,410 | \$6,748,855 | \$5,887,581 | \$11,128,206 | \$8,490,163 | \$214,195 | \$33,203,410 |
| Total Costs (\$) | Planned | \$3,735,349 | \$6,246,114 | \$6,354,082 | \$6,282,076 | \$6,176,552 | \$49,351 | \$28,843,524 |
| | Variance | -\$3,000,939 | \$502,740 | -\$466,501 | \$4,846,131 | \$2,313,611 | \$164,844 | \$4,359,886 |
| | Annual % of Planned | 20% | 108% | 93% | 177% | 137% | 434% | 115% |
| Participants | Total (Gross) | 4 | 865 | 666 | 577 | 709 | 14 | 2,835 |
| | Planned (Gross) | 266 | 427 | 427 | 427 | 437 | 0 | 1,984 |
| | Variance | -262 | 438 | 239 | 150 | 272 | 14 | 851 |
| | Annual % of Planned (Gross) | 2% | 203% | 156% | 135% | 162% | N/A | 143% |
| Installed Energy | Total Gross Deemed Savings | 699 | 7,023,169 | 4,403,947 | 45,108,795 | 25,303,910 | 332,103 | 82,172,624 |
| | Realization Rate | 100% | 100% | 100% | 48% | 61% | 57% | 59% |

¹⁴⁴ The sum of the individual annual values may differ from the total value due to rounding.

¹⁴⁵ 2018 Total Gross Deemed Savings changed as a result of an error correction made in this report (May 1, 2020). The correction assigns a full 5% savings to records with refrigerant charge adjustments completed during their HVAC tune-up activities. Previously, those records were not being assigned savings for refrigerant charge adjustments, which was incorrect. The correction resulted in a savings increase of 273,003 kWh/year (gross) in Virginia for program year 2018, from what was previously reported (in the May 1, 2019, EM&V report) as 6,750,166 kWh/year (gross). This change resulted in a 20% increase in 2018 total installed gross energy savings (kWh/year). The Total Gross Deemed Demand also increased from 3,083.6 kW (gross) to 3,366.4 kW (gross) for program year 2018, which was a 10% increase.

¹⁴⁶ 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 | 2017 | 2018 ¹⁴⁵ | 2019 | 2020 | 2021 | 2022 | Program total (2017-2022) |
|--|--|-----------|---------------------|-----------|-------------|------------|----------|---------------------------|
| Savings (kWh/year) | Realization Rate Adjustment | 0 | 0 | 0 | -23,380,737 | -9,907,233 | -143,337 | -33,431,307 |
| | Adjusted Gross Savings | 699 | 7,023,169 | 4,403,947 | 21,728,058 | 15,396,678 | 188,766 | 48,741,317 |
| | Net-To-Gross Rate Weighted by Measure ¹⁴⁷ | 85% | 85% | 85% | 90% | 87% | 87% | 88% |
| | Net-To-Gross Adjustment | -105 | -1,053,475 | -660,592 | -2,649,527 | -2,586,225 | -30,538 | -6,980,463 |
| | Net Adjusted Savings | 594 | 5,969,694 | 3,743,355 | 19,078,531 | 12,810,453 | 158,228 | 41,760,854 |
| | Planned Savings (Net) | 5,959,948 | 26,839,364 | 1,672,489 | 4,662,193 | 47,911,107 | 0 | 87,045,100 |
| | Annual % Toward Planned Savings (Net) | 0% | 22% | 224% | 409% | 27% | N/A | 48.0% |
| | Avg. Savings per Participant (Gross) | 175 | 8,119 | 6,613 | 78,178 | 35,690 | 23,722 | 28,985 |
| | Avg. Savings per Participant (Net) | 149 | 6,901 | 5,621 | 33,065 | 18,068 | 11,302 | 14,730 |
| | | | | | | | | |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.1 | 3,366.4 | 3,385.2 | 5,921.1 | 4,217.8 | 49.0 | 16,939.6 |
| | Realization Rate | 100% | 100% | 100% | 79% | 85% | 85% | 89% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | -1,272.2 | -629.0 | -7.4 | -1,908.6 |
| | Adjusted Gross Demand | 0.1 | 3,366.4 | 3,385.2 | 4,648.9 | 3,588.8 | 41.6 | 15,031.0 |
| | Net-To-Gross Rate Weighted by Measure ¹⁴⁷ | 85% | 85% | 85% | 83% | 81% | 81% | 83% |
| | Net-to-Gross Adjustment | 0.0 | -505.0 | -507.8 | -980.7 | -821.5 | -9.1 | -2,824.0 |
| | Net Adjusted Demand | 0.1 | 2,861.4 | 2,877.4 | 3,807.5 | 2,843.9 | 33.3 | 12,423.5 |
| | Planned Demand (Net) | 0.0 | 4,296.0 | 684.7 | 1,858.4 | 7,165.3 | 0.0 | 14,004.3 |
| | Annual % Toward Planned Reduction (Net) | N/A | 67% | 420% | 205% | 40% | N/A | 88.7% |
| | Avg. Demand per Participant (Gross) | 0.02 | 3.9 | 5.1 | 10.3 | 5.9 | 3.5 | 6.0 |
| Avg. Demand per Participant (Net) | 0.02 | 3.3 | 4.3 | 6.6 | 4.0 | 2.4 | 4.4 | |

¹⁴⁷ 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), the implementation vendor has calculated that 96% 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2017 | 2018 ¹⁴⁵ | 2019 | 2020 | 2021 | 2022 | Program total (2017-2022) | |
|---|--|-----------|---------------------|---------|----------|---------|---------|---------------------------|-----|
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | - | - | - | 2,977.5 | 21.8 | 2,999.3 | |
| | Realization Rate | - | - | - | - | 74% | 67% | 74% | |
| | Realization Rate Adjustment | - | - | - | - | -762.2 | -7.3 | -769.4 | |
| | Adjusted Gross Demand | - | - | - | - | 2,215.3 | 14.6 | 2,229.9 | |
| | Net-To-Gross Rate Weighted by Measure ¹⁴⁷ | - | - | - | - | 82% | 88% | 82% | |
| | Net-to-Gross Adjustment | - | - | - | - | -531.3 | -2.5 | -533.8 | |
| | Net Adjusted Demand | - | - | - | - | 1,794.1 | 12.7 | 1,806.8 | |
| | Planned Demand (Net) | - | - | - | - | 0.0 | 0.0 | 0.0 | |
| | Annual % Toward Planned Reduction (Net) | - | - | - | - | - | - | - | N/A |
| | Avg. Demand per Participant (Gross) | - | - | - | - | 4.2 | 1.6 | 4.1 | |
| Avg. Demand per Participant (Net) | - | - | - | - | 2.5 | 0.9 | 2.5 | | |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$7,225 | \$441 | \$423 | \$1,004 | \$561 | \$589 | \$589 | |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$41.32 | \$0.05 | \$0.06 | \$0.01 | \$0.02 | \$0.02 | \$0.02 | |
| | Cml Annual \$Admin. per kW (Gross) | \$351,557 | \$113 | \$83 | \$98 | \$94 | \$99 | \$99 | |
| | Cml Annual \$EM&V per \$Total | 10.9% | 2.0% | 1.9% | 1.2% | 5.9% | 2.9% | 2.9% | |
| | Cml Annual \$Rebate per Participant (Gross) | \$157 | \$5,315 | \$6,099 | \$15,519 | \$8,898 | \$8,438 | \$8,438 | |

6.1.3.2 Key North Carolina program data

Table 6-3 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix P.11, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are provided in Appendix Q.



Table 6-3. North Carolina Non-Residential Prescriptive Program performance indicators (2018–2022)¹⁴⁸

| Category | Item | 2018 | 2019 | 2020 | 2021 | 2022 | Program total (2018–2022) |
|--------------------------------------|--|------------|-----------|-----------|-----------|----------|---------------------------|
| Operations and Management Costs (\$) | Indirect Other (Administrative) | \$10,172 | \$10,038 | \$19,470 | \$21,983 | \$357 | \$62,021 |
| | Total ¹⁴⁹ | \$180,139 | \$189,380 | \$372,698 | \$468,837 | \$8,552 | \$1,219,606 |
| Total Costs (\$) | Planned | \$400,909 | \$406,529 | \$398,979 | \$384,330 | \$3,149 | \$1,593,896 |
| | Variance | -\$220,770 | \$217,149 | -\$26,281 | \$84,507 | \$5,404 | -\$374,289 |
| | Annual % of Planned | 45% | 47% | 93% | 122% | 272% | 77% |
| Participants | Total (Gross) | 21 | 36 | 19 | 44 | 0 | 120 |
| | Planned (Gross) | 29 | 29 | 29 | 27 | 0 | 114 |
| | Variance | -8 | 7 | -10 | 17 | 0 | 6 |
| | Annual % of Planned (Gross) | 72% | 124% | 66% | 163% | N/A | 105% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 221,779 | 227,788 | 1,671,465 | 1,073,802 | 0 | 3,194,833 |
| | Realization Rate | 100% | 100% | 45% | 63% | N/A | 59% |
| | Realization Rate Adjustment | 0 | 0 | -922,714 | -392,310 | 0 | -1,315,024 |
| | Adjusted Gross Savings | 221,779 | 227,788 | 748,751 | 681,492 | 0 | 1,879,809 |
| | Net-To-Gross Rate Weighted by Measure ¹⁵⁰ | 85% | 85% | 90% | 86% | N/A | 88% |
| Net-To-Gross Adjustment | -33,267 | -34,168 | -81,918 | -121,248 | 0 | -270,601 | |

¹⁴⁸ The sum of the individual annual values may differ from the total value due to rounding.

¹⁴⁹ 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.

¹⁵⁰ 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), the implementation vendor has calculated that 96% 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2018 | 2019 | 2020 | 2021 | 2022 | Program total (2018–2022) |
|---|--|-----------|---------|---------|-----------|------|---------------------------|
| | Net Adjusted Savings | 188,512 | 193,620 | 666,832 | 560,244 | 0 | 1,609,208 |
| | Planned Savings (Net) | 1,822,814 | 113,588 | 316,636 | 2,960,183 | 0 | 5,213,221 |
| | Annual % Toward Planned Savings (Net) | 10% | 170% | 211% | 19% | N/A | 31% |
| | Avg. Savings per Participant (Gross) | 10,561 | 6,327 | 87,972 | 24,405 | N/A | 26,624 |
| | Avg. Savings per Participant (Net) | 8,977 | 5,378 | 35,096 | 12,733 | N/A | 13,410 |
| | Total Gross Deemed Demand | 25.3 | 30.4 | 179.6 | 182.0 | 0.0 | 417.2 |
| | Realization Rate | 100% | 100% | 74% | 84% | N/A | 82% |
| | Realization Rate Adjustment | 0.0 | 0.0 | -46.0 | -28.9 | 0.0 | -75.0 |
| | Adjusted Gross Demand | 25.3 | 30.4 | 133.5 | 153.1 | 0.0 | 342.3 |
| | Net-To-Gross Rate Weighted by Measure ¹⁵⁰ | 85% | 85% | 86% | 80% | N/A | 83% |
| | Net-to-Gross Adjustment | -3.8 | -4.6 | -25.9 | -36.4 | 0.0 | -70.7 |
| | Net Adjusted Demand | 21.5 | 25.8 | 112.2 | 120.8 | 0.0 | 280.3 |
| | Planned Demand (Net) | 292.0 | 46.5 | 126.2 | 442.7 | 0.0 | 907.4 |
| | Annual % Toward Planned Reduction (Net) | 7% | 56% | 89% | 27% | N/A | 31% |
| | Avg. Demand per Participant (Gross) | 1.2 | 0.8 | 9.5 | 4.1 | N/A | 3.5 |
| | Avg. Demand per Participant (Net) | 1.0 | 0.7 | 5.9 | 2.7 | N/A | 2.3 |
| | Total Gross Deemed Demand | - | - | - | 173.4 | 0.0 | 173.4 |
| | Realization Rate | - | - | - | 79% | N/A | 79% |
| | Realization Rate Adjustment | - | - | - | -35.8 | 0.0 | -35.8 |
| | Adjusted Gross Demand | - | - | - | 137.6 | 0.0 | 137.6 |
| | Net-To-Gross Rate Weighted by Measure ¹⁵⁰ | - | - | - | 80% | N/A | 80% |
| | Net-to-Gross Adjustment | - | - | - | -34.7 | 0.0 | -34.7 |
| | Net Adjusted Demand | - | - | - | 108.8 | 0.0 | 108.8 |
| | Planned Demand (Net) | - | - | - | 0.0 | 0.0 | 0.0 |
| | Annual % Toward Planned Reduction (Net) | - | - | - | - | N/A | N/A |
| | Avg. Demand per Participant (Gross) | - | - | - | 3.9 | N/A | 3.9 |
| Installed Summer Demand Reduction (kW) | | | | | | | |
| Installed Winter Demand Reduction (kW) | | | | | | | |



| Category | Item | 2018 | 2019 | 2020 | 2021 | 2022 | Program total (2018–2022) |
|----------------------------|---|---------|---------|----------|---------|---------|---------------------------|
| | Avg. Demand per Participant (Net) | - | - | - | 2.5 | N/A | 2.5 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$484 | \$279 | \$1,025 | \$500 | \$514 | \$514 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.05 | \$0.04 | \$0.01 | \$0.02 | \$0.02 | \$0.02 |
| | Cml Annual \$Admin. per kW (Gross) | \$403 | \$330 | \$108 | \$121 | \$148 | \$148 |
| | Cml Annual \$EM&V per \$Total | 4.7% | 3.8% | 2.3% | 6.7% | 4.6% | 4.6% |
| | Cml Annual \$Rebate per Participant (Gross) | \$3,919 | \$2,208 | \$13,717 | \$7,202 | \$6,161 | \$6,161 |

6.1.3.3 Additional Virginia program data

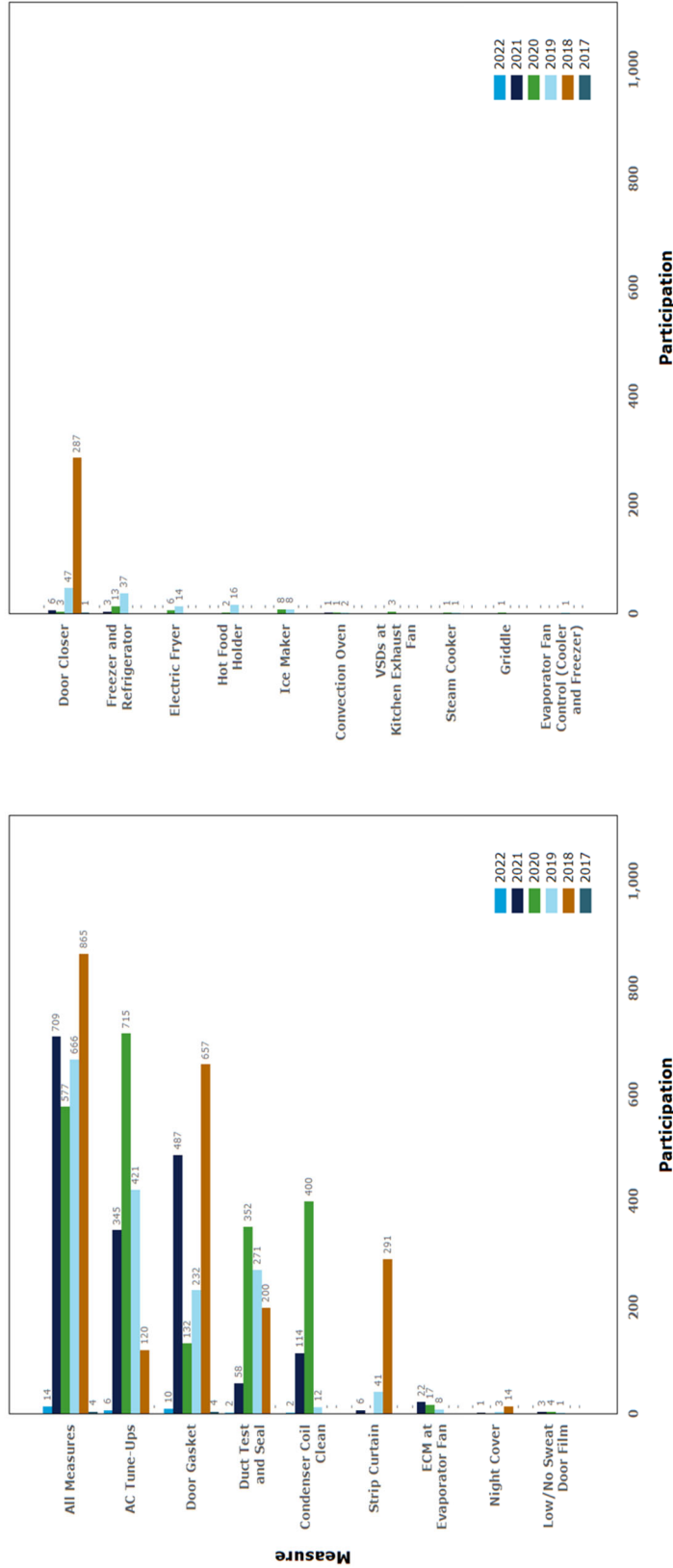
Additional program data regarding participation and overall program savings for Virginia are provided below.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Figure 6-1 shows that door gaskets were the most frequently performed measure by participants in 2022, followed by AC tune-ups and condenser coil clean. Overall, the measures with the highest adoption by participants over the program life have been AC tune-ups, door gaskets, duct test and seal, condenser coil clean, and strip curtains. All other measures have had relatively low adoption. Other detailed program participation and savings at the measure level are provided in Appendix O.18.



Figure 6-1. Virginia Non-Residential Prescriptive Program participation by measure and year





Condenser coil clean continued to account for the majority of savings, accounting for approximately 78% of 2022 savings, as shown in Figure 6-2. Most of the gross savings from this program over its life has been from four measures, condenser coil cleaning, AC tune-ups, duct test and seal, and door gaskets. Condenser coil clean also accounted for most net savings (53%) over the life of the program. However, the total net savings are only 51% of the program's total gross savings, over the six years of the program data, Figure 6-3. The lower net savings are due to the low realization rate (41%) for the condenser coil clean measure. The condenser coil clean realization rate was low primarily due to the overstating of capacity of the impacted refrigeration systems, which is directly proportional to the savings.

Figure 6-2. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by measure and year

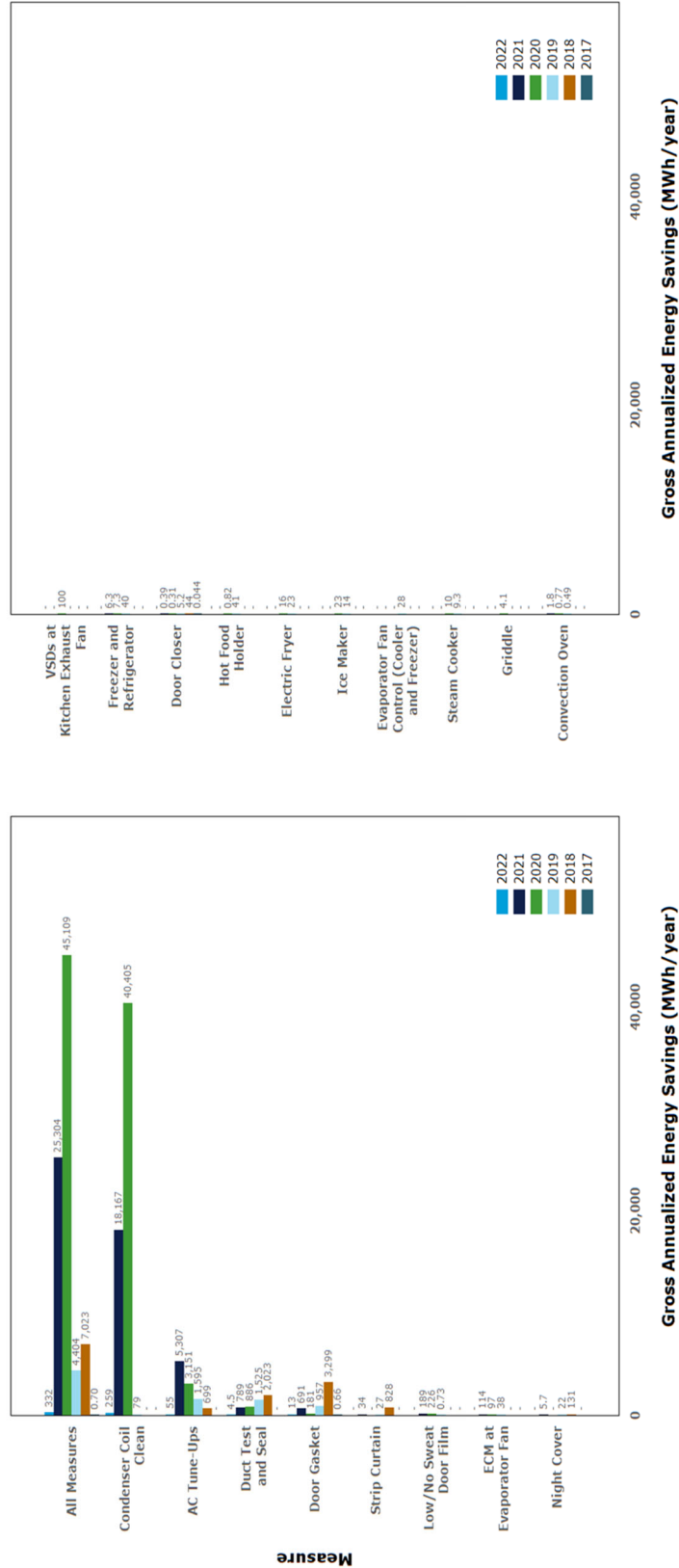
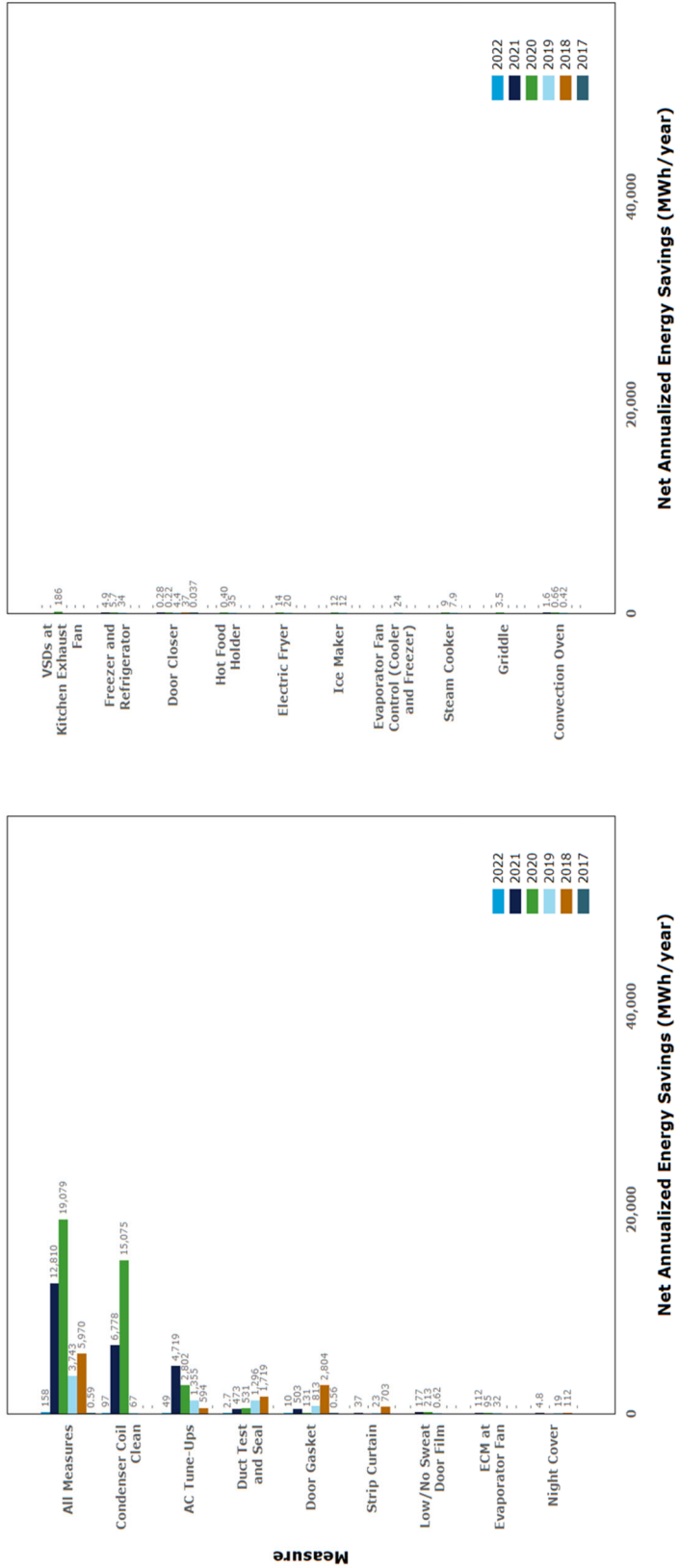




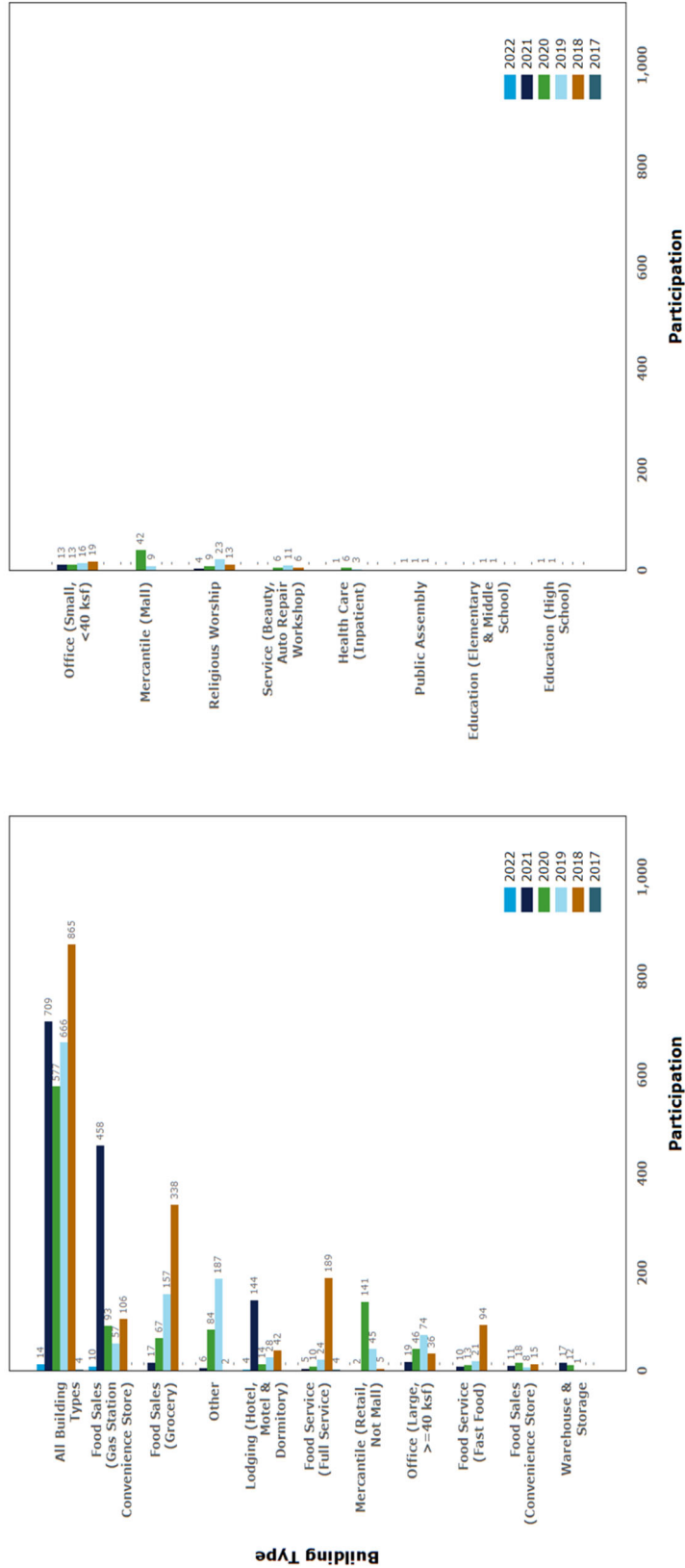
Figure 6-3. Virginia Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by measure and year





In 2022, the largest proportion of participants were in “food sales (gas station convenience store)” building types, followed by “lodging (hotel, motel & dormitory)” buildings, as shown in Figure 6-4. Over the life of this program, it has been predominantly adopted by food sales and services building types, mercantile, and large offices, which is more diverse than where the gross savings are predominantly achieved as shown in Figure 6-5.

Figure 6-4. Virginia Non-Residential Prescriptive Program gross participation by building type and year



In 2022, food sales (grocery) participants continued to contribute the majority of the gross savings (80%) to the program, as shown in Figure 6-5, as it has been for most of the program’s life.



Figure 6-6 show that food sales (grocery) participants also contributed most net savings across the program's life, the building type's lower net savings are due to its reliance on condenser coil clean measures for savings.

Figure 6-5. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by building type and year

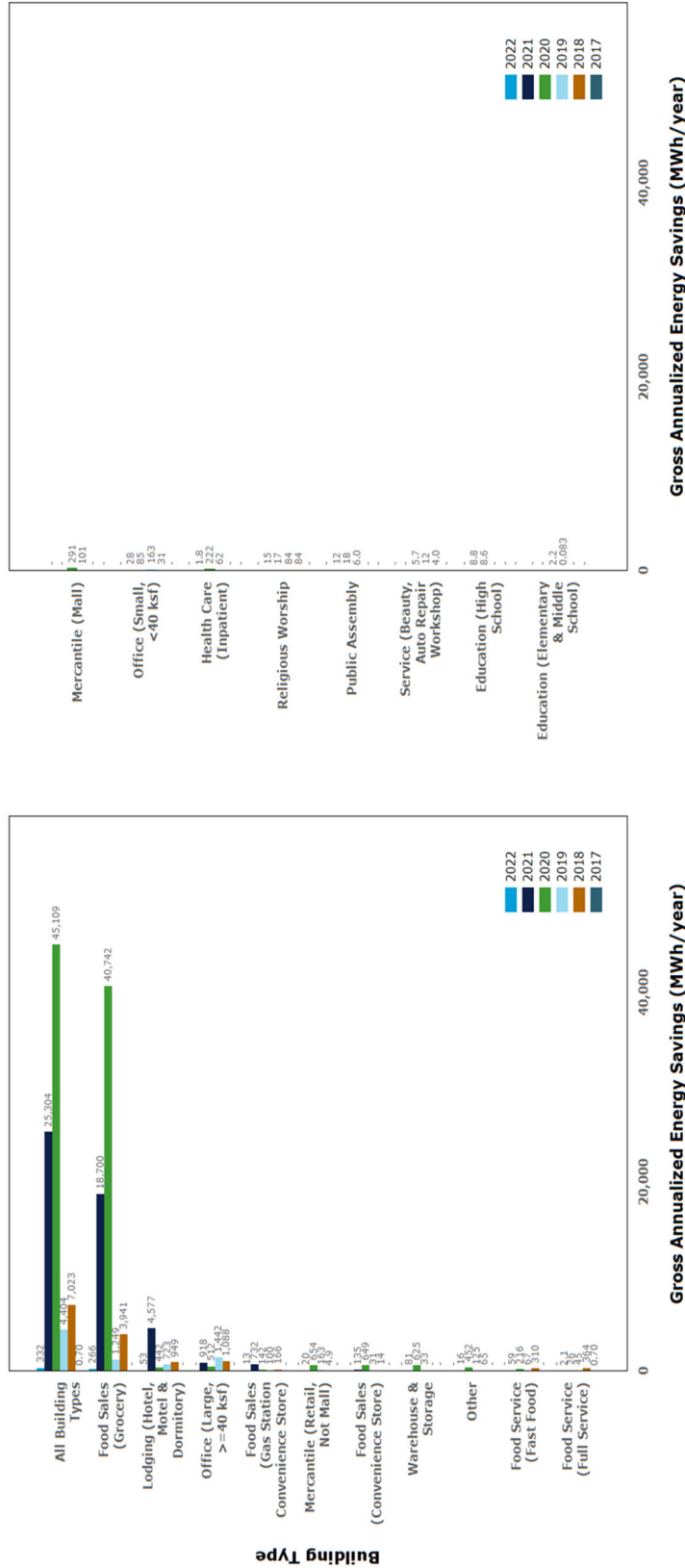
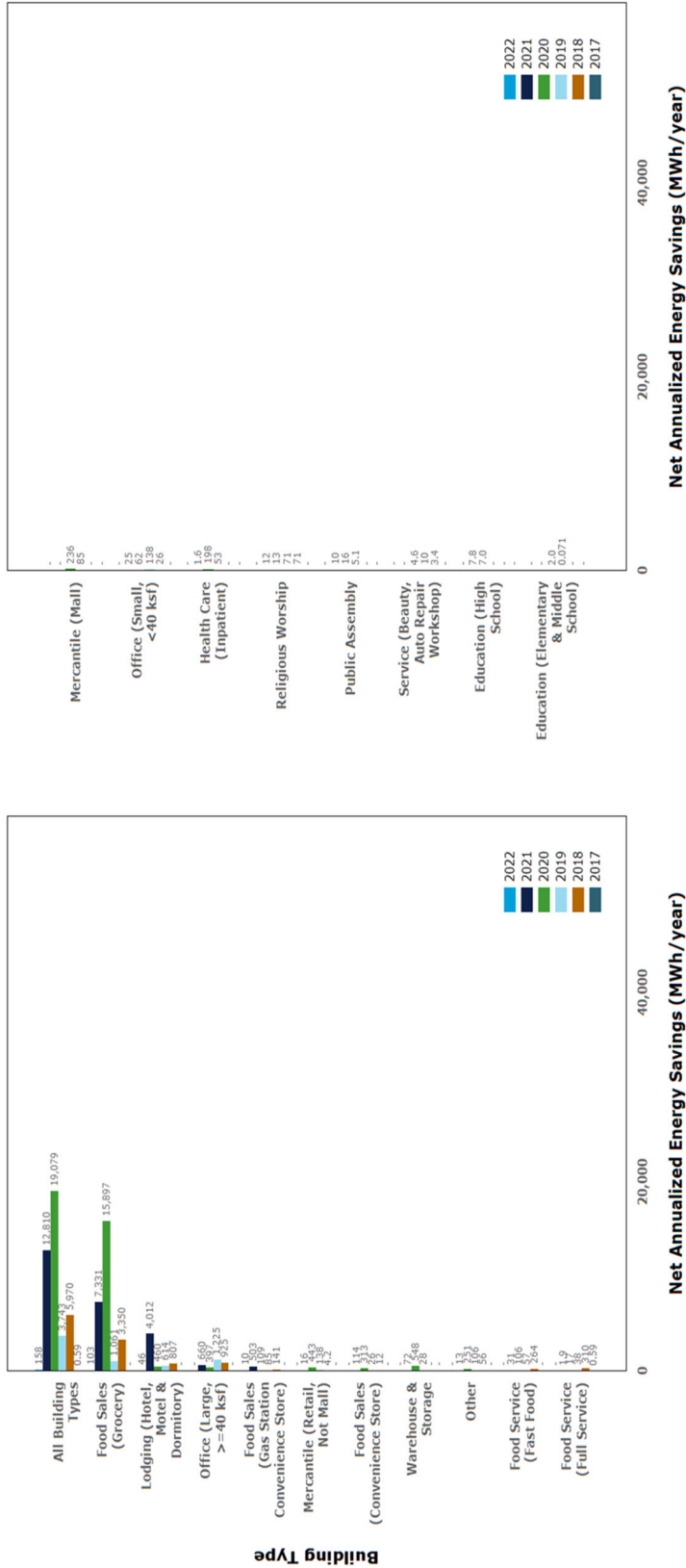




Figure 6-6. Virginia Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by building type and year





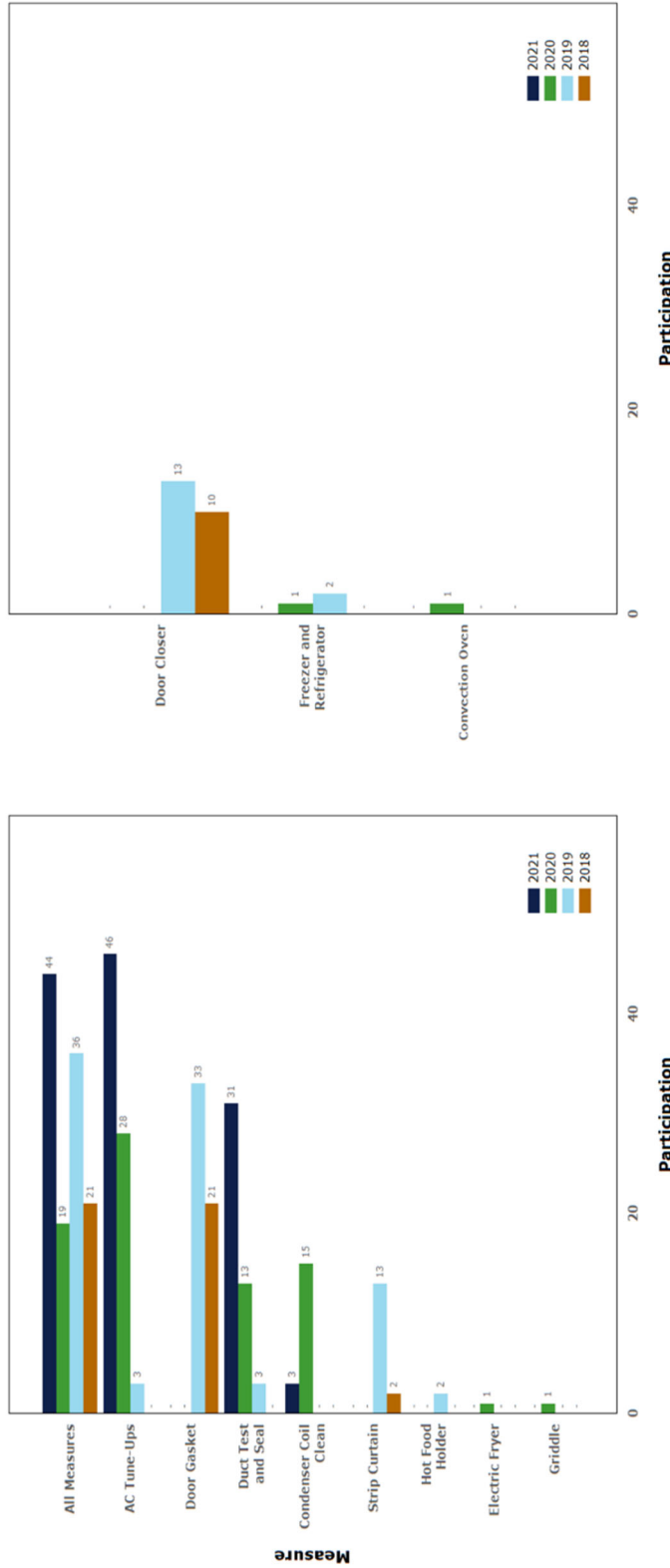
6.1.3.4 Additional North Carolina program data

Additional program data regarding participation program savings for North Carolina are provided below. Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted. Figure 6-7 through Figure 6-11 show participation and net annualized energy savings by measure type and program year. Other detailed program participation and savings at the measure level are provided in Appendix P.11.



Figure 6-7 shows that there were no participants in 2022. AC Tune-Ups have been the most implemented measures throughout the program's life. Door gaskets, and duct test and seal are the second and third most implemented measures, respectively.

Figure 6-7. North Carolina Non-Residential Prescriptive Program participation by measure



Condenser coil clean has dominated program savings over the course of the program's life, accounting for 71% of gross savings throughout the program's life, as shown in Figure 6-8. Condenser coil clean also accounted for most net savings (53%) over the life of the program. However, the total lifetime net savings are



only 50% of the program's total gross savings (Figure 6-9). The lower net savings are due to the low realization rate (41%) for the condenser coil clean measure.

Figure 6-8. North Carolina Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by measure

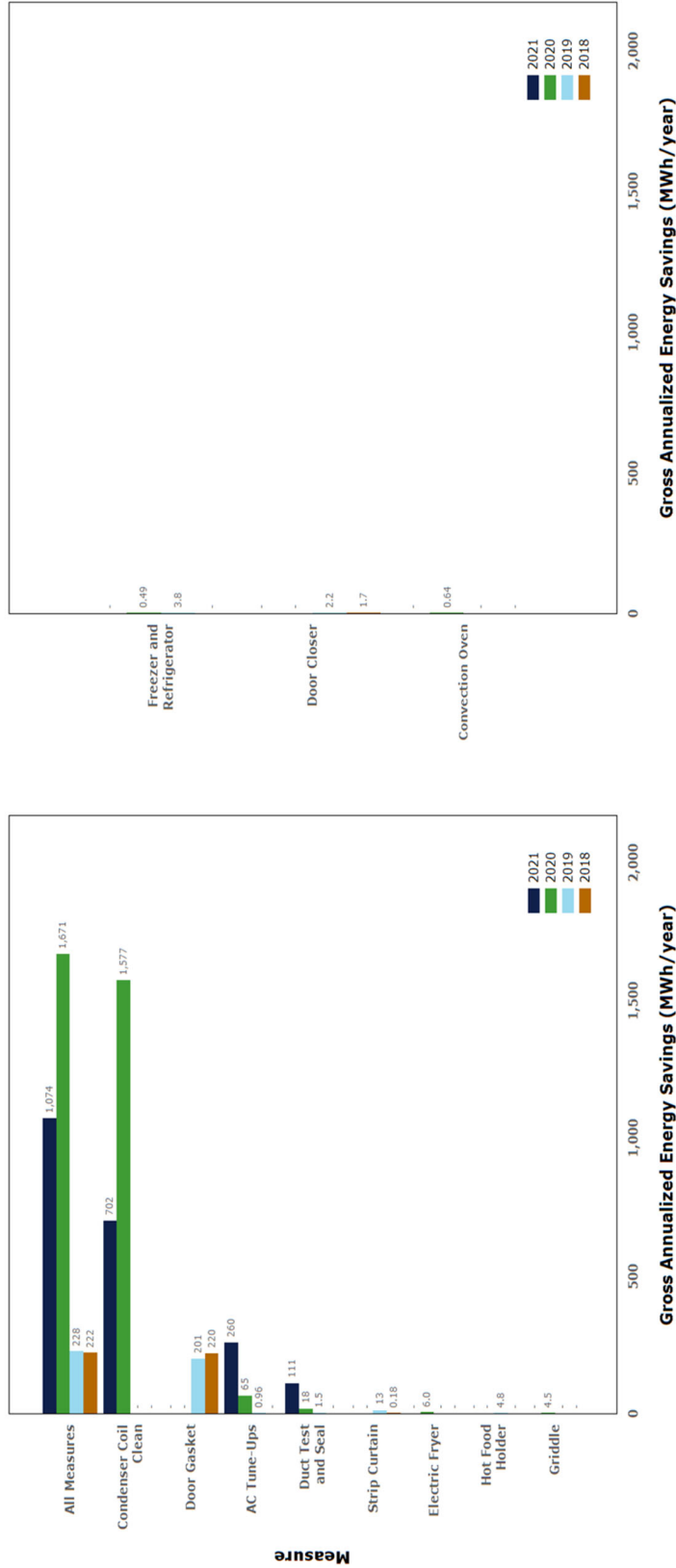




Figure 6-9. North Carolina Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by measure

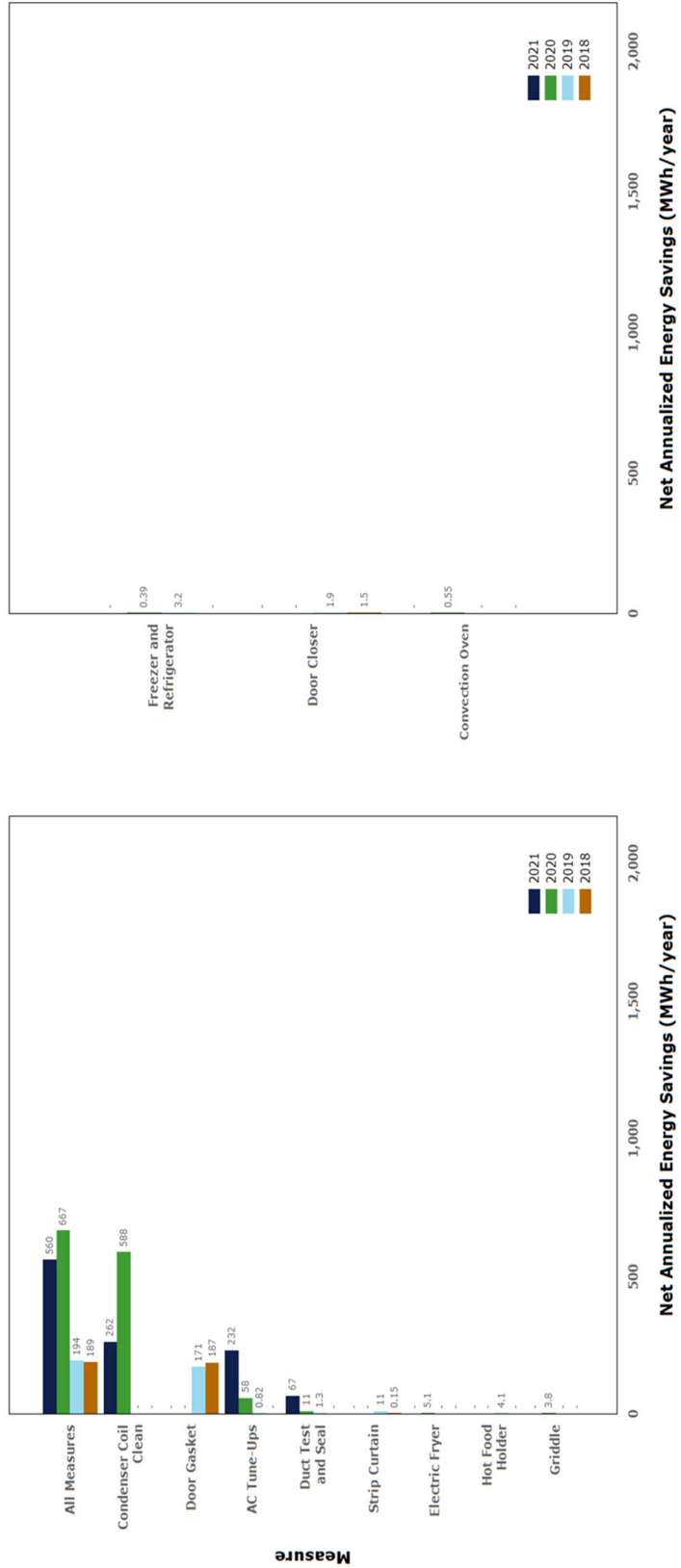




Figure 6-10 shows that “food sales (grocery),” and “mercantile (retail, not mall)” had the first and second greatest participation over the program’s life, respectively. Third most participation belongs to “food sales (gas station convenience store).”

Figure 6-10. North Carolina Non-Residential Prescriptive Program gross participation by building type

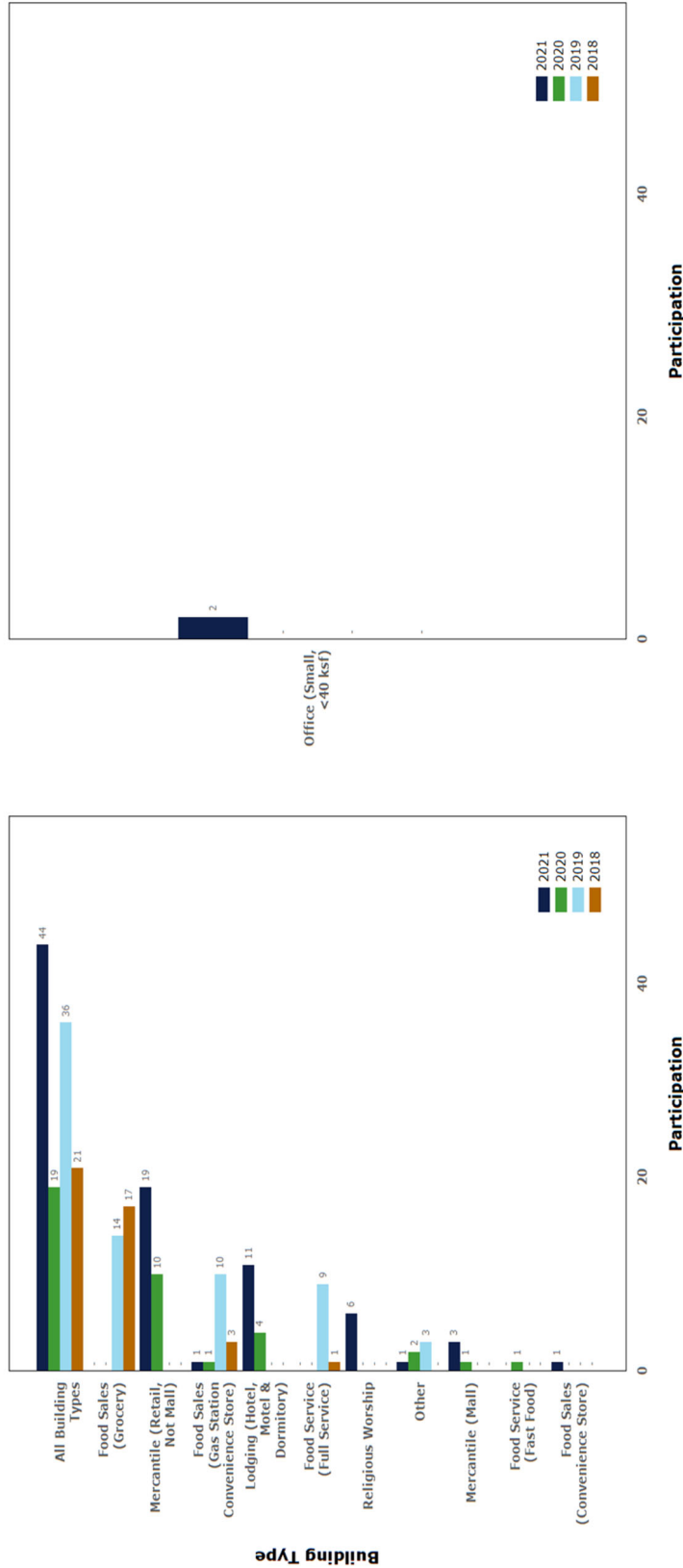




Figure 6-11 shows that the vast majority of the gross annual energy savings (85%) were generated by “food sales (grocery)” buildings since the program’s inception. Figure 6-12 show that food sales (grocery) participants also contributed most net savings across the program’s life, the building type’s lower net savings are due to its reliance on Condenser Coil Cleaning measures for savings.

Figure 6-11. North Carolina Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by building type

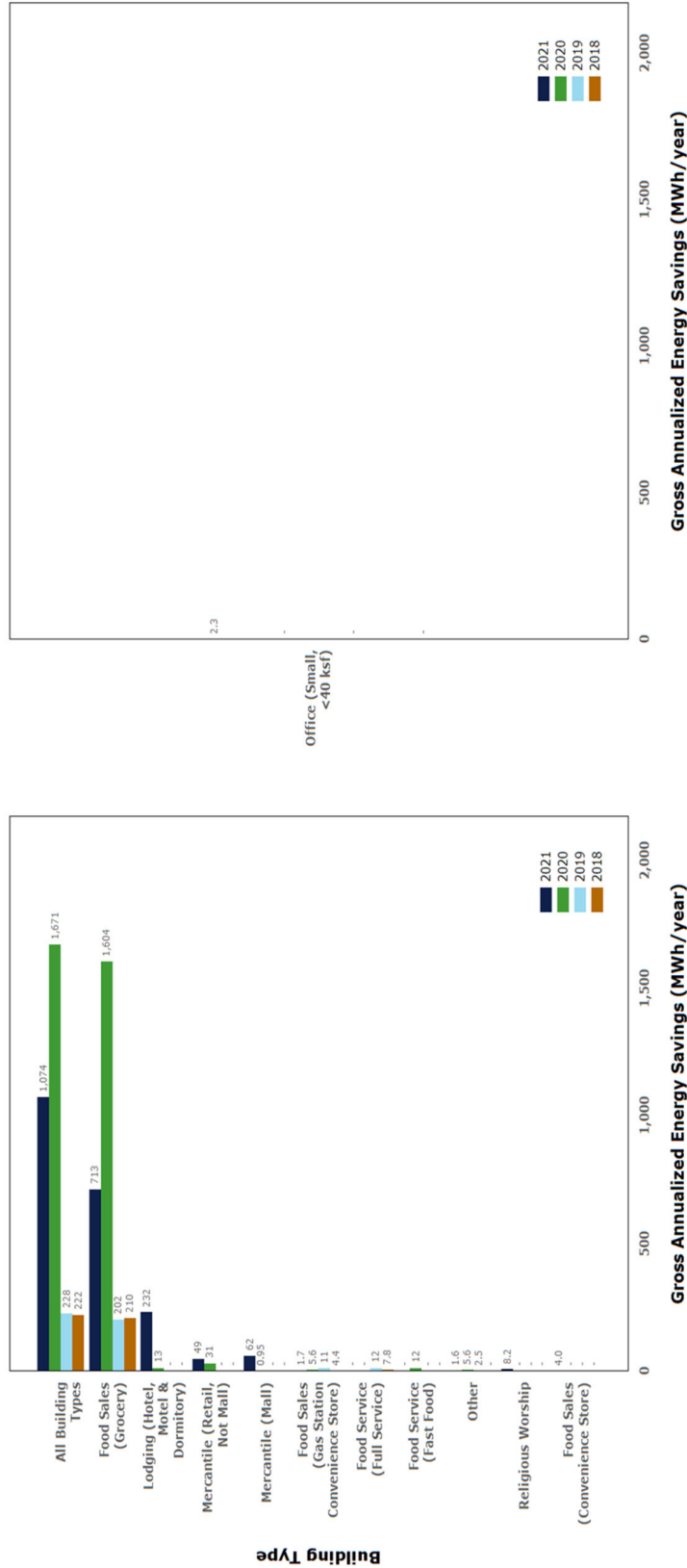
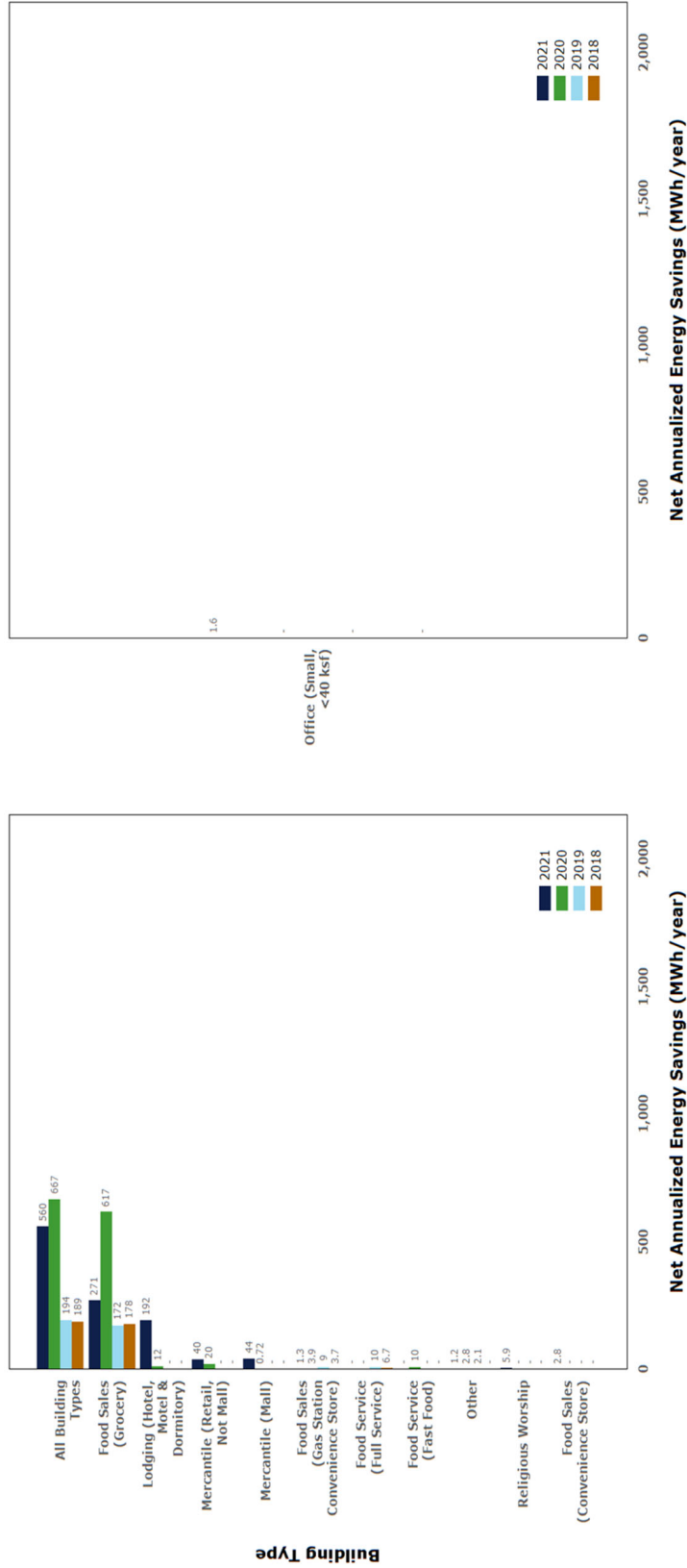




Figure 6-12. North Carolina Non-Residential Prescriptive Program net annualized energy savings (MWh/year) by building type





6.2 Non-Residential Prescriptive Enhanced Program – Virginia and North Carolina

6.2.1 Program description

This program is a new iteration of the Non-Residential Prescriptive program which stopped enrolling new customers at the end of 2021. This new iteration of the program was started in Phase IX and was approved in Virginia in the Final Order to Case No. PUR-2020-00274 on September 7, 2021. It was approved in North Carolina in the Final Order to Docket No. E-22, SUB 617 on March 18, 2022. DNV developed an EM&V Plan for this program, which is included in Appendix E.



Qualifying customers are eligible to pursue one or more of the qualified measures through a participating contractor registered with the program. To qualify for this program, the customer must be responsible for the electric bill and must be the owner of the facility or reasonably able to secure permission to complete the measures. Upon completion of the work, a rebate application is submitted by the contractor.

Customers can either opt to receive the rebate directly or authorize the rebate to be paid to the contractor. Customers are not counted as participants until a completed application form is processed and a rebate has been issued.

The program measures offered are primarily energy efficiency measures designed to decrease energy consumption through replacement of inefficient equipment, installation of new equipment that exceeds current building code efficiency standards and recommissioning of existing HVAC equipment. Measures eligible to receive a rebate include those shown in Table 6-4.

In 2022, the program continued both conventional (bill inserts, brochures, trade shows, etc.), web-based (search engine marketing, pop-up ads, etc.), and one-on-one phone calls marketing approaches.

Table 6-4. Measures offered through Non-Residential Prescriptive Enhanced Program

| End use | Measure |
|---|--|
| Cooking | Commercial Convection Oven |
| | Commercial Combination Oven |
| | Commercial Fryer |
| | Commercial Griddle |
| | Commercial Hot Food Holding Cabinet |
| | Commercial Steam Cooker |
| Domestic Hot Water | Heat Pump Water Heater |
| | Pre-Rinse Sprayer |
| Heating, Ventilation, Air-conditioning | Air Conditioning Tune-up |
| | Duct Test and Seal |
| | Electronically Commutated Motor |
| | Guest Room Occupancy |
| | Parking Ventilation |
| | Variable Speed Drives on Kitchen Exhaust Fan |
| Plug Load/Appliance | Commercial Dishwasher |
| | Commercial Dryer |
| | Commercial Washing Machine |
| | Food Seal Wrapper |
| | Ozone Laundry |



| End use | Measure |
|---------------|---|
| Recreation | Heat Pump Pool Heater |
| | Pool Spa Cover |
| | Variable Speed Pool Pump |
| Refrigeration | Commercial Freezers and Refrigerators |
| | Commercial Ice Maker |
| | Door Closer (Cooler and Freezer) |
| | Door Gasket (Cooler and Freezer) |
| | Evaporator Fan Electronically Commutated Motor (ECM) Retrofit |
| | Low/Anti-Sweat Door Film |
| | Refrigeration Condenser Coil Cleaning |
| | Strip Curtain (Cooler and Freezer) |

6.2.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 6-5 outlines Dominion Energy’s initial program planning assumptions used to design the program.

Table 6-5. Non-Residential Prescriptive Enhanced Program planning assumptions

| Assumption | Value |
|--|---------------------------|
| Target Market | Non-residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 6.1 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 29,999 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 6.4 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 4.65 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 5.7 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 4.19 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 26,999 |
| Net Average Coincident Peak Demand Reduction (kW) per Participant | 5.5 |
| Average Rebate per Participant (US\$) | \$4,547 per participant |

6.2.3 Assessment of program progress toward plan

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

6.2.3.1 Key Virginia program data

Table 6-6 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.19 provides detailed program indicators by year and month,



program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 6-6. Virginia Non-Residential Prescriptive Enhanced Program performance indicators (2021–2022)¹⁵¹

| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|--|----------|-------------|---------------------------|
| Operations and Management Costs (\$) | | | | |
| | Indirect Other (Administrative) | \$1,549 | \$236,025 | \$237,574 |
| Total Costs (\$) | Total ¹⁵² | \$33,042 | \$5,652,798 | \$5,685,839 |
| | Planned | \$0 | \$4,229,167 | \$4,229,167 |
| | Variance | \$33,042 | \$1,423,631 | \$1,456,673 |
| | Annual % of Planned | N/A | 134% | 134% |
| Participants | Total (Gross) | 0 | 366 | 366 |
| | Planned (Gross) | 0 | 564 | 564 |
| | Variance | 0 | -198 | -198 |
| | Annual % of Planned (Gross) | N/A | 65% | 65% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 8,848,159 | 8,848,159 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 8,848,159 | 8,848,159 |
| | Net-To-Gross Rate Weighted by Measure ¹⁵³ | N/A | 90% | 90% |
| | Net-To-Gross Adjustment | 0 | -884,816 | -884,816 |
| | Net Adjusted Savings | 0 | 7,963,344 | 7,963,344 |
| | Planned Savings (Net) | N/A | 15,227,492 | 15,227,492 |
| | Annual % Toward Planned Savings (Net) | N/A | 52.3% | 52.3% |
| | Avg. Savings per Participant (Gross) | N/A | 24,175 | 24,175 |
| | Avg. Savings per Participant (Net) | 0 | 21,758 | 21,758 |
| Installed Summer | Total Gross Deemed Demand | 0.0 | 5,597.9 | 5,597.9 |
| | Realization Rate | N/A | 100% | 100% |

¹⁵¹ The sum of the individual annual values may differ from the total value due to rounding.

¹⁵² 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.

¹⁵³ 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), the implementation vendor has calculated that 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2021 | 2022 | Program total (2021–2022) |
|---|--|-------|----------|---------------------------|
| Demand Reduction (kW) | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 5,597.9 | 5,597.9 |
| | Net-To-Gross Rate Weighted by Measure ¹⁴⁷ | N/A | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | -559.8 | -559.8 |
| | Net Adjusted Demand | 0.0 | 5,038.2 | 5,038.2 |
| | Planned Demand (Net) | 0.0 | 3,222.4 | 3,222.4 |
| | Annual % Toward Planned Reduction (Net) | N/A | 156.3% | 156.3% |
| | Avg. Demand per Participant (Gross) | N/A | 15.3 | 15.3 |
| | Avg. Demand per Participant (Net) | N/A | 13.8 | 13.8 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 853.6 | 853.6 |
| | Realization Rate | N/A | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 853.6 | 853.6 |
| | Net-To-Gross Rate Weighted by Measure ¹⁴⁷ | N/A | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | -85.4 | -85.4 |
| | Net Adjusted Demand | 0.0 | 768.2 | 768.2 |
| | Planned Demand (Net) | 0.0 | 2,361.2 | 2,361.2 |
| | Annual % Toward Planned Reduction (Net) | N/A | 32.5% | 32.5% |
| | Avg. Demand per Participant (Gross) | N/A | 2.3 | 2.3 |
| | Avg. Demand per Participant (Net) | N/A | 2.1 | 2.1 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$649 | \$649 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0.03 | \$0.03 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$42 | \$42 |
| | Cml Annual \$EM&V per \$Total | 80.2% | 3.8% | 3.8% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$11,883 | \$11,883 |



6.2.3.2 Key North Carolina program data

Table 6-7 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix P.11, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are provided in Appendix Q.20.

Table 6-7. North Carolina Non-Residential Prescriptive Program performance indicators (2022)

| Category | Item | 2022 |
|---|---------------------------------------|-----------|
| Operations and Management Costs (\$) | | |
| | | |
| | Indirect Other (Administrative) | \$907 |
| Total Costs (\$) | Total ¹⁵⁴ | \$21,735 |
| | Planned | \$108,401 |
| | Variance | -\$86,667 |
| | Annual % of Planned | 20% |
| Participants | Total (Gross) | 0 |
| | Planned (Gross) | 36 |
| | Variance | -36 |
| | Annual % of Planned (Gross) | 0% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 |
| | Realization Rate | N/A |
| | Realization Rate Adjustment | 0 |
| | Adjusted Gross Savings | 0 |
| | Net-To-Gross Rate Weighted by Measure | N/A |
| | Net-To-Gross Adjustment | 0 |
| | Net Adjusted Savings | 0 |
| | Planned Savings (Net) | 971,968 |
| | Annual % Toward Planned Savings (Net) | 0% |
| | Avg. Savings per Participant (Gross) | N/A |
| Avg. Savings per Participant (Net) | N/A | |

¹⁵⁴ 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.

¹⁵⁵ 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), the implementation vendor has calculated that 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2022 |
|---|--|-------|
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 |
| | Realization Rate | N/A |
| | Realization Rate Adjustment | 0.0 |
| | Adjusted Gross Demand | 0.0 |
| | Net-To-Gross Rate Weighted by Measure ¹⁵⁶ | N/A |
| | Net-to-Gross Adjustment | 0.0 |
| | Net Adjusted Demand | 0.0 |
| | Planned Demand (Net) | 205.7 |
| | Annual % Toward Planned Reduction (Net) | 0% |
| | Avg. Demand per Participant (Gross) | N/A |
| | Avg. Demand per Participant (Net) | N/A |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 |
| | Realization Rate | N/A |
| | Realization Rate Adjustment | 0.0 |
| | Adjusted Gross Demand | 0.0 |
| | Net-To-Gross Rate Weighted by Measure ¹⁵⁷ | N/A |
| | Net-to-Gross Adjustment | 0.0 |
| | Net Adjusted Demand | 0.0 |
| | Planned Demand (Net) | 150.7 |
| | Annual % Toward Planned Reduction (Net) | 0% |
| | Avg. Demand per Participant (Gross) | N/A |
| | Avg. Demand per Participant (Net) | N/A |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A |
| | Cml Annual \$Admin. per kW (Gross) | N/A |
| | Cml Annual \$EM&V per \$Total | 14.2% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A |

6.2.3.3 Additional Virginia program data

Additional program data regarding energy savings per participant, participation, and overall program savings for Virginia are provided in this section.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they

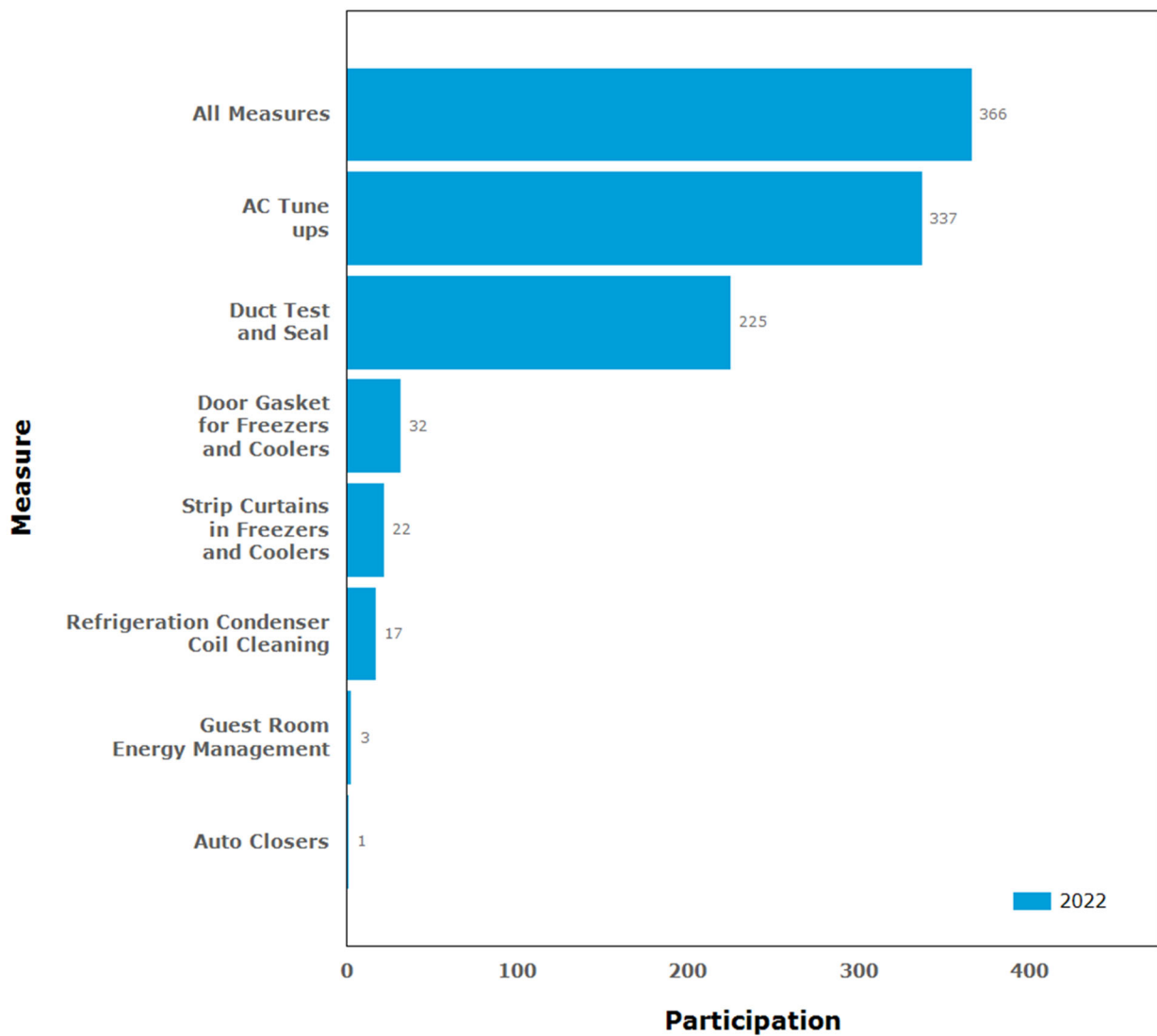
¹⁵⁶ Ibid.
¹⁵⁷ Ibid.



participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once—the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Other detailed program participation and savings at the measure level are provided in Appendix O.19, along with other detailed program participation and savings at the measure level. Figure 6-13 shows that AC tune-ups were the most frequently performed measure by participants in 2022, followed by duct test and seal. All other measures have had relatively low adoption.

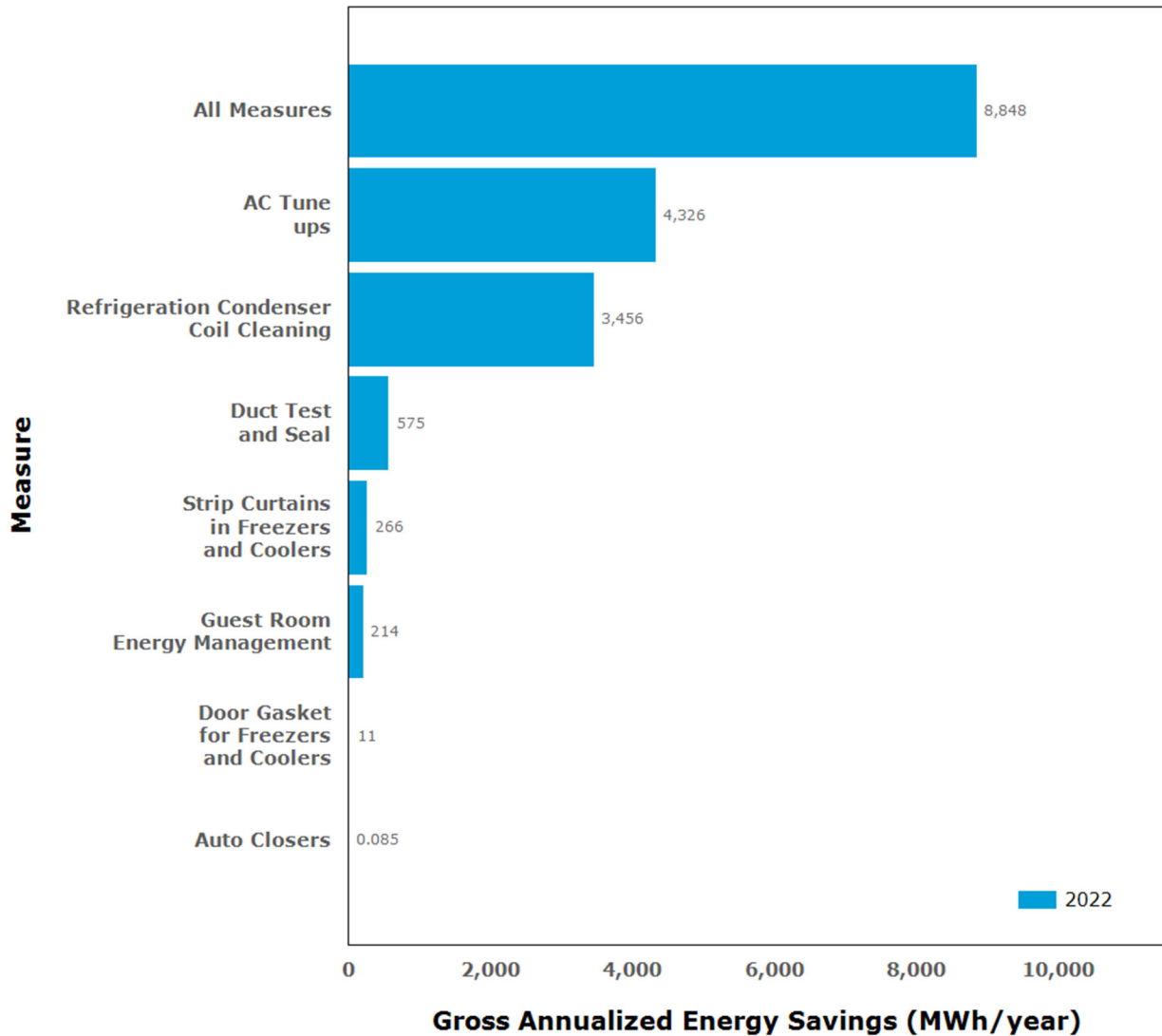
Figure 6-13. Virginia Non-Residential Prescriptive Program participation by measure and year





AC tune-ups accounts for a plurality of savings, approximately 49% of 2022 savings, as shown in Figure 6-14. Duct test and seal has the second most savings at 39%. All other remaining measures account for 12% of 2022 savings.

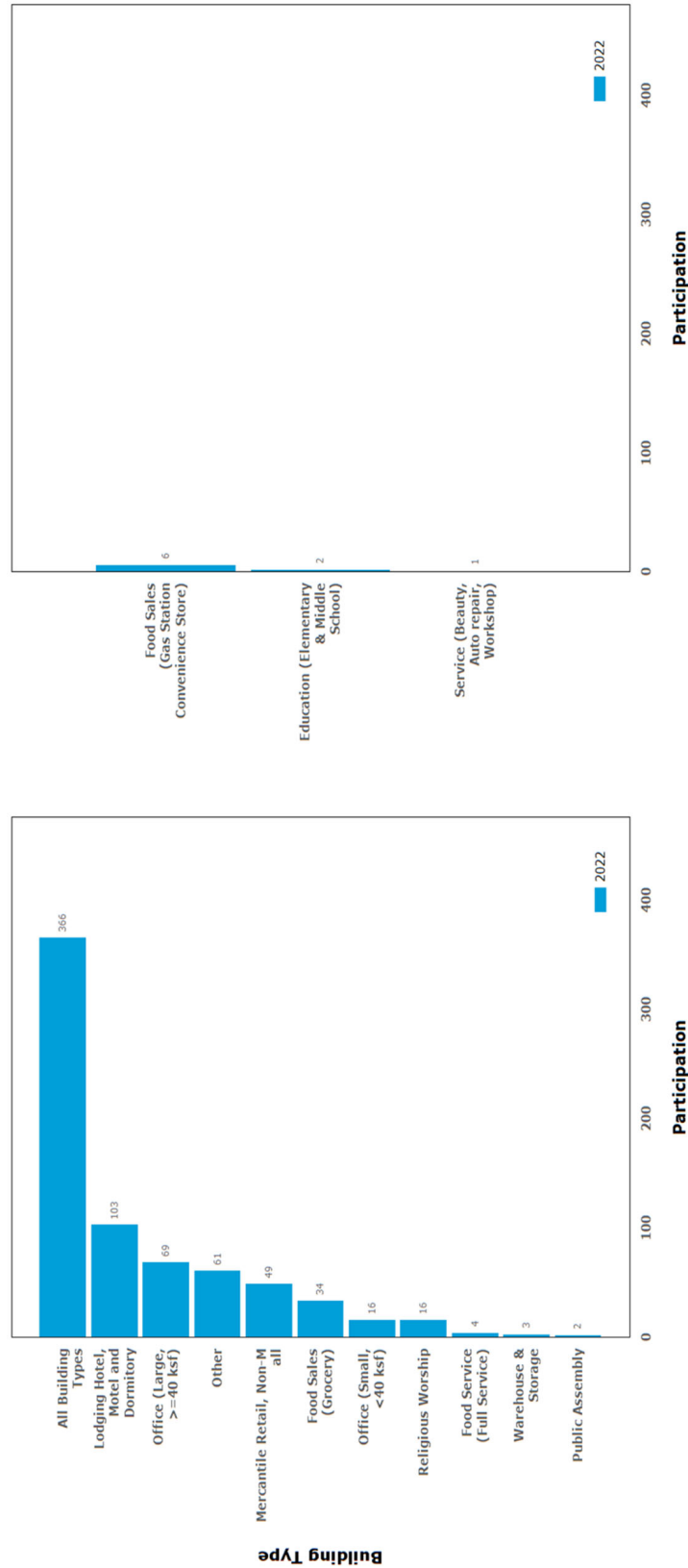
Figure 6-14. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by measure and year





In 2022, the largest proportion of participants were in "lodging (hotel, motel & dormitory)" buildings, followed by "office (large, >= 40 ksf)," "other," "mercantile retail, non-mall," and "food sales (grocery)," as shown in Figure 6-15.

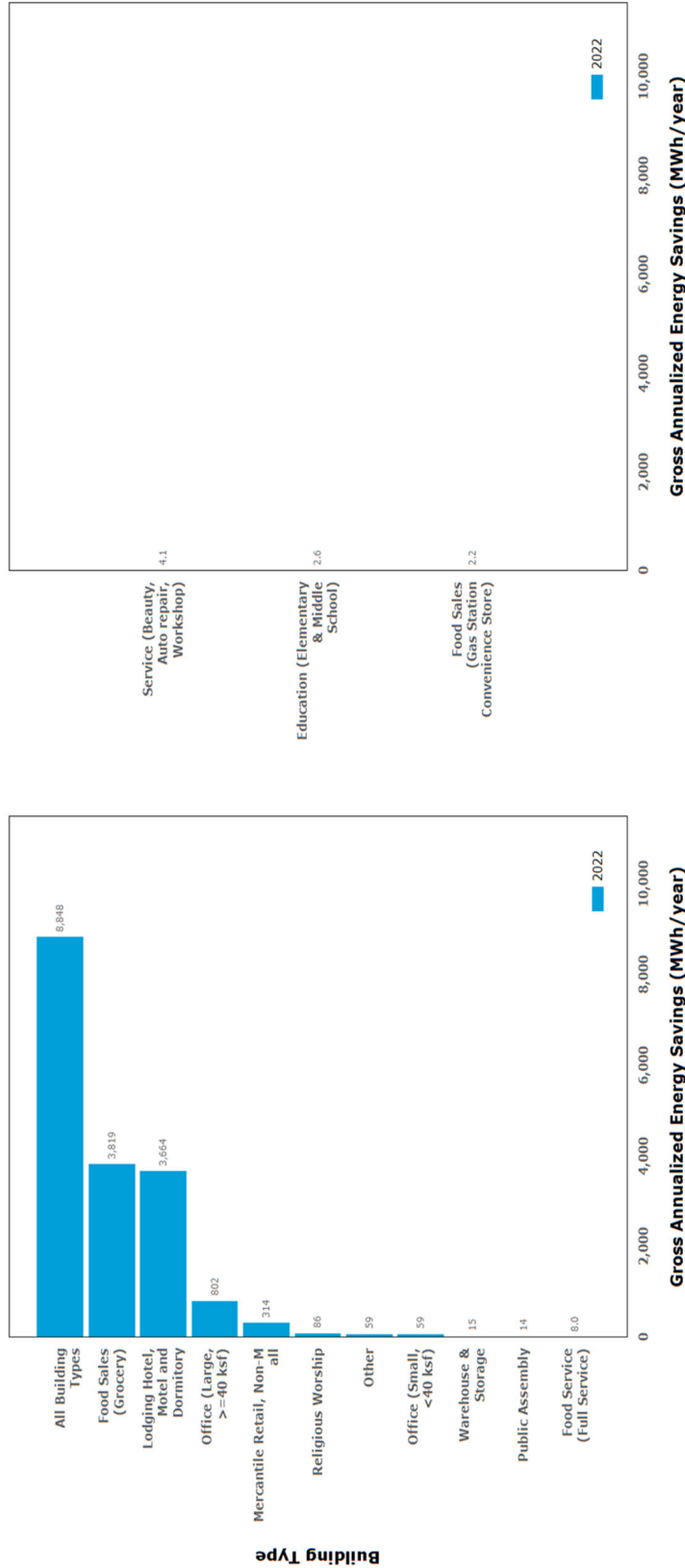
Figure 6-15. Virginia Non-Residential Prescriptive Program gross participation by building type and year





In 2022, “food sales (grocery)” and “lodging (hotel, motel & dormitory)” participants contributed the majority of the savings (85%) to the program, as shown in Figure 6-16.

Figure 6-16. Virginia Non-Residential Prescriptive Program gross annualized energy savings (MWh/year) by building type and year



6.2.3.4 Additional North Carolina program data

Additional program data regarding energy savings per participant, participation, and overall program savings for North Carolina are typically provided in this section, but there were no participants in the program in 2022.



6.3 Non-Residential Heating and Cooling Efficiency Program – Virginia and North Carolina

6.3.1 Program description

The Non-Residential Heating and Cooling Efficiency Program provides incentives to qualifying non-residential customers to either upgrade existing heating or cooling equipment or install new energy efficient equipment. All non-residential customers are eligible for this program except those who are exempt by statute or contract or have opted out. Upgrade measures eligible to receive a rebate include:

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



This program is implemented through a contractor network, so customers must use a participating contractor to be eligible for the rebate. Customers are not considered participants until a completed application form has been processed and a rebate has been issued. This process can take several months since customers have 45 days after measure installation to submit their rebate application, and the Company has 90 days after receipt of the application to process it.

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, 2019.¹⁵⁸ The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 574). The program officially launched on January 1, 2020.¹⁵⁹ Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

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, 2019.¹⁵⁸ The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 574). The program officially launched on January 1, 2020.¹⁵⁹ Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details.

A major change in program delivery happened in the fall of 2021 when the program was expanded to include customers with over 500 kW of demand, per the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021. In 2022, the program continued using traditional marketing methods such as bill inserts, flyers, hand-outs, phone calls, and emails. Additionally, according to interviews with the Program Manager, a new online platform for commercial customers called "Manage Your Account" (MYA) was launched. The platform includes advertising for resources to save money on facility heating and cooling.

6.3.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program that is included in Appendix E. For the upcoming period, the approach will include reviewing the tracking data and then estimating gross energy savings and demand reduction using the DE TRM calculations located in Appendix F.

Table 6-8 outlines Dominion Energy's initial program planning assumptions used to design the program. DNV uses the planned NTG factor in its net savings calculations until it can be verified through EM&V.

¹⁵⁸ Virginia Non-Residential Heating and Cooling Efficiency Terms and Conditions, <https://domsavings.com/wp-content/uploads/2022/10/DSM-VII-DEV-NR-HCE-Terms-and-Conditions-Final-09262022.pdf>. Accessed February 21, 2023.

¹⁵⁹ Virginia Non-Residential Heating and Cooling Efficiency Terms and Conditions <https://domsavings.com/wp-content/uploads/2022/10/DSM-VII-DENC-NR-Heating-Cooling-Efficiency-Terms-and-Conditions-Final-10062022.pdf>. Accessed February 21, 2023.



Table 6-8. Non-Residential Heating and Cooling Efficiency Program planning assumptions system-wide

| Assumption | Value |
|--|---------------------------|
| Target Market | Non-residential customers |
| NTG Factor | 70% |
| Measure Life (years) | 15 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 17,761 |
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 2.53 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 3.37 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 12,433 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 1.77 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 2.36 |
| Average Rebate (US\$) per Participant | \$1,901 |

6.3.3 Assessment of program progress toward plan

The next subsection provides the tables summarizing the key indicators of the Non-Residential Heating and Cooling Efficiency program progress in Virginia.

6.3.3.1 Key Virginia program data

Table 6-9 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix O.20 provides detailed program indicators by year and month, along with a comparison of program savings with usage by rate schedule. Appendix O.20 provides program performance by measure. Appendix Q provides cumulative gross and net savings.



Table 6-9. Virginia Non-Residential Heating and Cooling Efficiency program performance indicators (2019–2022)¹⁶⁰

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|-----------------------------------|-------------|--------------|--------------|-------------|---------------------------|
| Operations and Management Costs (\$) | Indirect Other (Administrative) | \$11,566 | \$38,539 | \$27,297 | \$48,993 | \$126,395 |
| | Total ¹⁶¹ | \$342,194 | \$723,971 | \$582,157 | \$1,173,390 | \$2,821,712 |
| Total Costs (\$) | Planned | \$1,130,793 | \$1,921,705 | \$1,871,906 | \$1,907,579 | \$6,831,984 |
| | Variance | -\$788,599 | -\$1,197,735 | -\$1,289,750 | -\$734,189 | -\$4,010,272 |
| | Annual % of Planned | 30% | 38% | 31% | 62% | 41% |
| Participants | Total (Gross) | 0 | 30 | 44 | 51 | 125 |
| | Planned (Gross) | 350 | 658 | 658 | 658 | 2,324 |
| | Variance | -350 | -628 | -614 | -607 | -2,199 |
| | Annual % of Planned (Gross) | 0% | 5% | 7% | 8% | 5% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 2,352,639 | 527,840 | 10,356,854 | 13,237,334 |
| | Realization Rate | N/A | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 2,352,639 | 527,840 | 10,356,854 | 13,237,334 |
| | Net-To-Gross Ratio ¹⁶² | N/A | 70% | 70% | 70% | 70% |

¹⁶⁰ The sum of the individual annual values may differ from the total value due to rounding.

¹⁶¹ 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.

¹⁶² 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), 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019-2022) |
|---|--|-----------|-----------|-----------|------------|---------------------------|
| | Net-to-Gross Adjustment | 0 | -705,792 | -158,352 | -3,107,056 | -3,971,200 |
| | Net Adjusted Savings | 0 | 1,646,848 | 369,488 | 7,249,798 | 9,266,133 |
| | Planned Savings (Net) | 4,351,404 | 8,180,639 | 8,180,639 | 8,180,639 | 28,893,322 |
| | Annual % Toward Planned Savings (Net) | 0% | 20.1% | 4.52% | 88.6% | 32.1% |
| | Avg. Savings per Participant (Gross) | N/A | 78,421 | 11,996 | 203,076 | 105,899 |
| | Avg. Savings per Participant (Net) | N/A | 54,895 | 8,397 | 142,153 | 74,129 |
| | Total Gross Deemed Demand | 0.0 | 407.9 | 58.8 | 2,809.2 | 3,275.8 |
| | Realization Rate | N/A | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 407.9 | 58.8 | 2,809.2 | 3,275.8 |
| Installed Summer Demand Reduction (kW) | Net-To-Gross Rate Ratio ¹⁶² | N/A | 70% | 70% | 70% | 70% |
| | Net-to-Gross Adjustment | 0.0 | -122.4 | -17.6 | -842.8 | -982.8 |
| | Net Adjusted Demand | 0.0 | 285.5 | 41.1 | 1,966.4 | 2,293.1 |
| | Planned Demand (Net) | 621.0 | 1,167.4 | 1,167.4 | 1,167.4 | 4,123.1 |
| | Annual % Toward Planned Demand (Net) | 0% | 24.5% | 3.52% | 168.4% | 55.6% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 13.6 | 1.3 | 55.1 | 26.2 |
| | Avg. Demand per Participant (Net) | N/A | 9.5 | 0.9 | 38.6 | 18.3 |
| | Total Gross Deemed Demand | - | - | 29.0 | 168.1 | 197.1 |
| | Realization Rate | - | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| Installed Winter Demand Reduction (kW) | Adjusted Gross Demand | - | - | 29.0 | 168.1 | 197.1 |
| | Net-To-Gross Rate Ratio ¹⁶² | - | - | 70% | 70% | 70% |
| | Net-to-Gross Adjustment | - | - | -8.7 | -50.4 | -59.1 |
| | Net Adjusted Demand | - | - | 20.3 | 117.7 | 138.0 |



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|----------------------------|---|-------|---------|---------|---------|---------------------------|
| | Planned Demand (Net) | - | - | 1,549.9 | 1,549.9 | 3,099.8 |
| | Annual % Toward Planned Demand (Net) | - | - | 1.31% | 7.59% | 4.45% |
| | Avg. Peak Demand per Participant (Gross) | - | - | 0.7 | 3.3 | 2.1 |
| | Avg. Demand per Participant (Net) | - | - | 0.5 | 2.3 | 1.5 |
| Program Performance | Cmi Annual \$Admin. per Participant (Gross) | N/A | \$1,670 | \$1,046 | \$1,011 | \$1,011 |
| | Cmi Annual \$Admin. per kWh/year (Gross) | N/A | \$0.02 | \$0.03 | \$0.01 | \$0.01 |
| | Cmi Annual \$Admin. per kW (Gross) | N/A | \$123 | \$166 | \$39 | \$39 |
| | Cmi Annual \$EM&V per Total Costs (\$) | 11.1% | 12.2% | 14.7% | 12.3% | 12.3% |
| | Cmi Annual \$Rebate per Participant (Gross) | N/A | \$6,662 | \$3,518 | \$7,374 | \$7,374 |



6.3.3.2 Key North Carolina program data

Table 6-10 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Appendix P.12 and M provide detailed program indicators by year and month, and cumulative gross and net savings, respectively. Appendix P.12.3 provide program performance by measure and Appendix P.12.4 shows a comparison of program savings with usage by rate schedule.

Table 6-10. North Carolina Non-Residential Heating and Cooling Efficiency Program performance indicators (2020–2022)¹⁶³

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|-----------------------------------|-----------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$1,598 | \$1,582 | \$1,825 | \$5,004 |
| Total Costs (\$) | Total ¹⁶⁴ | \$30,873 | \$33,730 | \$43,699 | \$108,302 |
| | Planned | \$122,049 | \$116,478 | \$121,715 | \$360,241 |
| | Variance | -\$91,176 | -\$82,748 | -\$78,016 | -\$251,940 |
| | Annual % of Planned | 25% | 29% | 36% | 30% |
| Participants | Total (Gross) | 0 | 1 | 1 | 2 |
| | Planned (Gross) | 42 | 42 | 42 | 126 |
| | Variance | -42 | -41 | -41 | -124 |
| | Annual % of Planned (Gross) | 0% | 2% | 2% | 2% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 2,946 | 139,559 | 142,505 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 2,946 | 139,559 | 142,505 |
| | Net-To-Gross Ratio ¹⁶⁵ | N/A | 70% | 70% | 70% |
| | Net-to-Gross Adjustment | 0 | -884 | -41,868 | -42,751 |
| | Net Adjusted Savings | 0 | 2,062 | 97,691 | 99,753 |
| | Planned Savings (Net) | 522,168 | 522,168 | 522,168 | 1,566,505 |
| Annual % Toward Planned Savings (Net) | 0% | 0.39% | 18.7% | 6.37% | |

¹⁶³ The sum of the individual annual values may differ from the total value due to rounding.

¹⁶⁴ 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.

¹⁶⁵ 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), 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|-------|---------|---------|---------------------------|
| | Avg. Savings per Participant (Gross) | N/A | 2,946 | 139,559 | 71,252 |
| | Avg. Savings per Participant (Net) | N/A | 2,062 | 97,691 | 49,877 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.5 | 17.6 | 18.1 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.5 | 17.6 | 18.1 |
| | Net-To-Gross Ratio ¹⁶⁶ | N/A | 70% | 70% | 70% |
| | Net-to-Gross Adjustment | 0.0 | -0.2 | -5.3 | -5.4 |
| | Net Adjusted Demand | 0.0 | 0.4 | 12.3 | 12.7 |
| | Planned Demand (Net) | 74.5 | 74.5 | 74.5 | 223.5 |
| | Annual % Toward Planned Demand (Net) | 0% | 0.47% | 16.5% | 5.67% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 0.5 | 17.6 | 9.1 |
| | Avg. Demand per Participant (Net) | N/A | 0.4 | 12.3 | 6.3 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 0.5 | 0.0 | 0.5 |
| | Realization Rate | - | 100% | N/A | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.5 | 0.0 | 0.5 |
| | Net-To-Gross Ratio ¹⁶⁷ | - | 70% | N/A | 70% |
| | Net-to-Gross Adjustment | - | -0.2 | 0.0 | -0.2 |
| | Net Adjusted Demand | - | 0.4 | 0.0 | 0.4 |
| | Planned Demand (Net) | - | 98.9 | 98.9 | 197.9 |
| | Annual % Toward Planned Demand (Net) | - | 0.36% | 0% | 0.18% |
| | Avg. Peak Demand per Participant (Gross) | - | 0.5 | 0.0 | 0.3 |
| | Avg. Demand per Participant (Net) | - | 0.4 | 0.0 | 0.2 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$3,179 | \$2,502 | \$2,502 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$1 | \$0.04 | \$0.04 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$6,347 | \$276 | \$276 |
| | Cml Annual \$EM&V per Total Costs (\$) | 14.9% | 18.0% | 16.8% | 16.8% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$759 | \$6,587 | \$6,587 |

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.



6.3.3.3 Additional Virginia program data

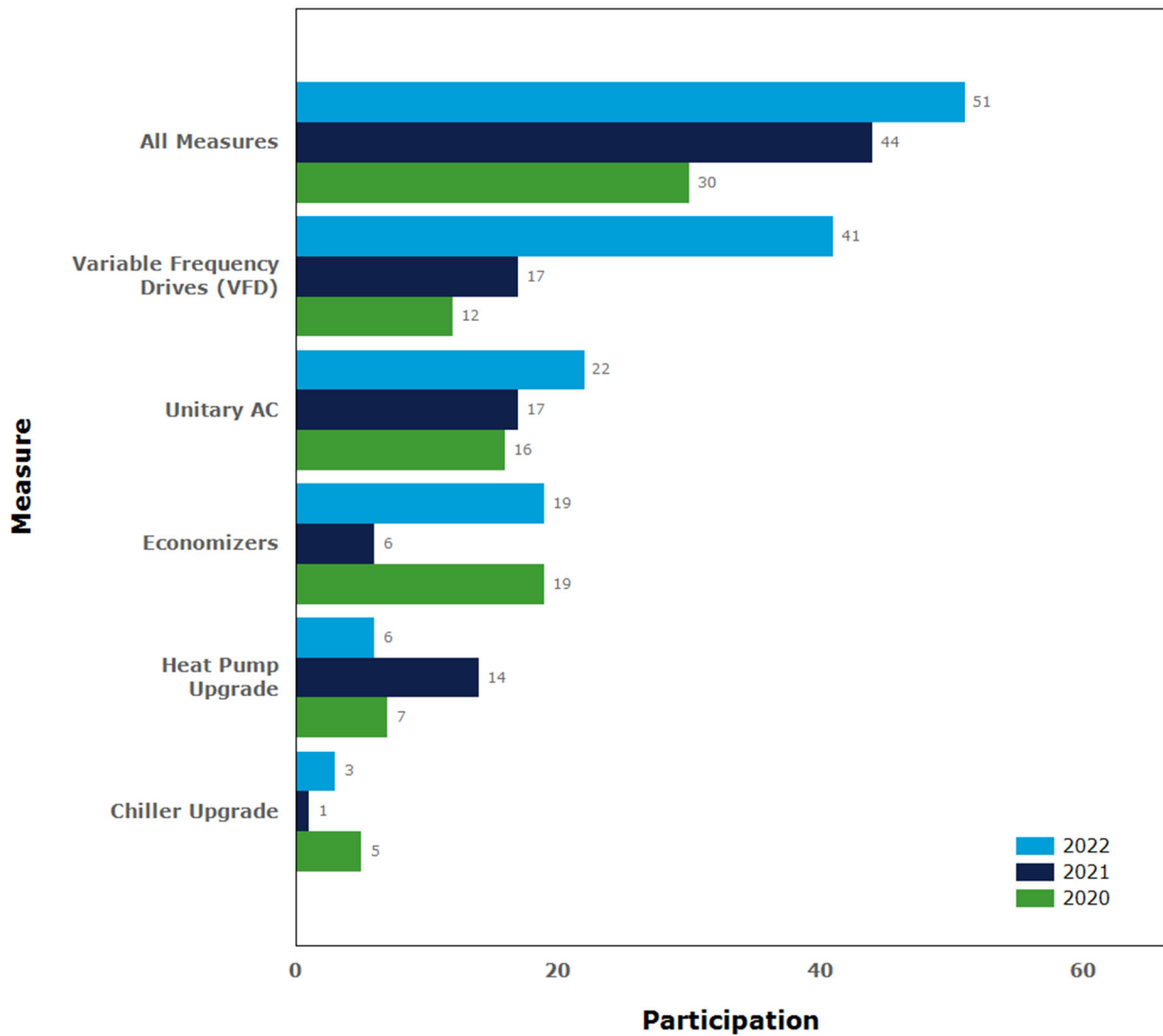
Figure 6-17 through Figure 6-20 show the program's participation and gross annualized energy savings (for participants who installed the measure in the respective year) by measure type and program year.

Note that participation in these charts is the count of new unique customers in the "all measures" presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once—the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted. Other detailed program participation and savings at the measure level are provided in Appendix O.20.

Figure 6-17 shows that variable frequency drives (VFDs) were the mostly commonly implemented measure in 2022, installed by 80% of participants. Unitary AC systems (Air Conditioners) also experienced an increase in participation from 39% in 2021 to 43% in 2022. Overall, the program has increased participation from 2021 to 2022 by 16%.



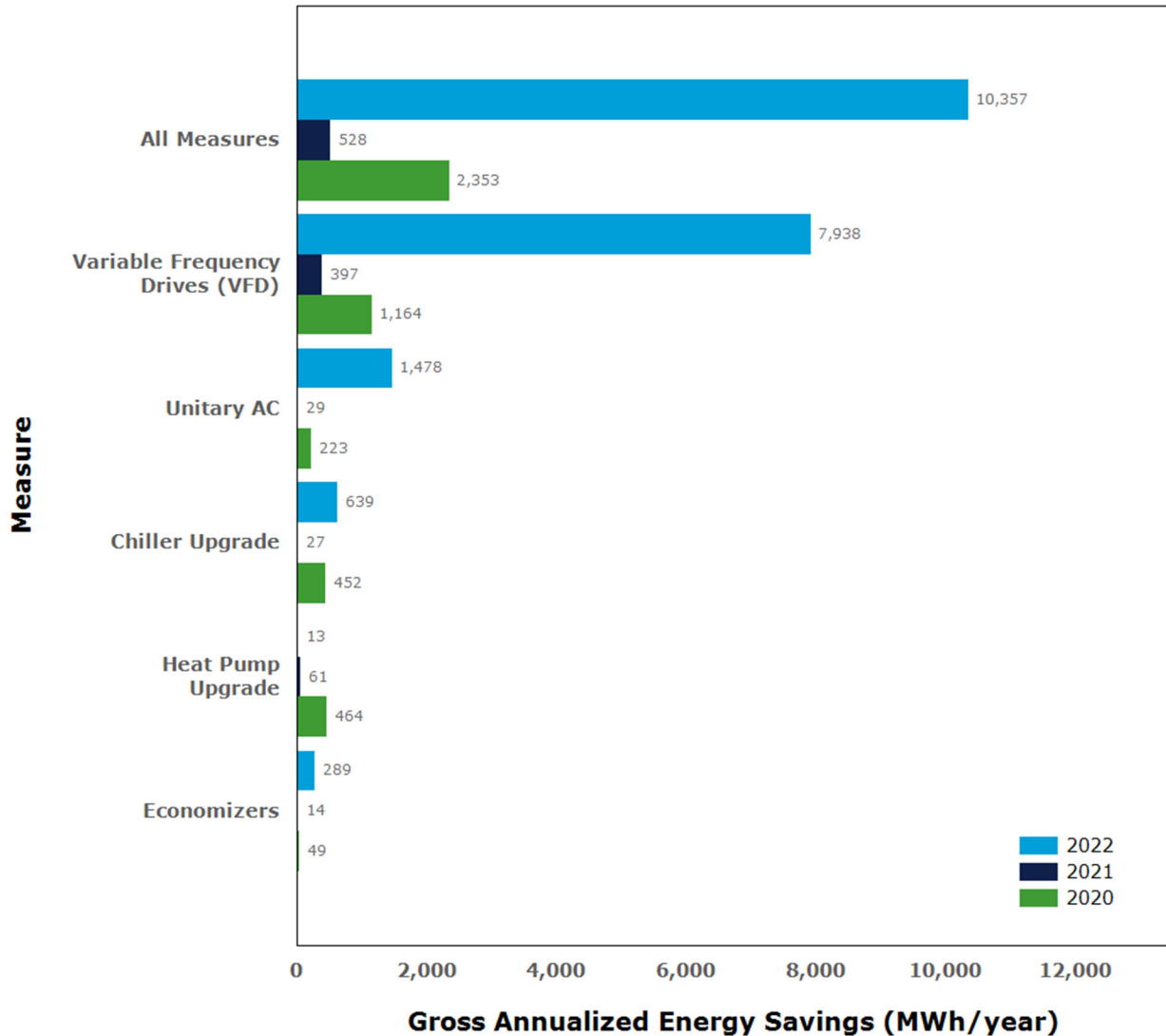
Figure 6-17. Virginia Non-Residential Heating and Cooling Efficiency Program participation by measure and year



VFDs continued to deliver the greatest proportion of gross annualized energy savings, accounting for nearly 77% of savings as shown in Figure 6-18. Gross savings for all measures increased greatly, driven by the large increase in VFD savings due to both greater participation and larger equipment sizes than in previous years. Most of the HVAC measures (chiller upgrades, unitary AC, and economizers) also experienced increased savings due to one or more of the following factors: increases in participation, equipment capacities, and/or greater efficiency improvements.

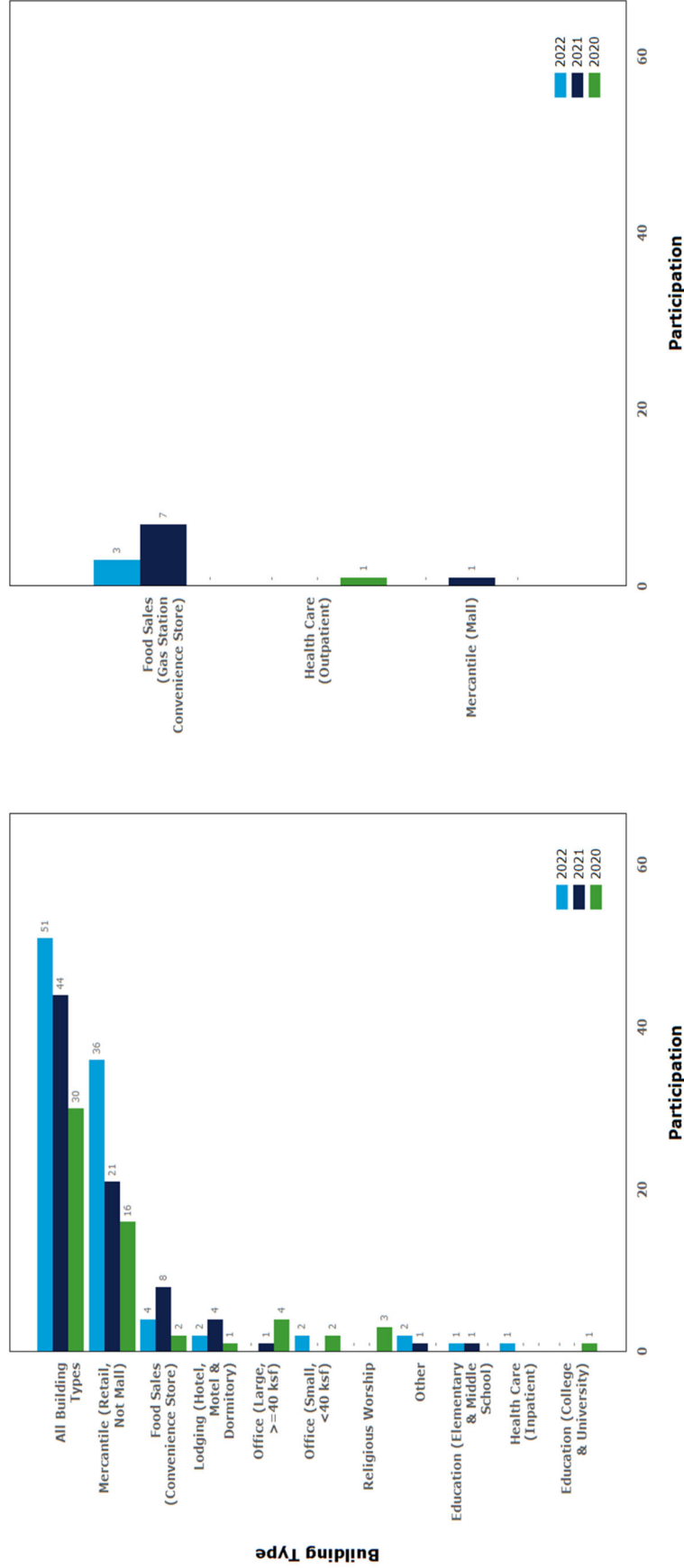


Figure 6-18. Virginia Non-Residential Heating and Cooling Efficiency Program gross annualized energy savings (MWh/year) by measure and year





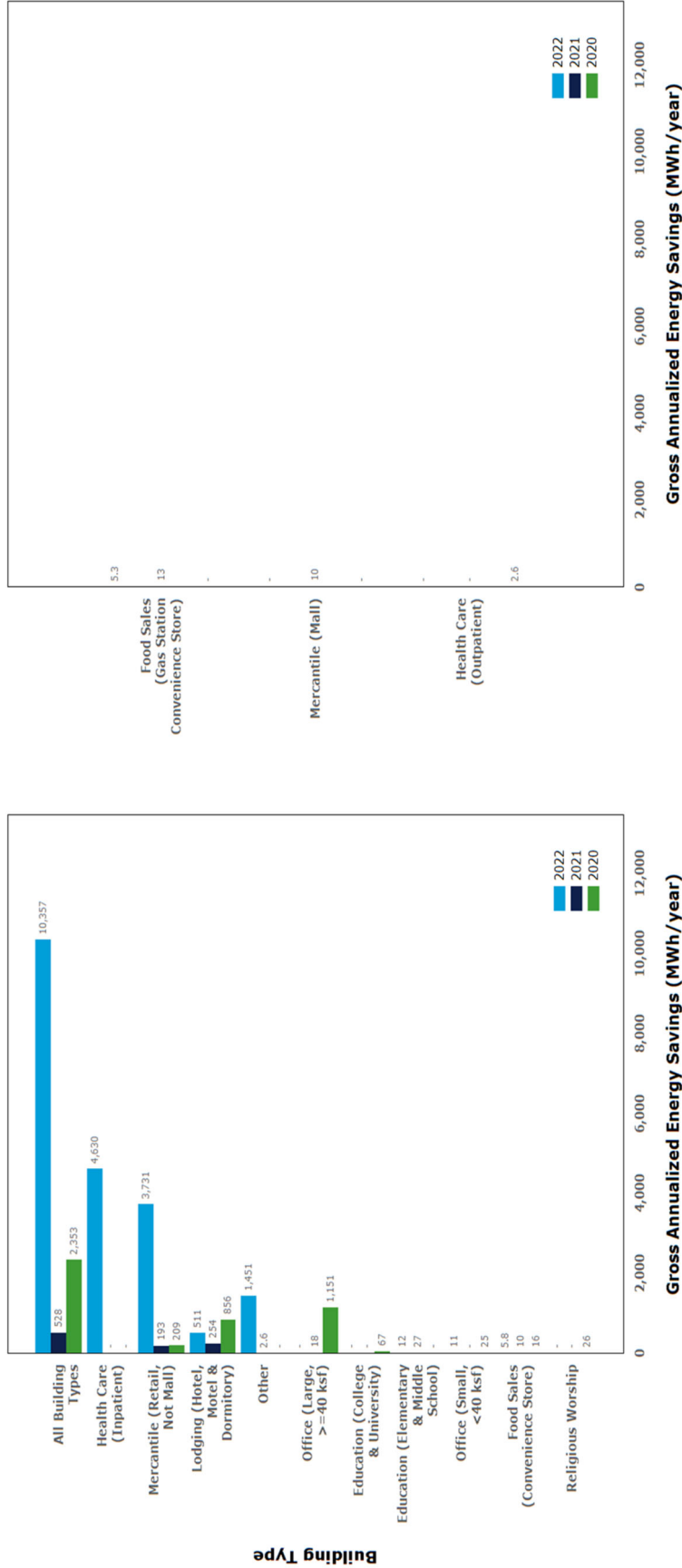
“Mercantile (retail, not mall)” accounted for the majority of participants (71%) in 2022, as shown in Figure 6-19.
Figure 6-19. Virginia Non-Residential Heating and Cooling Efficiency (DSM Phase VII) Program participation by building type and year





“Health Care (Inpatient)” accounted for the largest share (45%) of gross annualized savings in 2022, as shown in Figure 6-20, due to large VFD projects at one facility. The remaining savings occur primarily in three building types, “Mercantile (retail, not mall),” “Other,” and “Lodging (hotel, motel, & dormitory).”

Figure 6-20. Virginia Non-Residential Heating and Cooling Efficiency gross annualized energy savings (MWh/year per participant) by building type and year





6.3.3.4 Additional North Carolina program data

Figure 6-21 and Figure 6-22 show the program’s participation, and gross annualized energy savings, by measure type and program year.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key North Carolina program data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted. Other detailed program participation and savings at the measure level are provided in Appendix P.12.

Economizers, VFDs, and Unitary AC were the measures implemented by the only participant in 2022, as shown in Figure 6-21.

Figure 6-21. North Carolina Non-Residential Heating and Cooling Efficiency participation by measure and year

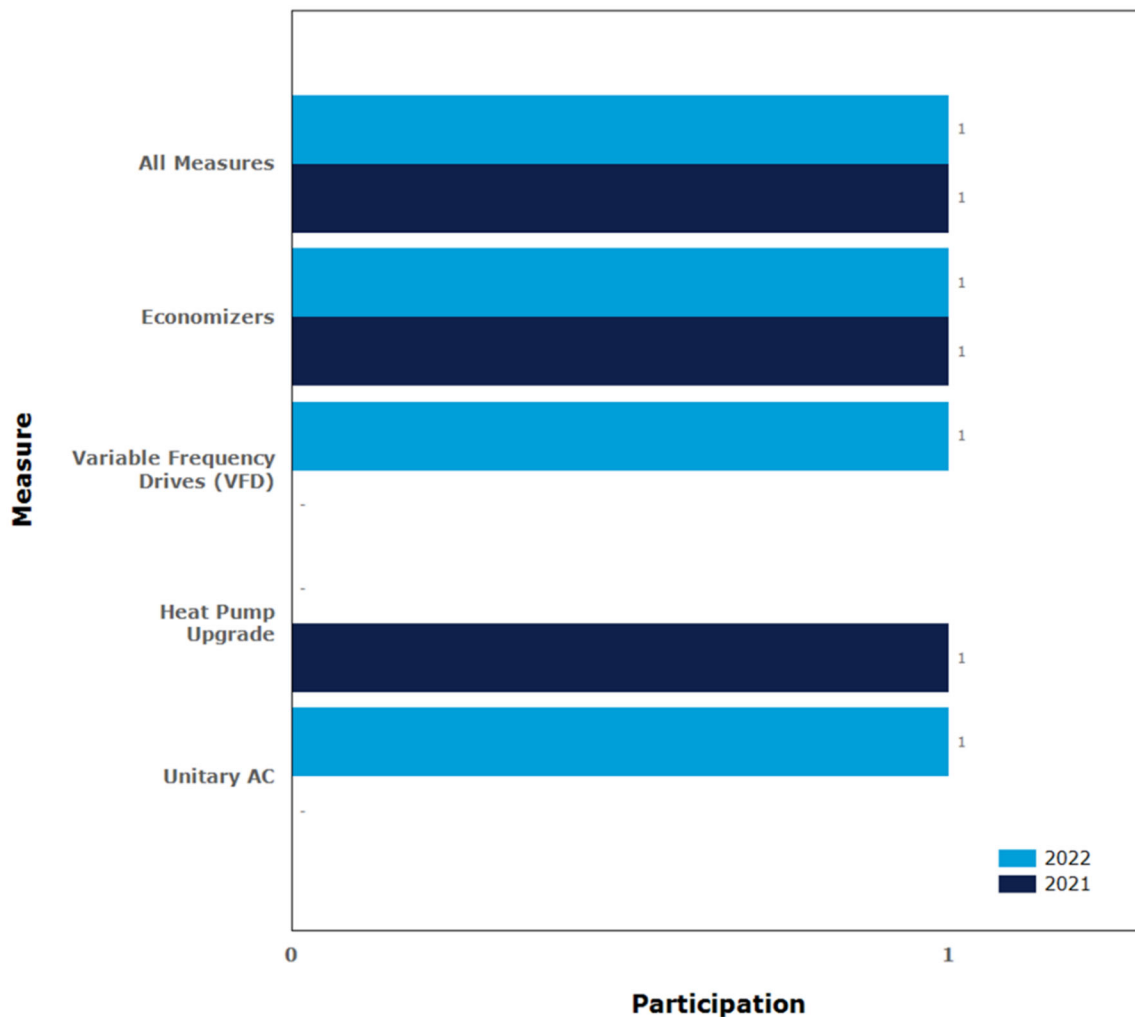
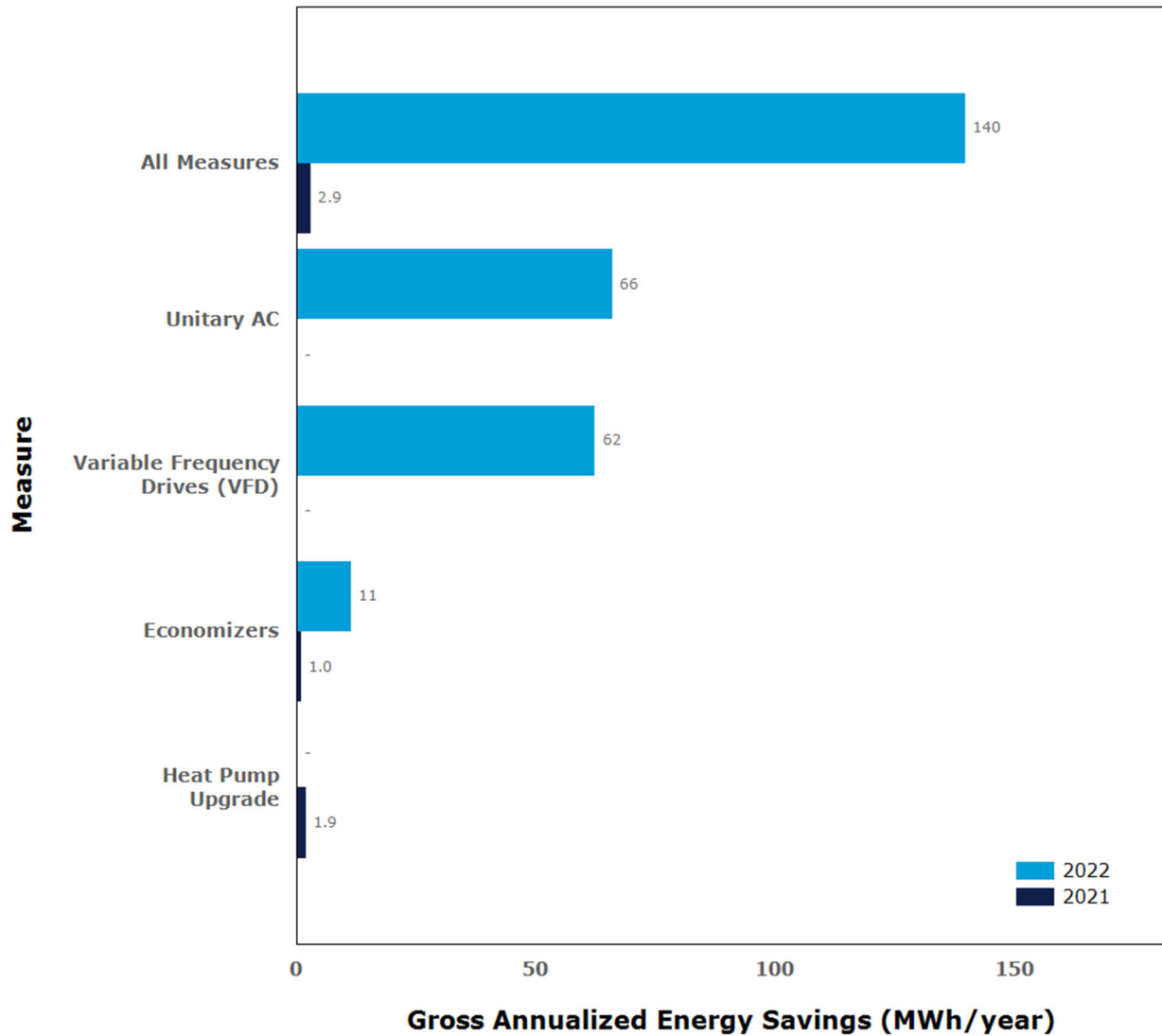




Figure 6-22 shows that “Unitary AC,” and “VFD” together accounted for the majority of gross annualized energy savings, accounting for approximately 91% of savings.

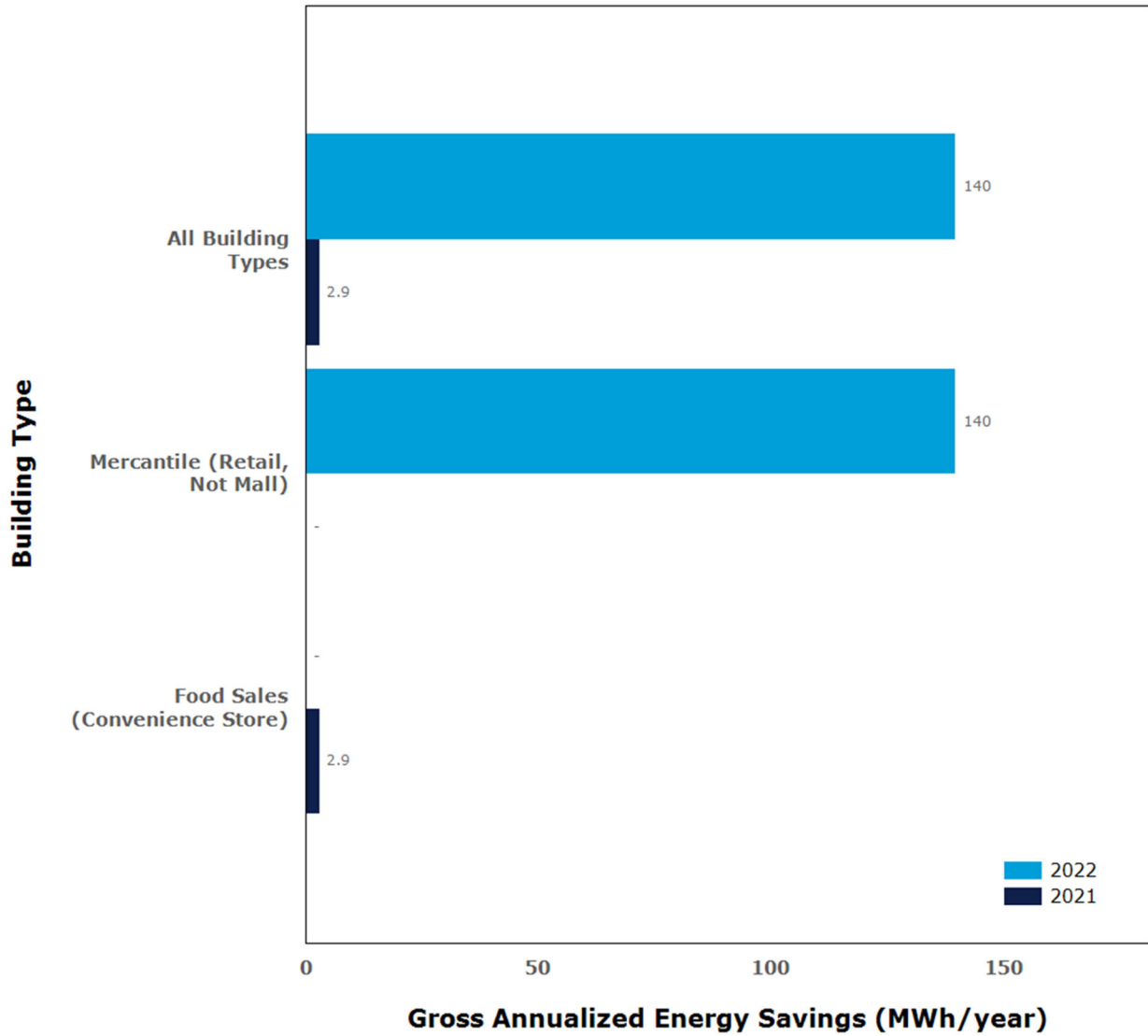
Figure 6-22. North Carolina Non-Residential Heating and Cooling Efficiency (DSM Phase VII) gross annualized energy savings (MWh/year) by measure and year



The two participants in the program thus far in North Carolina have been in “food sales (convenience store)” in 2021, and “mercantile (retail, not mall)” in 2022. The distribution of their savings are shown in Figure 6-23.



Figure 6-23. North Carolina Non-Residential Heating and Cooling Efficiency (DSM Phase VII) gross annualized energy savings per participant (MWh/Year per participant) by building type and year





6.4 Non-Residential Lighting Systems & Controls Program – Virginia and North Carolina

6.4.1 Program description

The Non-Residential Lighting Systems & Controls Program offers non-residential customers rebate incentives to retrofit their existing lighting system with a more energy-efficient and cost-effective lighting system. The program provides rebates for the following types of measures:

- T8s with electronic ballasts
- High-performance T8s
- T5s with electronic ballasts
- LEDs
- Occupancy sensors

This program is implemented through a contractor network. However, customers may also self-install equipment if they submit an initial assessment to Dominion Energy and receive approval prior to installation.



Other reasons that require customers to submit an initial assessment to Dominion Energy include:

- Previous participation in the program
- Projects with LED measures
- Projects with an estimated rebate amount of \$10,000 or more¹⁶⁸

Upon approval, those customers have 120 days to complete their projects. All Dominion Energy non-residential customers are eligible to participate except those who are exempt by statute, special contract, or have opted out. Customers are not considered participants until a completed rebate 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.

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, 2019.¹⁶⁹ The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 573). The program officially launched on January 1, 2020.¹⁷⁰ Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. A major change in program delivery happened in Fall 2021 when the program was opened to customers with over 500 kW of demand, in the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021.

DNV performed an Impact Evaluation, Baseline Study, and Persistence Study for the Non-Residential lighting programs this reporting year. The study yielded an updated gross realization rate (RR) for energy, summer demand, and winter demand,

¹⁶⁸ Per Non-Residential Lighting Systems and Controls Program Rebate Application form, <https://domsavings.com/wp-content/uploads/2023/04/DSMX-DEV-NR-Lighting-Rebate-Final-04262023.pdf>. Accessed May 2, 2023.

¹⁶⁹ Virginia Non-Residential Lighting Systems and Controls Program Terms and Conditions, <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/save-energy/va-non-res-lighting-systems-controls-terms-conditions.pdf> Accessed March 25, 2022.

¹⁷⁰ North Carolina Non-Residential Lighting Systems and Controls Program Terms and Conditions, <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/north-carolina---electric/save-energy/nc-non-res-lighting-systems-controls-terms-conditions.pdf> Accessed March 25, 2022.



an updated NTG ratio, effective useful life (EUL), and baseline lighting power density (LPD) for new construction projects. The results of the study are featured in Table 6-11 below and the full report can be found in Appendix K.

Table 6-11. Non-Residential Lighting Impact Evaluation, Baseline Study, and Persistence Study results

| Updated study factors | Value |
|-------------------------------|------------|
| Gross RR – Energy (kWh/year) | 123.7% |
| Gross RR – Summer Demand (kW) | 101.5% |
| Gross RR – Winter Demand (kW) | 99.3% |
| NTG Ratio | 45.3% |
| EUL | 10.1 years |
| Baseline LPD | +24% |

6.4.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 6-12 outlines Dominion Energy’s initial program planning assumptions that were used to design the program.

Table 6-12. Non-Residential Lighting Systems and Controls Program (Phase VII) planning assumptions system-wide

| Assumption | 2019 – 2020 Description | 2021 – 2024 Description |
|--|---------------------------|-------------------------|
| Target Market | Non-residential customers | |
| NTG Ratio | 70% | |
| Measure Life (years) | 10.6 | |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 30,006 | 27,656 |
| Gross Average Summer Coincident Peak Demand Reduction (kW) per Participant | 8.35 | 5.96 |
| Gross Average Winter Coincident Peak Demand Reduction (kW) per Participant | 7.75 | 5.51 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 21,004 | 19,359 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 7.51 | 4.17 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 6.97 | 3.86 |
| Average Rebate (US\$) per Participant | \$2,586 per participant | |

6.4.3 Assessment of program progress toward plan

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

6.4.3.1 Key Virginia program data

Table 6-13 provides performance indicator data annually and cumulatively from program inception through 2022, in Virginia. Shaded cells are considered extraordinarily sensitive information. Appendix O.21 shows detailed incremental program indicators by year and month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.



Table 6-13. Virginia Non-Residential Lighting Systems and Controls Program performance indicators (2019–2022)

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|---------------------------------------|--------------|-------------|-------------|-------------|---------------------------|
| Operations and Management Costs (\$) | | | | | | |
| | Indirect Other (Administrative) | \$20,021 | \$203,084 | \$165,869 | \$114,789 | \$503,763 |
| Total Costs (\$) | Total ¹⁷¹ | \$592,373 | \$3,989,872 | \$3,537,467 | \$2,749,190 | \$10,868,902 |
| | Planned | \$1,633,867 | \$2,905,369 | \$2,192,482 | \$2,221,698 | \$8,953,416 |
| | Variance | -\$1,041,495 | \$1,084,503 | \$1,344,986 | \$527,493 | \$1,915,487 |
| | Annual % of Planned | 36% | 137% | 161% | 124% | 121% |
| Participants | Total (Gross) | 0 | 406 | 388 | 193 | 987 |
| | Planned (Gross) | 333 | 625 | 344 | 344 | 1,646 |
| | Variance | -333 | -219 | 44 | -151 | -659 |
| | Annual % of Planned (Gross) | 0% | 65% | 113% | 56% | 60% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 29,189,250 | 22,546,913 | 16,583,111 | 68,319,273 |
| | Realization Rate | N/A | 124% | 124% | 124% | 124% |
| | Realization Rate Adjustment | 0 | 7,005,420 | 5,411,259 | 3,979,947 | 16,396,626 |
| | Adjusted Gross Savings | 0 | 36,194,669 | 27,958,172 | 20,563,057 | 84,715,899 |
| | Net-To-Gross Ratio ¹⁷² | N/A | 45% | 45% | 45% | 45% |
| | Net-to-Gross Adjustment | 0 | -19,907,068 | -15,376,995 | -11,309,682 | -46,593,744 |
| | Net Adjusted Savings | 0 | 16,287,601 | 12,581,177 | 9,253,376 | 38,122,155 |
| | Planned Savings (Net) | 6,994,405 | 13,127,636 | 6,659,477 | 6,659,477 | 33,440,994 |
| | Annual % Toward Planned Savings (Net) | 0% | 124.1% | 188.9% | 139.0% | 114.0% |
| | Avg. Savings per Participant (Gross) | N/A | 71,895 | 58,111 | 85,923 | 69,219 |
| | Avg. Savings per Participant (Net) | N/A | 40,117 | 32,426 | 47,945 | 38,624 |

¹⁷¹ 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.

¹⁷² 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), the implementation vendor has calculated that 96% 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|---|---------|----------|----------|----------|---------------------------|
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 4,019.8 | 3,194.9 | 2,581.9 | 9,796.6 |
| | Realization Rate | N/A | 102% | 102% | 102% | 102% |
| | Realization Rate Adjustment | 0.0 | 80.4 | 63.9 | 51.6 | 195.9 |
| | Adjusted Gross Demand | 0.0 | 4,100.2 | 3,258.8 | 2,633.6 | 9,992.6 |
| | Net-To-Gross Ratio ¹⁷² | N/A | 45% | 45% | 45% | 45% |
| | Net-to-Gross Adjustment | 0.0 | -2,210.9 | -1,757.2 | -1,420.1 | -5,388.1 |
| | Net Adjusted Demand | 0.0 | 1,845.1 | 1,466.5 | 1,185.1 | 4,496.7 |
| | Planned Demand (Net) | 1,945.3 | 3,651.1 | 1,436.4 | 1,436.4 | 8,469.1 |
| | Annual % Toward Planned Demand (Net) | 0% | 50.5% | 102.1% | 82.5% | 53.1% |
| | Avg. Peak Demand per Participant (Gross) | N/A | 9.9 | 8.2 | 13.4 | 9.9 |
| | Avg. Demand per Participant (Net) | N/A | 4.5 | 3.8 | 6.1 | 4.6 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | - | 2,487.7 | 1,772.8 | 4,260.5 |
| | Realization Rate | - | - | 99% | 99% | 99% |
| | Realization Rate Adjustment | - | - | -24.9 | -17.7 | -42.6 |
| | Adjusted Gross Demand | - | - | 2,462.8 | 1,755.0 | 4,217.8 |
| | Net-To-Gross Ratio ¹⁷² | - | - | 45% | 45% | 45% |
| | Net-to-Gross Adjustment | - | - | -1,368.2 | -975.0 | -2,343.2 |
| | Net Adjusted Demand | - | - | 1,108.3 | 789.8 | 1,898.0 |
| | Planned Demand (Net) | - | - | 1,326.7 | 1,326.7 | 2,653.5 |
| | Annual % Toward Planned Demand (Net) | - | - | 83.5% | 59.5% | 71.5% |
| | Avg. Peak Demand per Participant (Gross) | - | - | 6.4 | 9.2 | 7.3 |
| | Avg. Demand per Participant (Net) | - | - | 2.9 | 4.1 | 3.3 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$550 | \$490 | \$510 | \$510 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0.01 | \$0.01 | \$0.01 | \$0.01 |



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|----------|---|------|---------|---------|---------|---------------------------|
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$56 | \$54 | \$51 | \$51 |
| | Cml Annual \$EM&V per Total Costs (\$) | 8.4% | 3.2% | 3.3% | 4.4% | 4.4% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$6,717 | \$6,201 | \$6,499 | \$6,499 |

6.4.3.2 Key North Carolina program data

Table 6-14 provides performance indicator data annually and cumulatively from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Appendix P.13 provides detailed incremental program indicators by year and month, Appendix Q shows cumulative gross and net savings. Appendix P.13.3 shows program performance by measure. Appendix P.13.4 gives a comparison of program savings with usage by rate schedule.

Table 6-14. North Carolina Non-Residential Lighting Systems and Controls Program performance indicators (2020–2021)

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|------------------------------------|-----------|-----------|-----------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$7,657 | \$4,360 | \$8,727 | \$20,744 |
| Total Costs (\$) | Total ¹⁷³ | \$160,883 | \$92,989 | \$209,012 | \$462,884 |
| | Planned | \$184,522 | \$136,425 | \$141,758 | \$462,705 |
| | Variance | -\$23,639 | -\$43,436 | \$67,255 | \$179 |
| | Annual % of Planned | 87% | 68% | 147% | 100% |
| Participants | Total (Gross) | 9 | 5 | 12 | 26 |
| | Planned (Gross) | 40 | 22 | 22 | 84 |
| | Variance | -31 | -17 | -10 | -58 |
| | Annual % of Planned (Gross) | 23% | 23% | 55% | 31% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 111,813 | 189,982 | 1,478,591 | 1,780,386 |
| | Realization Rate | 124% | 124% | 124% | 124% |
| | Realization Rate Adjustment (100%) | 26,835 | 45,596 | 354,862 | 427,293 |
| | Adjusted Gross Savings | 138,648 | 235,578 | 1,833,452 | 2,207,678 |
| | Net-To-Gross Ratio ¹⁷⁴ | 45% | 45% | 45% | 45% |

¹⁷³ 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.

¹⁷⁴ 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), the implementation vendor has calculated that 96% 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 Methodologies, section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|---------|----------|------------|---------------------------|
| | Net-to-Gross Adjustment | -76,257 | -129,568 | -1,008,399 | -1,214,223 |
| | Net Adjusted Savings | 62,392 | 106,010 | 825,054 | 993,455 |
| | Planned Savings (Net) | 840,169 | 425,897 | 425,897 | 1,691,962 |
| | Annual % Toward Planned Savings (Net) | 7.43% | 24.9% | 193.7% | 58.7% |
| | Avg. Savings per Participant (Gross) | 12,424 | 37,996 | 123,216 | 68,476 |
| | Avg. Savings per Participant (Net) | 6,932 | 21,202 | 68,754 | 38,210 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 5.3 | 41.2 | 323.1 | 369.6 |
| | Realization Rate | 102% | 102% | 102% | 102% |
| | Realization Rate Adjustment | 0.1 | 0.8 | 6.5 | 7.4 |
| | Adjusted Gross Demand | 5.4 | 42.0 | 329.5 | 377.0 |
| | Net-To-Gross Ratio ¹⁷⁴ | 45% | 45% | 45% | 45% |
| | Net-to-Gross Adjustment | -2.9 | -22.7 | -177.7 | -203.3 |
| | Net Adjusted Demand | 2.5 | 18.9 | 148.3 | 169.7 |
| | Planned Demand (Net) | 233.7 | 91.9 | 91.9 | 417.4 |
| | Annual % Toward Planned Demand (Net) | 1.05% | 20.6% | 161.4% | 40.6% |
| | Avg. Peak Demand per Participant (Gross) | 0.6 | 8.2 | 26.9 | 14.2 |
| | Avg. Demand per Participant (Net) | 0.3 | 3.8 | 12.4 | 6.5 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 17.3 | 107.8 | 125.2 |
| | Realization Rate | - | 99% | 99% | 99% |
| | Realization Rate Adjustment | - | -0.2 | -1.1 | -1.3 |
| | Adjusted Gross Demand | - | 17.2 | 106.7 | 123.9 |
| | Net-To-Gross Ratio ¹⁷⁴ | - | 45% | 45% | 45% |
| | Net-to-Gross Adjustment | - | -9.5 | -59.3 | -68.8 |
| | Net Adjusted Demand | - | 7.7 | 48.0 | 55.8 |
| | Planned Demand (Net) | - | 84.8 | 84.8 | 169.7 |
| | Annual % Toward Planned Demand (Net) | - | 9.1% | 56.6% | 32.9% |
| | Avg. Peak Demand per Participant (Gross) | - | 3.5 | 9.0 | 7.4 |
| | Avg. Demand per Participant (Net) | - | 1.5 | 4.0 | 3.3 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$851 | \$858 | \$798 | \$798 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.07 | \$0.04 | \$0.01 | \$0.01 |
| | Cml Annual \$Admin. per kW (Gross) | \$1,434 | \$258 | \$56 | \$56 |



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------|---|----------|---------|---------|---------------------------|
| | Cml Annual \$EM&V per Total Costs (\$) | 3.3% | 5.1% | 5.6% | 5.6% |
| | Cml Annual \$Rebate per Participant (Gross) | \$10,189 | \$8,063 | \$9,200 | \$9,200 |

6.4.3.3 Additional Virginia program data

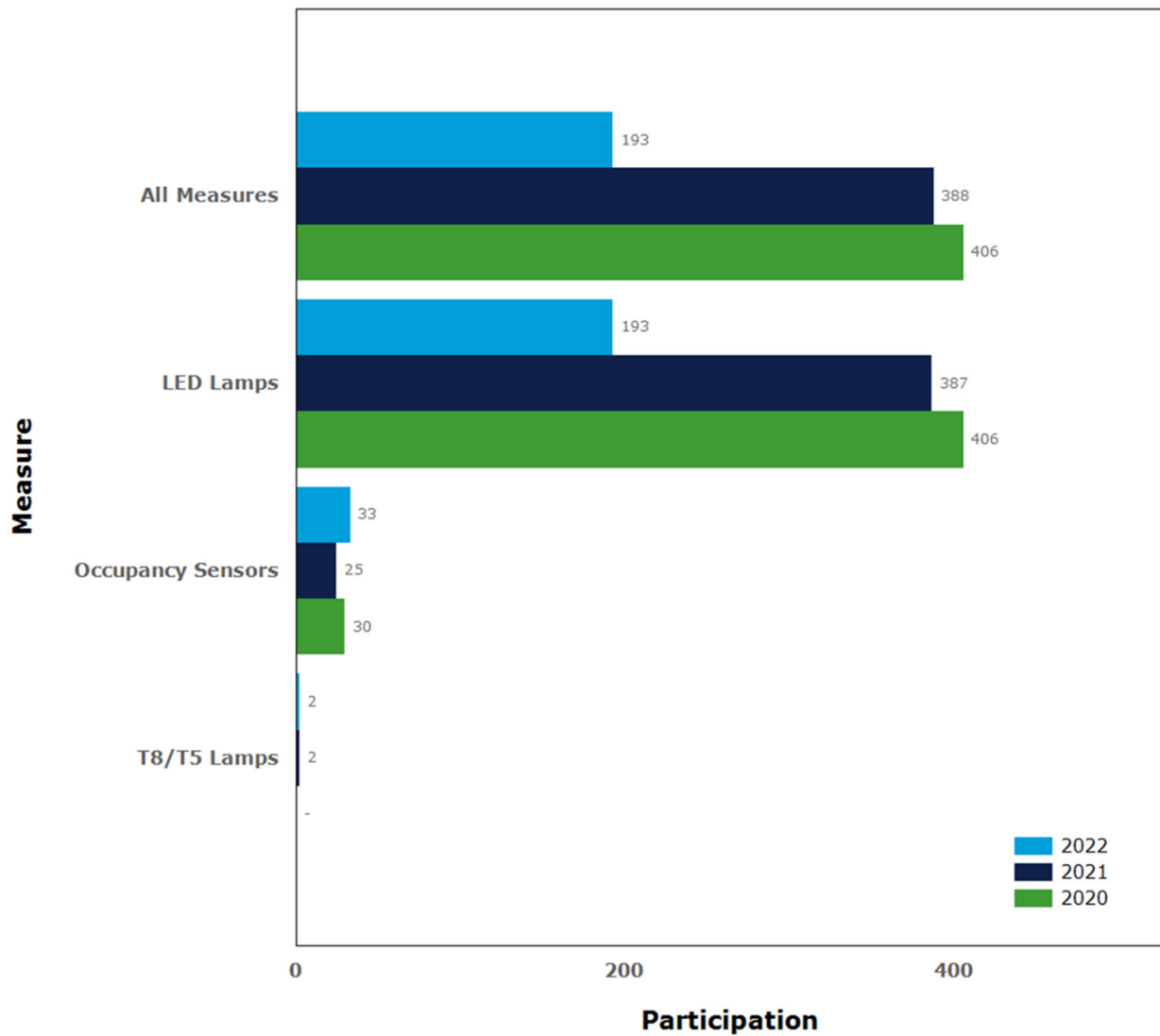
Figure 6-24 and Figure 6-25 show the program’s participation and gross annualized energy savings, respectively, by measure type and year in Virginia.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted. Other detailed program participation and savings at the measure level are provided in Appendix O.21.



Figure 6-24 shows which measures were adopted by participants, by year. In 2022, the most frequently installed measure was LED lamps, installed by 100% of participants. Occupancy sensors were the second most frequently installed measure, installed by 17% of program participants -- up from 6% in 2021.

Figure 6-24. Virginia Non-Residential Lighting Systems & Controls Program participation by measure and year





Due to the frequency of LED installations, LEDs accounted for the large majority of gross annualized energy savings (98%) in 2022 (Figure 6-25).

Figure 6-25. Virginia Non-Residential Lighting Systems & Controls Program gross annualized energy savings by measure and year (MWh/year)

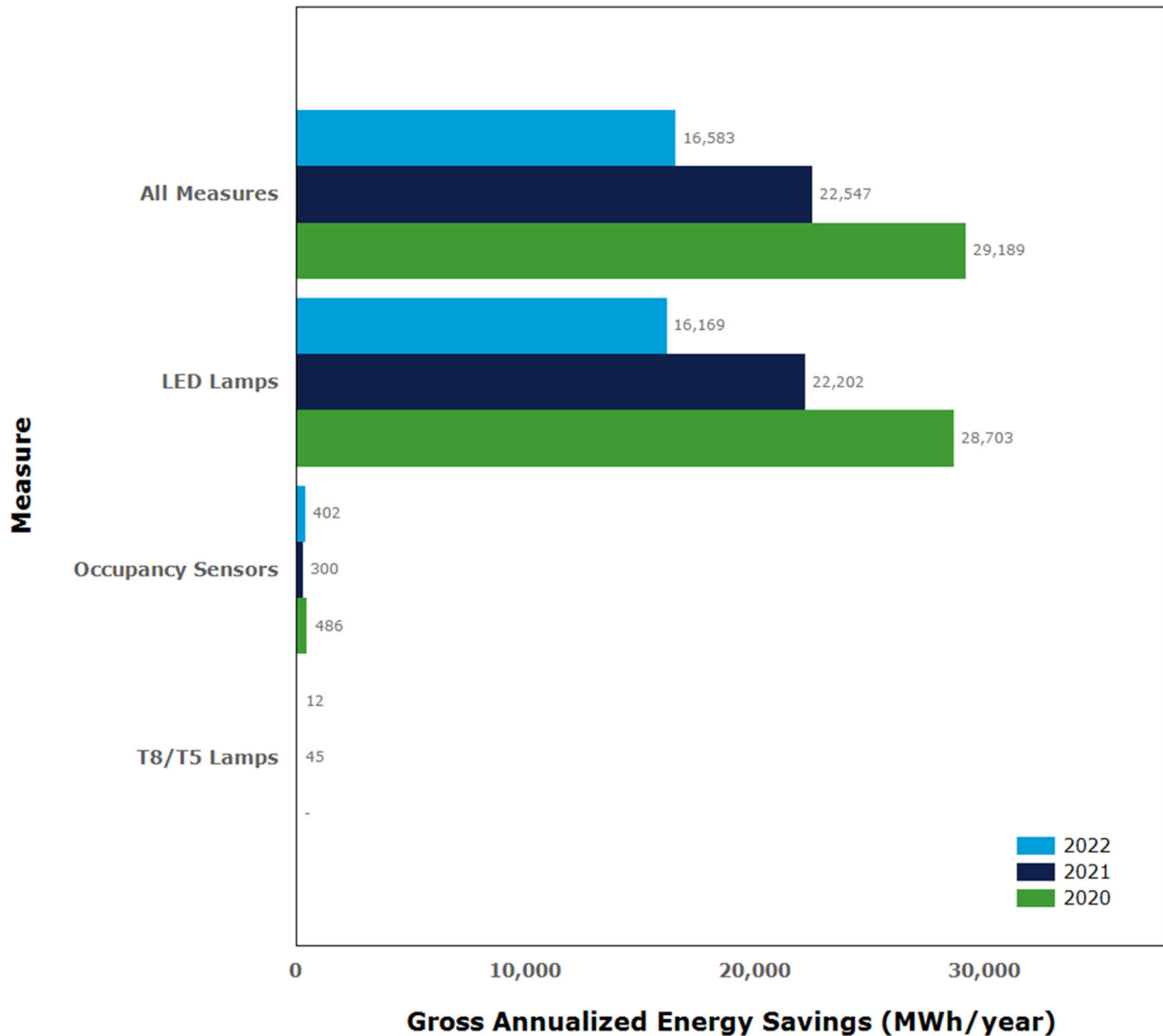


Figure 6-26 shows the net energy savings after applying the updated realization rate and NTG ratio from the Impact Evaluation, Baseline Study, and Persistence Study that DNV performed.



Figure 6-26. Virginia Non-Residential Lighting Systems & Controls Program net annualized energy savings by measure and year (MWh/year)

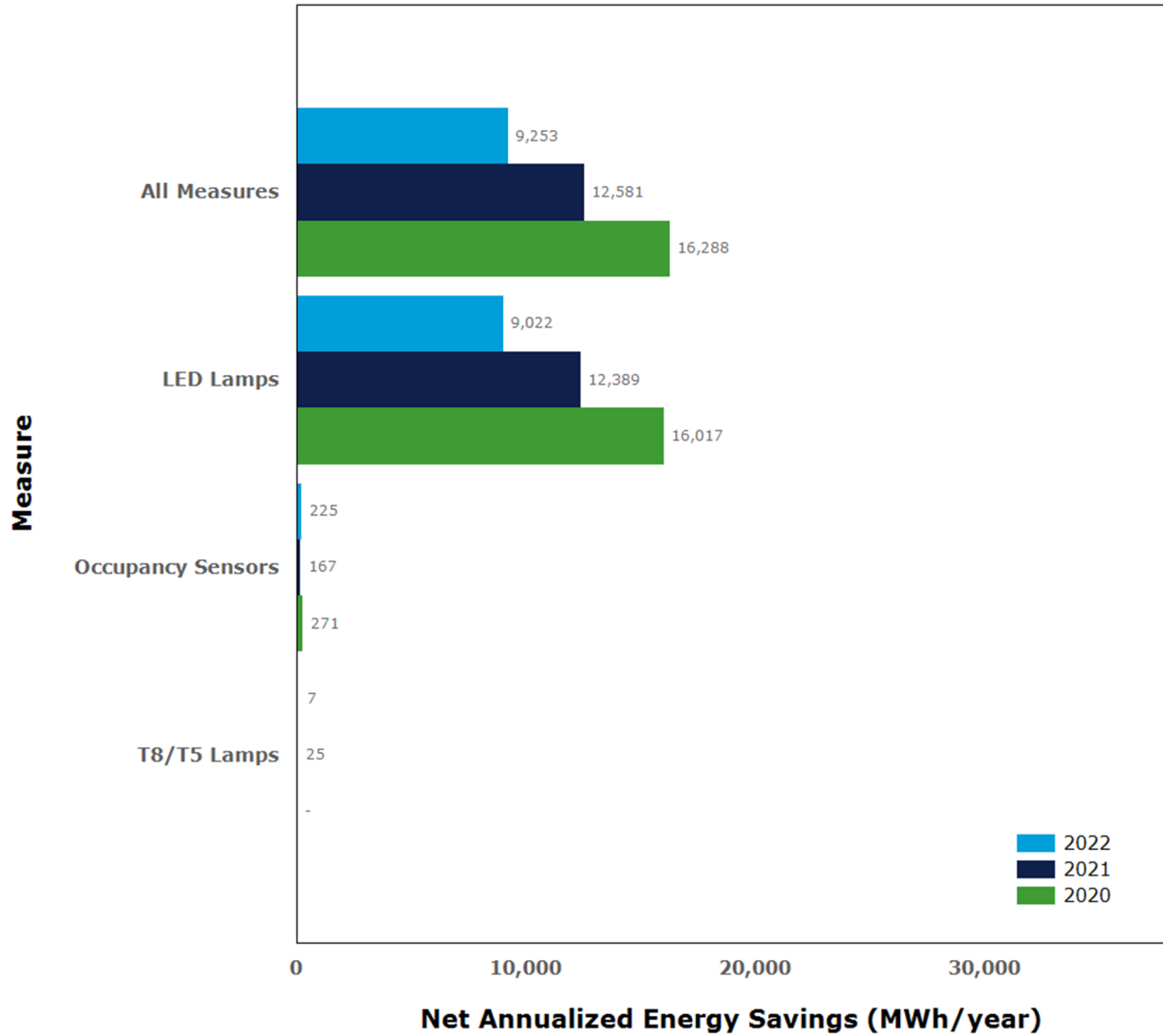
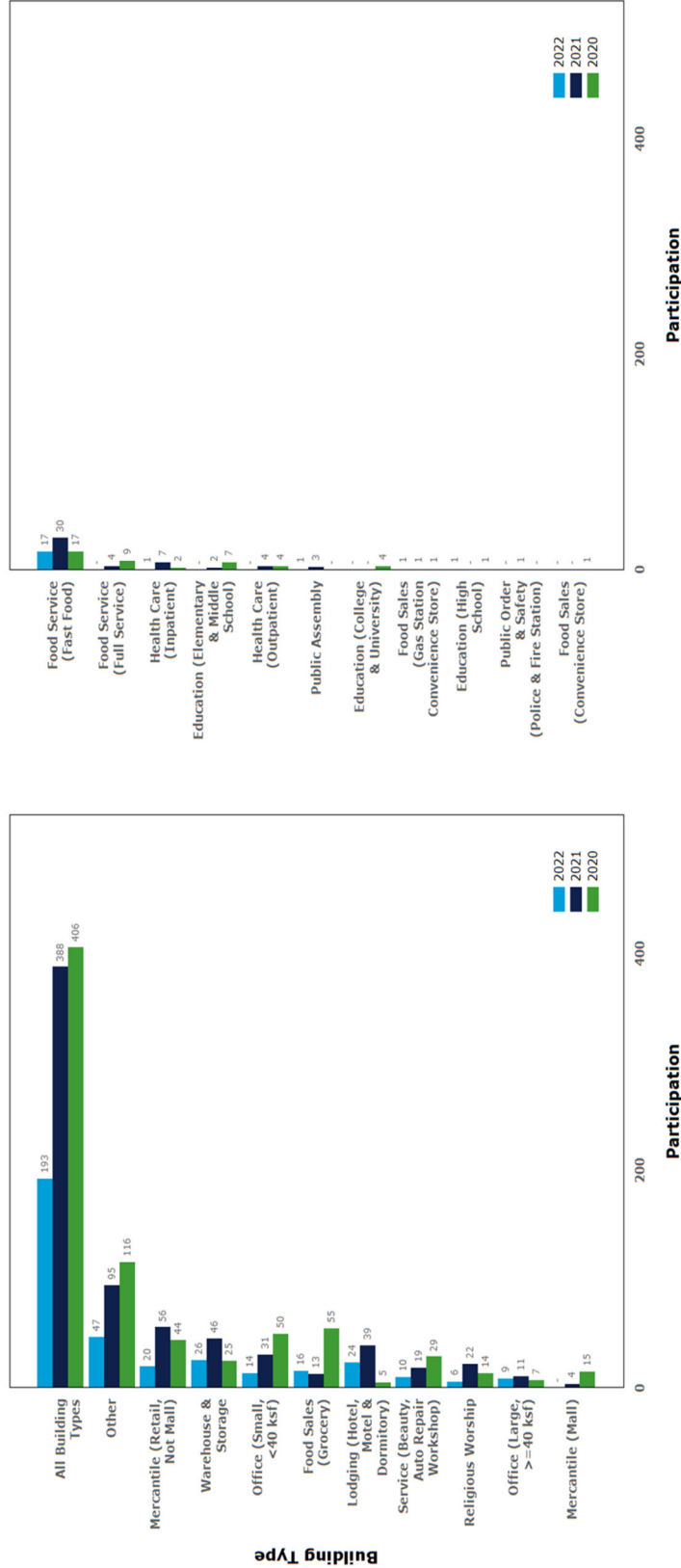




Figure 6-27 and Figure 6-28 show the program's participation and gross annualized energy savings, respectively, by building type and year. Continuing a trend from 2020 and 2021, "other" building types had the most program participants in 2022 (Figure 6-27), followed by "warehouse & storage" buildings.

Figure 6-27. Virginia Non-Residential Lighting Systems & Controls Program participation by building type and year



In addition to being the most common building type for program participants, “other” building types generated the most gross annualized savings of any building type in 2022 (Figure 6-28).

Figure 6-28. Virginia Non-Residential Lighting Systems & Controls Program gross annualized energy savings by building type and year (MWh/year)

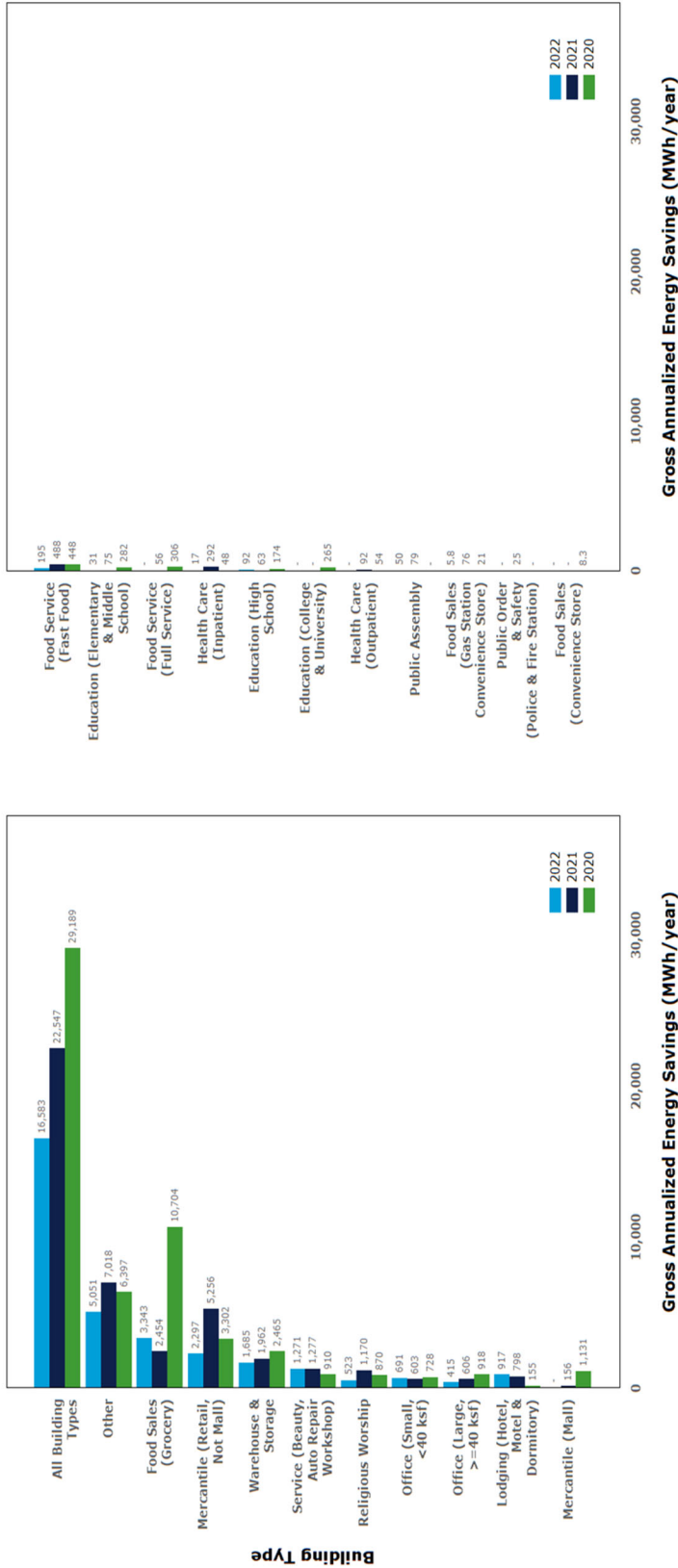
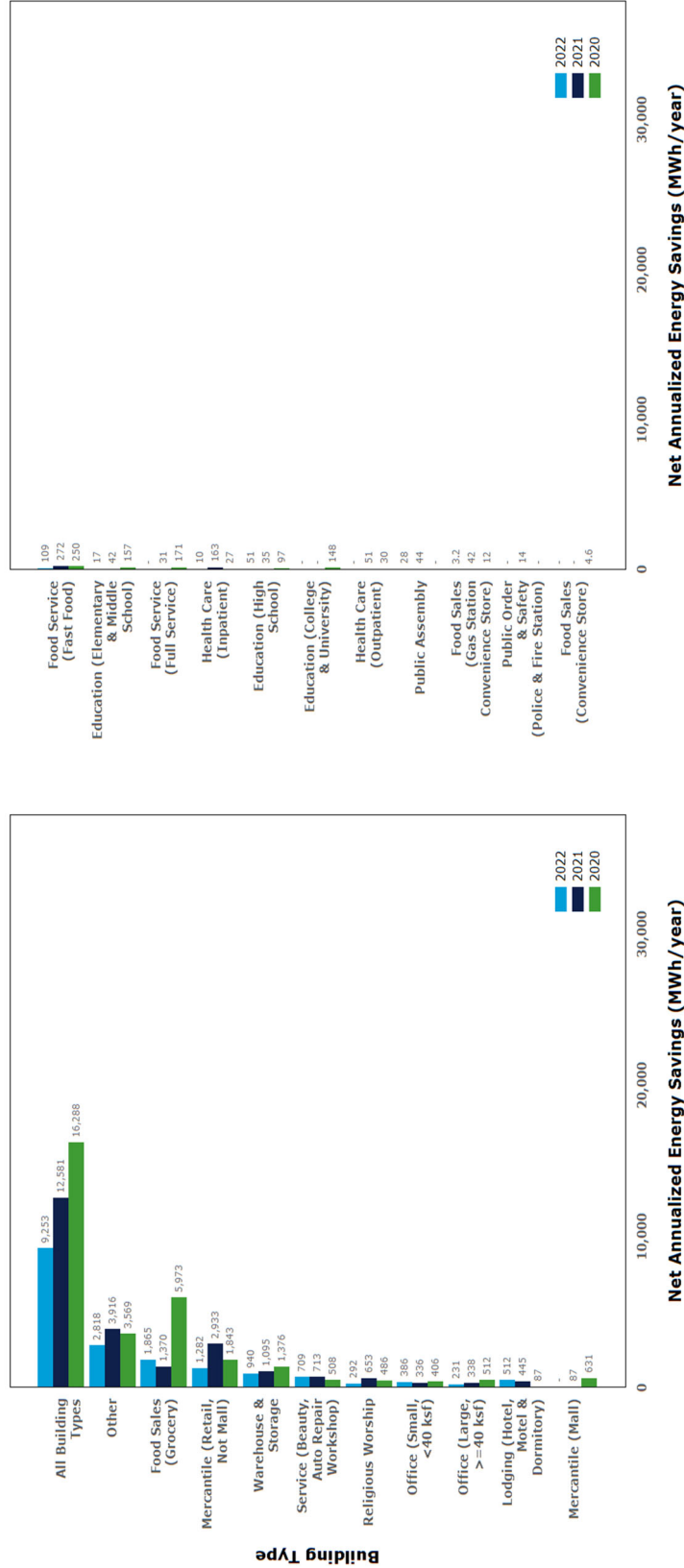


Figure 6-29 shows the net energy savings after applying the updated realization rate and NTG ratio from the Impact Evaluation, Baseline Study, and Persistence Study that DNV performed.



Figure 6-29. Virginia Non-Residential Lighting Systems & Controls Program net annualized energy savings by building type and year (MWh/year)





6.4.3.4 Additional North Carolina program data

Figure 6-30 and Figure 6-31 show the program's participation and gross annualized energy savings, respectively, by measure type and year.

Note that participation in these charts is the count of new unique customers in the "all measures" presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia Program Data and Key North Carolina Program Data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted. Other detailed program participation and savings at the measure level are provided in Appendix P.13.

In 2022, like in 2020 and 2021, LED lamps were installed by all participants, as shown in Figure 6-30. Two participants also installed occupancy sensors. No other measures were installed in 2022.



Figure 6-30. North Carolina Non-Residential Lighting Systems and Controls Program participation by measure and year

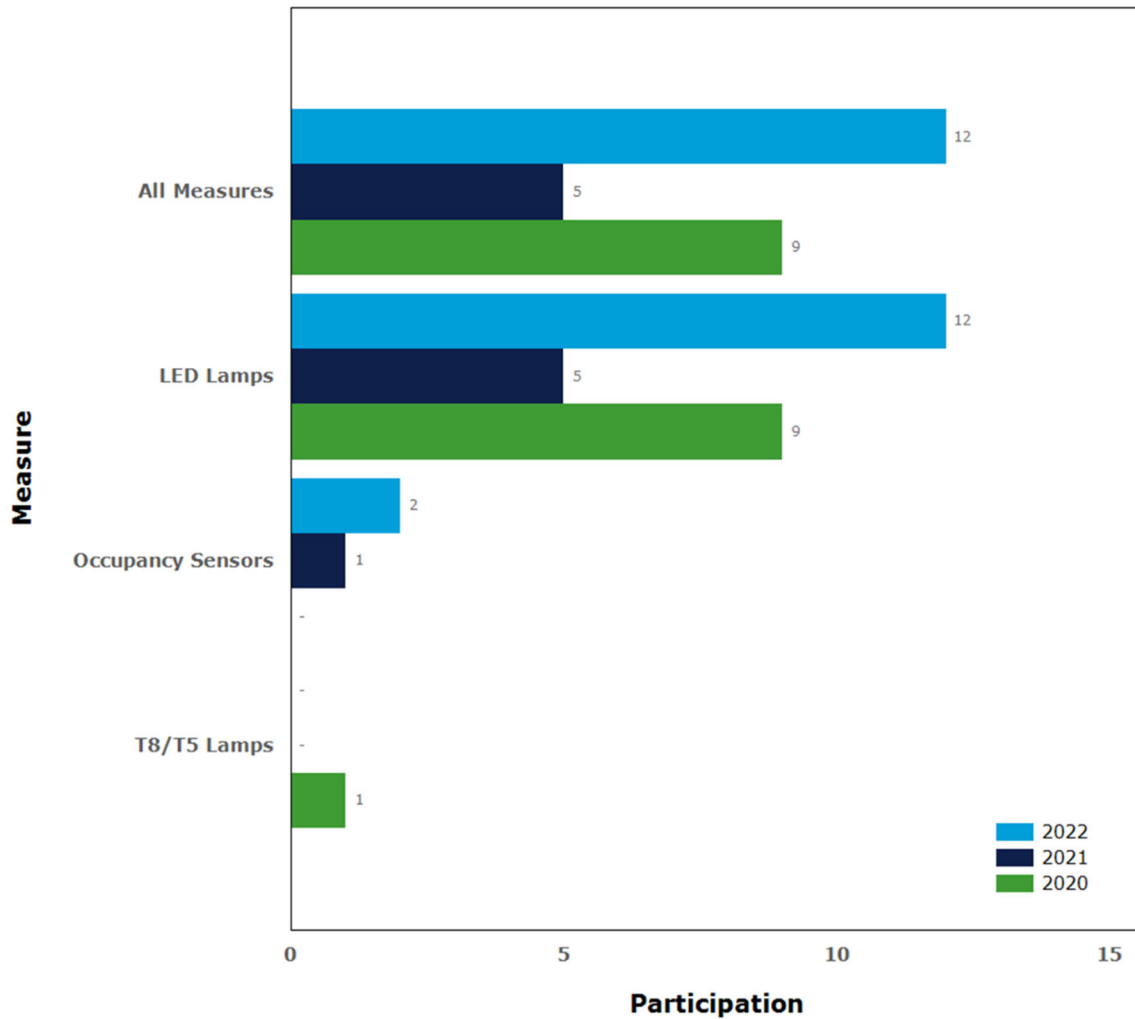


Figure 6-31 shows that 94% of gross annualized energy savings achieved in 2022 occurred from the installation of LED lamps.



Figure 6-31. North Carolina Non-Residential Lighting Systems & Controls Program gross annualized energy savings (MWh/year) by measure and year

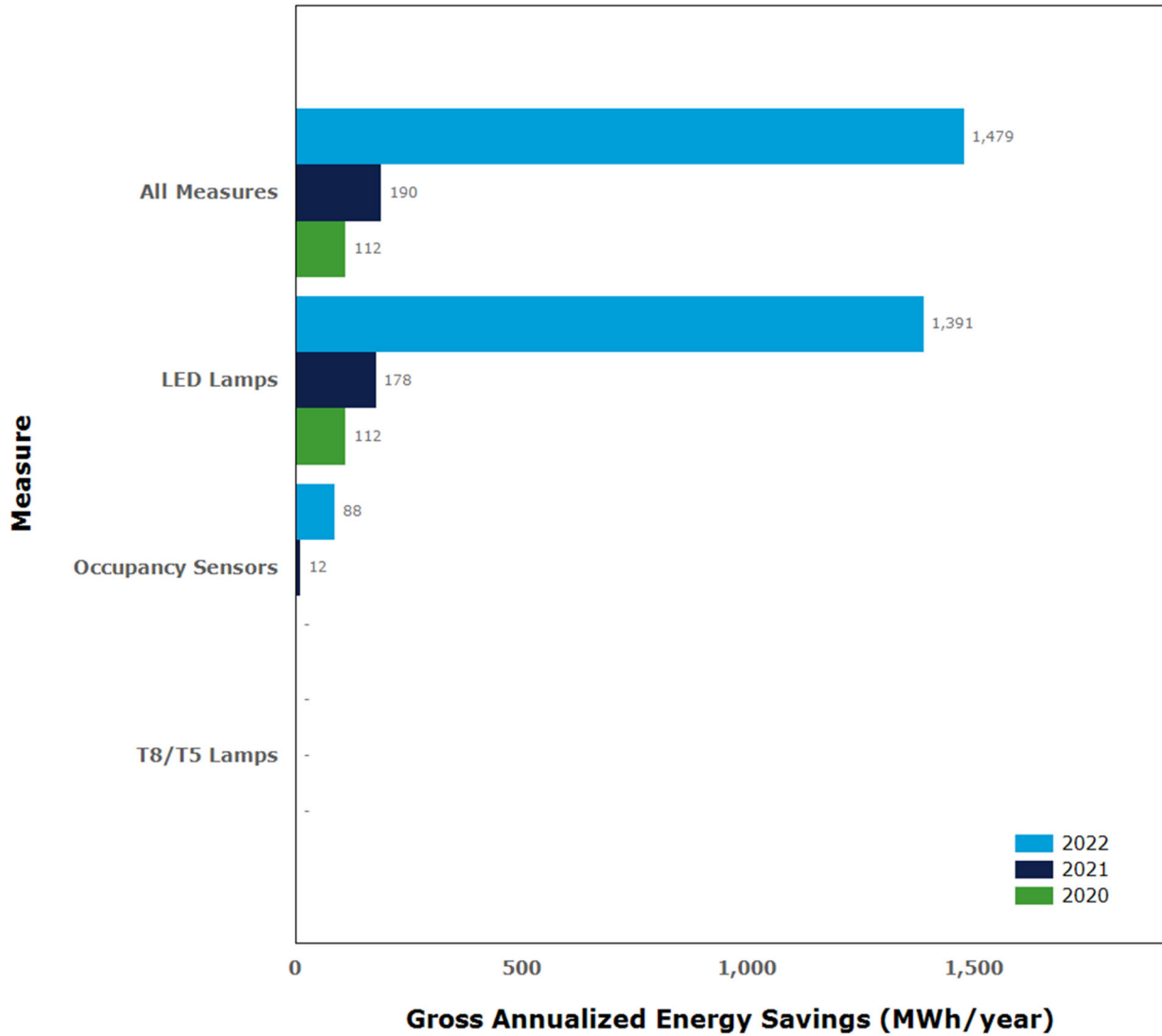


Figure 6-32 shows the net energy savings after applying the updated realization rate and NTG ratio from the Impact Evaluation, Baseline Study, and Persistence Study that DNV performed.



Figure 6-32. North Carolina Non-Residential Lighting Systems & Controls Program net annualized energy savings (MWh/year) by measure and year

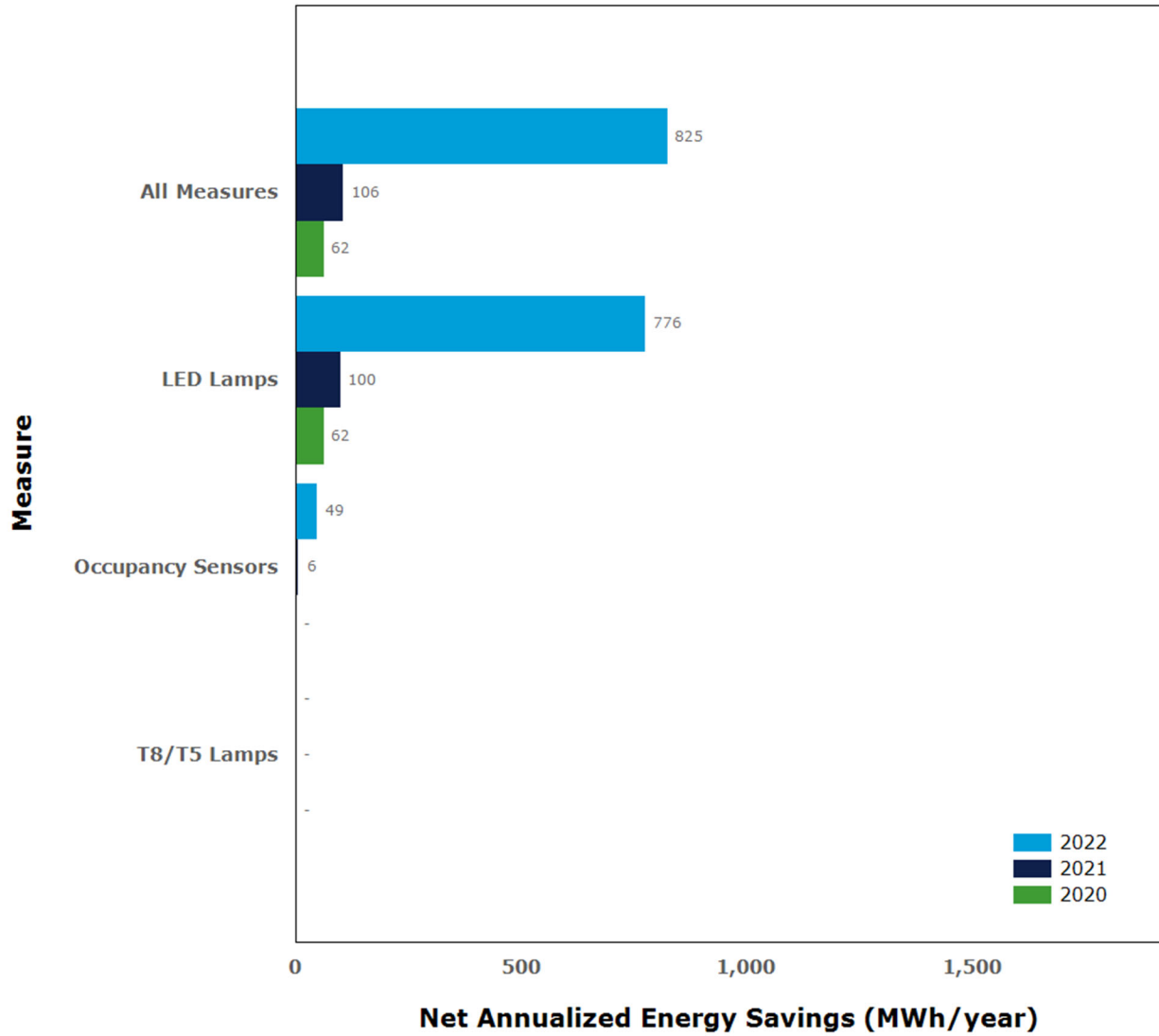




Figure 6-33 and Figure 6-34 show the program’s participation and gross annualized energy savings, respectively, by building type and year.

Figure 6-33 shows that in 2022, “warehouse & storage” and “mercantile (retail, not mall)” building types enrolled the most participants, each accounting for 25% of program participation.

Figure 6-33. North Carolina Non-Residential Lighting Systems & Controls Program participation by building type and year

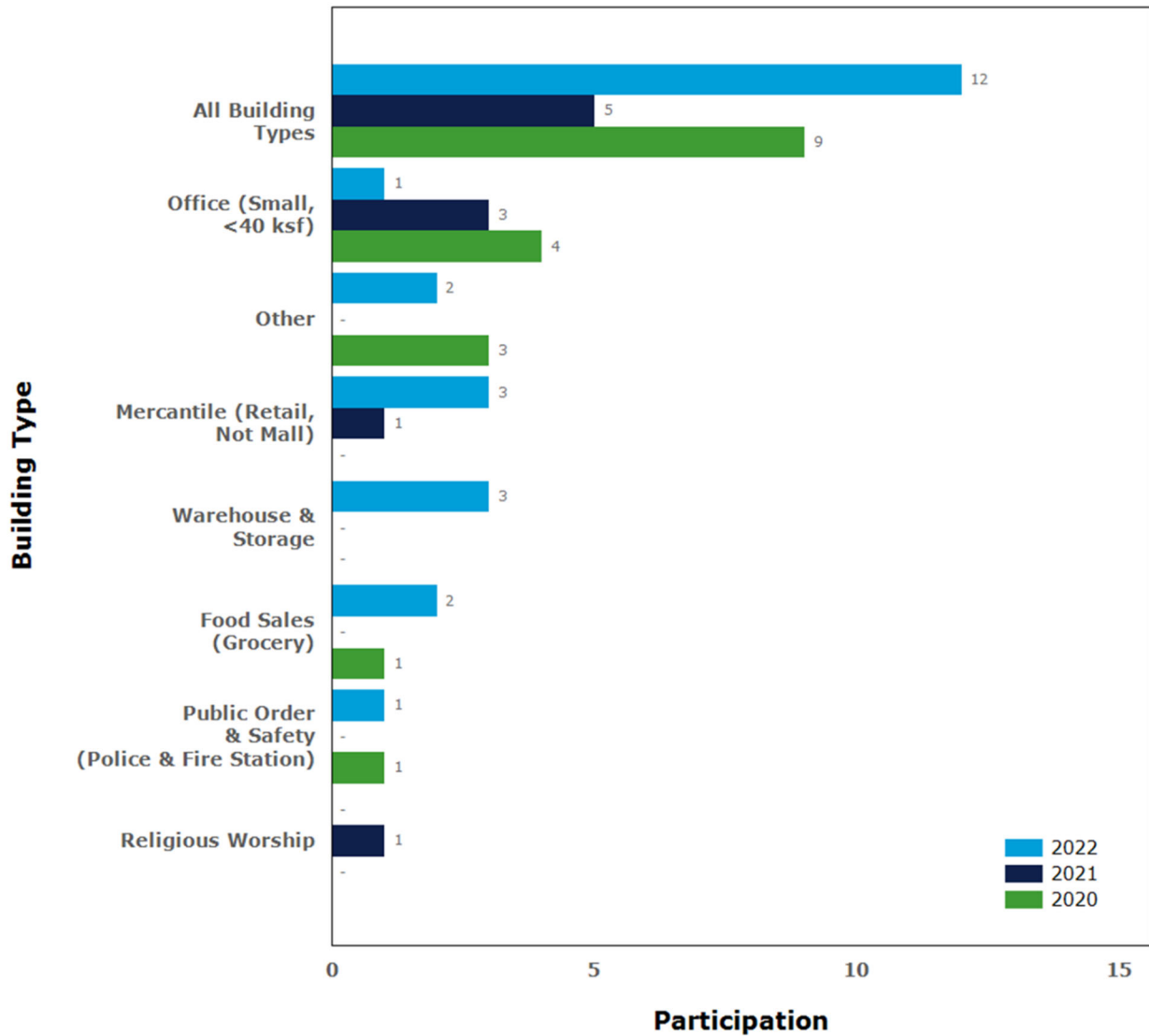




Figure 6-34 shows that “warehouse & storage” building types contributed the majority (70%) of gross energy savings achieved in 2022. The disproportionate amount of savings as compared to participation is due to one large project.

Figure 6-34. North Carolina Non-Residential Lighting Systems & Controls Program gross annualized energy savings by building type and year (MWh/year)

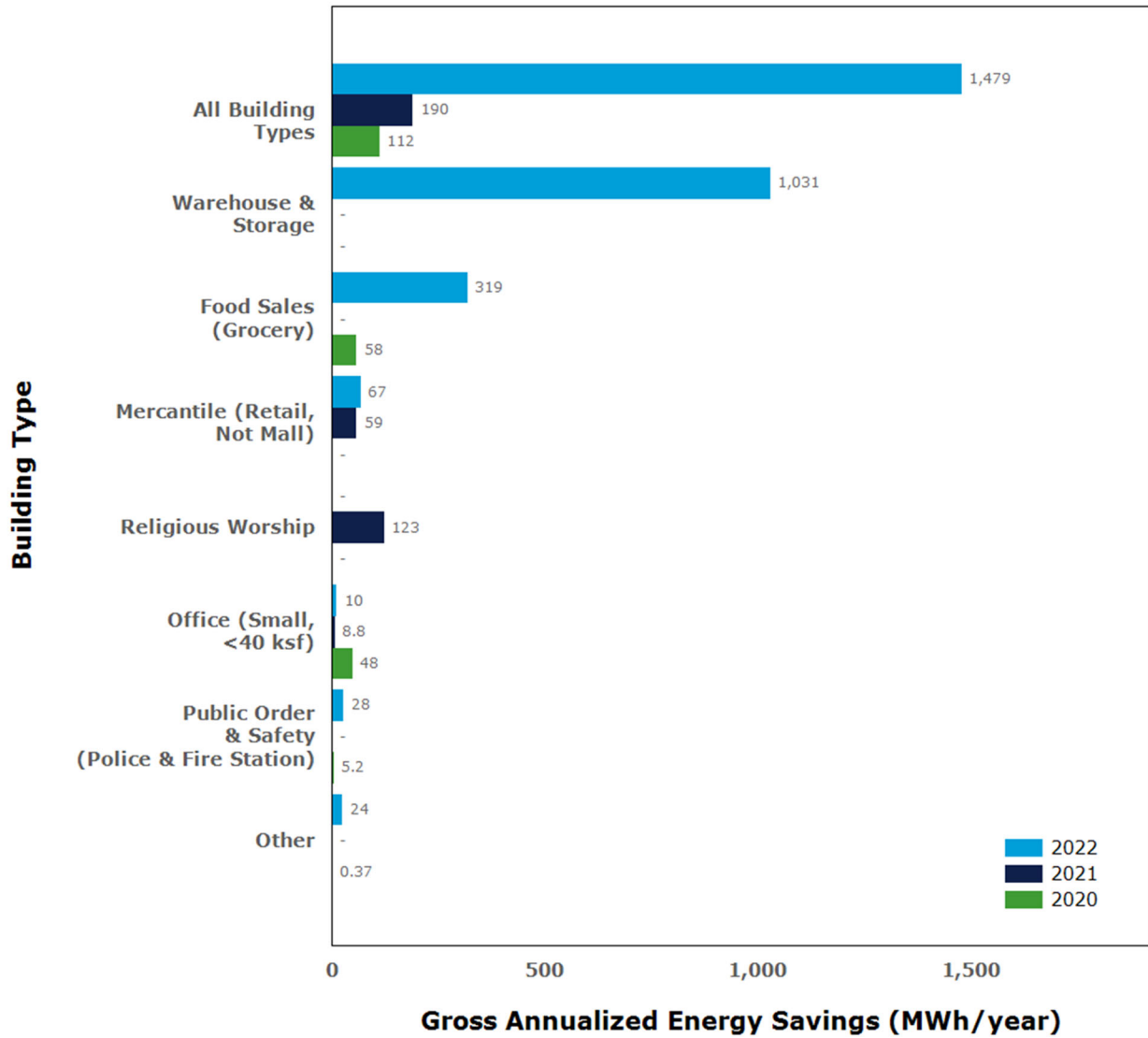
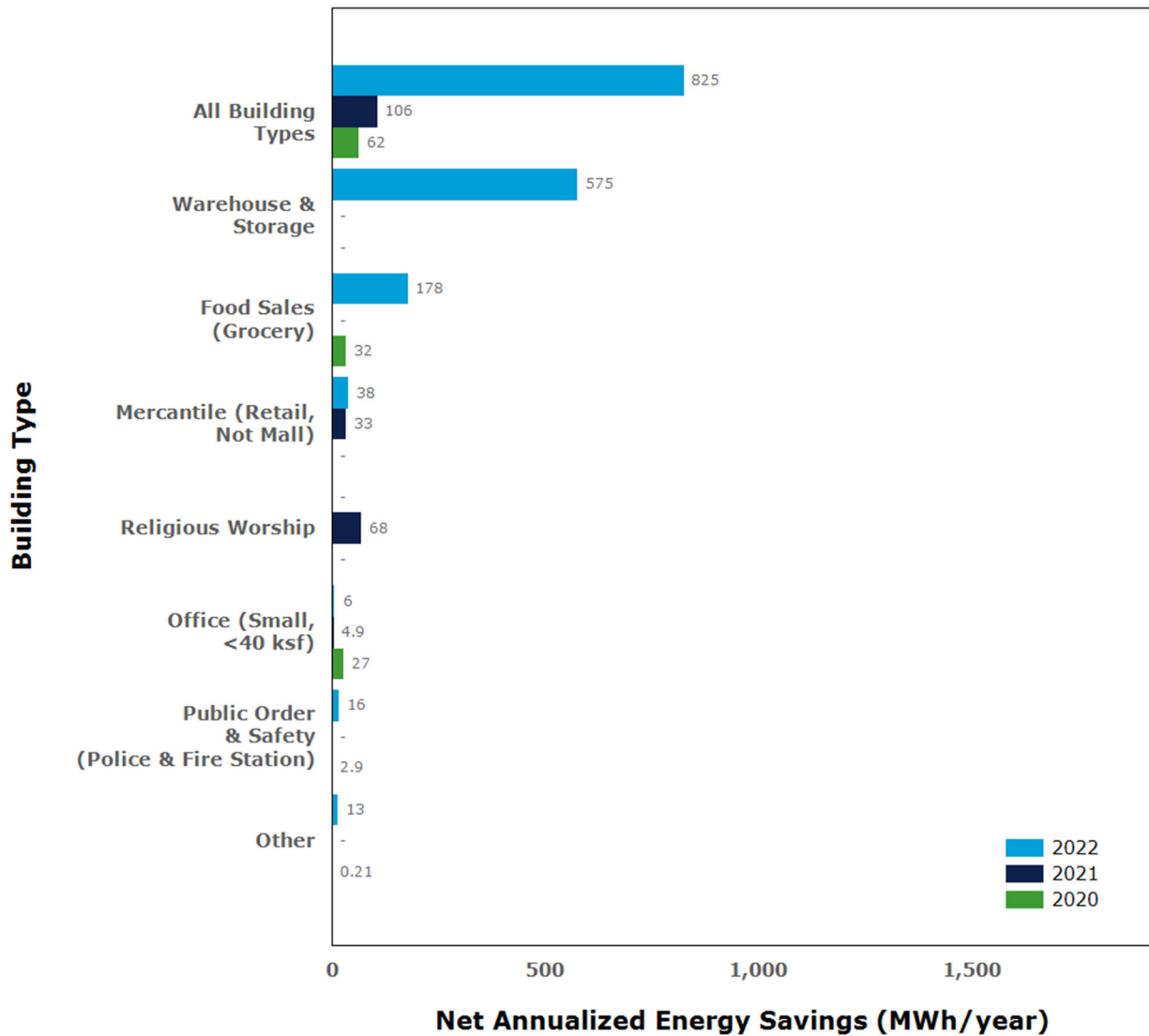




Figure 6-35 shows the net energy savings after applying the updated realization rate and NTG ratio from the Impact Evaluation, Baseline Study, and Persistence Study that DNV performed.

Figure 6-35. North Carolina Non-Residential Lighting Systems & Controls Program net annualized energy savings by building type and year (MWh/year)





6.5 Non-Residential Small Manufacturing Program – Virginia and North Carolina

6.5.1 Program description



This program provides qualifying non-residential customers with incentives for the installation of energy efficiency improvements, consisting of primarily compressed air system measures for small manufacturing facilities.

This program is implemented through a contractor network, so customers must contact a participating contractor to be eligible for the rebate. All Dominion Energy non-residential customers are eligible except those who are exempt by statute or special contract, or who have opted out. Customers are not considered

participants 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.

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. In Virginia, the program officially launched on January 1, 2020.¹⁷⁵ The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 571). In North Carolina, the program officially launched on January 1, 2020.¹⁷⁶ Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. A major change in program delivery happened in fall 2021 when the program was opened to customers with over 500 kW of demand, in the SCC’s Final Order in Case No. PUR-2020-00274 on September 1, 2021. Since the restriction was lifted the program experienced a significant increase in enrollment in 2022.

6.5.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program which is included in Appendix E. For the current period, the approach included reviewing the tracking data and reviewing the implementer-provided savings calculation files to estimate gross energy savings and demand reductions to ensure overall consistency with the DE TRM methodologies in Appendix F. The implementer calculation files, however, may also account for 1) interactivity between measures and 2) multiple compressor systems.

Table 6-15. Non-Residential Small Manufacturing Program (Phase VII) planning assumptions system-wide

| Assumption | Value |
|--|---------------------------|
| Target Market | Non-residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 12.24 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 50,767 |

¹⁷⁵ Virginia Non-Residential Small Manufacturing Program Terms and Conditions, <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/save-energy/va-non-res-sm-manufacture-terms-and-conditions.pdf>. Accessed February 08, 2023.

¹⁷⁶ North Carolina Non-Residential Small Manufacturing Program Terms and Conditions, <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/north-carolina---electric/save-energy/nc-non-res-sm-manufacture-terms-conditions.pdf>. Accessed February 08, 2023.



| Assumption | Value |
|--|------------|
| Gross Average Summer Coincident Peak Demand Reduction per Participant (kW) | 10.69 |
| Gross Average Winter Coincident Peak Demand Reduction per Participant (kW) | 10.69 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 45,690 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 9.62 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 9.62 |
| Average Rebate per Participant (US\$) | \$9,815.00 |

6.5.3 Assessment of program progress toward plan

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

6.5.3.1 Key Virginia program data

Table 6-16 provides performance indicator data from 2019, through December 31, 2022, and shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix O.22, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are in Appendix Q.

Table 6-16. Virginia Non-Residential Small Manufacturing Program performance indicators (2019–2022)¹⁷⁷

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|--------------------------------------|---------------------------------|------------|-------------|-------------|-------------|---------------------------|
| Operations and Management Costs (\$) | | | | | | |
| | Indirect Other (Administrative) | \$12,414 | \$17,681 | \$13,158 | \$29,048 | \$72,301 |
| Total Costs (\$) | Total ¹⁷⁸ | \$367,297 | \$331,721 | \$280,616 | \$695,693 | \$1,675,327 |
| | Planned | \$862,936 | \$1,226,932 | \$1,235,523 | \$1,244,758 | \$4,570,148 |
| | Variance | -\$495,639 | -\$895,211 | -\$954,907 | -\$549,065 | -\$2,894,821 |
| | Annual % of Planned | 43% | 27% | 23% | 56% | 37% |
| Participants | Total (Gross) | 0 | 0 | 1 | 19 | 20 |
| | Planned (Gross) | 35 | 66 | 66 | 66 | 233 |
| | Variance | -35 | -66 | -65 | -47 | -213 |

¹⁷⁷ The sum of the individual annual values may differ from the total value due to rounding.

¹⁷⁸ 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 | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|--|-----------|-----------|-----------|-----------|---------------------------|
| | Annual % of Planned (Gross) | 0% | 0% | 2% | 29% | 9% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 0 | 112,237 | 4,886,095 | 4,998,332 |
| | Realization Rate | N/A | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 0 | 112,237 | 4,886,095 | 4,998,332 |
| | Net-to-Gross Ratio ¹⁷⁹ | N/A | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | 0 | -11,224 | -488,610 | -499,833 |
| | Net Adjusted Savings | 0 | 0 | 101,013 | 4,397,486 | 4,498,499 |
| | Planned Savings (Net) | 1,599,156 | 3,015,551 | 3,015,551 | 3,015,551 | 10,645,810 |
| | Annual % Toward Planned Savings (Net) | 0% | 0% | 3.35% | 145.8% | 42.3% |
| | Avg. Savings per Participant (Gross) | N/A | N/A | 112,237 | 257,163 | 249,917 |
| | Avg. Savings per Participant (Net) | N/A | N/A | 101,013 | 231,447 | 224,925 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 23.2 | 582.2 | 605.4 |
| | Realization Rate | N/A | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 23.2 | 582.2 | 605.4 |
| | Net-to-Gross Ratio ¹⁷⁹ | N/A | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | -2.3 | -58.2 | -60.5 |
| | Net Adjusted Demand | 0.0 | 0.0 | 20.9 | 524.0 | 544.9 |
| | Planned Demand (Net) | 336.7 | 634.9 | 634.9 | 634.9 | 2,241.3 |
| | Annual % Toward Planned Demand (Net) | 0% | 0% | 3.29% | 82.5% | 24.3% |
| | Avg. Peak Demand per Participant (Gross) | N/A | N/A | 23.2 | 30.6 | 30.3 |
| | Avg. Demand per Participant (Net) | N/A | N/A | 20.9 | 27.6 | 27.2 |
| Installed Winter | Total Gross Deemed Demand | - | - | 23.2 | 582.2 | 605.4 |
| | Realization Rate | - | - | 100% | 100% | 100% |

¹⁷⁹ 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), the implementation vendor has calculated that 9% 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 Methodologies, section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|------------------------------|---|-------|-------|----------|----------|---------------------------|
| Demand Reduction (kW) | Realization Rate Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | - | 23.2 | 582.2 | 605.4 |
| | Net-to-Gross Ratio ¹⁷⁹ | - | - | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | - | - | -2.3 | -58.2 | -60.5 |
| | Net Adjusted Demand | - | - | 20.9 | 524.0 | 544.9 |
| | Planned Demand (Net) | - | - | 634.9 | 634.9 | 1,269.8 |
| | Annual % Toward Planned Demand (Net) | - | - | 3.29% | 82.5% | 42.9% |
| | Avg. Peak Demand per Participant (Gross) | - | - | 23.2 | 30.6 | 30.3 |
| | Avg. Demand per Participant (Net) | - | - | 20.9 | 27.6 | 27.2 |
| Program Performance | Cml Annual \$Admin. Per Participant (Gross) | N/A | N/A | \$43,253 | \$3,615 | \$3,615 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | N/A | \$0 | \$0.01 | \$0.01 |
| | Cml Annual \$Admin. Per kW (Gross) | N/A | N/A | \$1,864 | \$119 | \$119 |
| | Cml Annual \$EM&V per Total Costs (\$) | 20.8% | 25.1% | 22.7% | 18.1% | 18.1% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | N/A | \$10,307 | \$17,149 | \$17,149 |

6.5.3.2 Key North Carolina program data

Table 6-17 provides performance indicator data from 2020, through December 31, 2022, and shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix P.14, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are in Appendix Q.

Table 6-17. North Carolina Non-Residential Small Manufacturing Program performance indicators (2020–2022)¹⁸⁰

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------------------------------|------|------|------|------|---------------------------|
| Operations and Management | | | | | |
| | | | | | |
| | | | | | |

¹⁸⁰ The sum of the individual annual values may differ from the total value due to rounding.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------------|-----------|-----------|-----------|---------------------------|
| Costs (\$) | Indirect Other (Administrative) | \$987 | \$809 | \$676 | \$2,471 |
| Total Costs (\$) | Total ¹⁸¹ | \$18,987 | \$17,245 | \$16,181 | \$52,413 |
| | Planned | \$77,923 | \$76,879 | \$79,423 | \$234,226 |
| | Variance | -\$58,937 | -\$59,634 | -\$63,242 | -\$181,812 |
| | Annual % of Planned | 24% | 22% | 20% | 22% |
| Participants | Total (Gross) | 0 | 0 | 0 | 0 |
| | Planned (Gross) | 4 | 4 | 4 | 12 |
| | Variance | -4 | -4 | -4 | -12 |
| | Annual % of Planned (Gross) | 0% | 0% | 0% | 0% |
| Installed Energy Savings (kWh/year) | 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 ¹⁸² | 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) | 182,761 | 182,761 | 182,761 | 548,282 |
| | 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 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 0.0 | 0.0 | 0.0 |
| | Realization Rate | N/A | N/A | N/A | N/A |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ¹⁸² | N/A | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | 0.0 | 0.0 | 0.0 | 0.0 |

¹⁸¹ 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.

¹⁸² 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), the implementation vendor has calculated that 93% 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 Methodologies, section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|--|-------|-------|-------|---------------------------|
| | Planned Demand (Net) | 38.5 | 38.5 | 38.5 | 115.4 |
| | 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 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 0.0 | 0.0 | 0.0 |
| | Realization Rate | - | N/A | N/A | N/A |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ¹⁸² | - | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | - | 38.5 | 38.5 | 77.0 |
| | Annual % Toward Planned Demand (Net) | -% | 0% | 0% | 0% |
| | Avg. Peak Demand per Participant (Gross) | - | N/A | N/A | N/A |
| Avg. Demand per Participant (Net) | - | N/A | N/A | N/A | |
| Program Performance | Annual \$Admin. per Participant (Gross) | N/A | N/A | N/A | N/A |
| | Annual \$Admin. per kWh/year (Gross) | N/A | N/A | N/A | N/A |
| | Annual \$Admin. per kW (Gross) | N/A | N/A | N/A | N/A |
| | Annual \$EM&V per Total Costs (\$) | 24.4% | 20.9% | 24.0% | 24.0% |
| | Annual \$Rebate per Participant (Gross) | N/A | N/A | N/A | N/A |

6.5.3.3 Additional Virginia program data

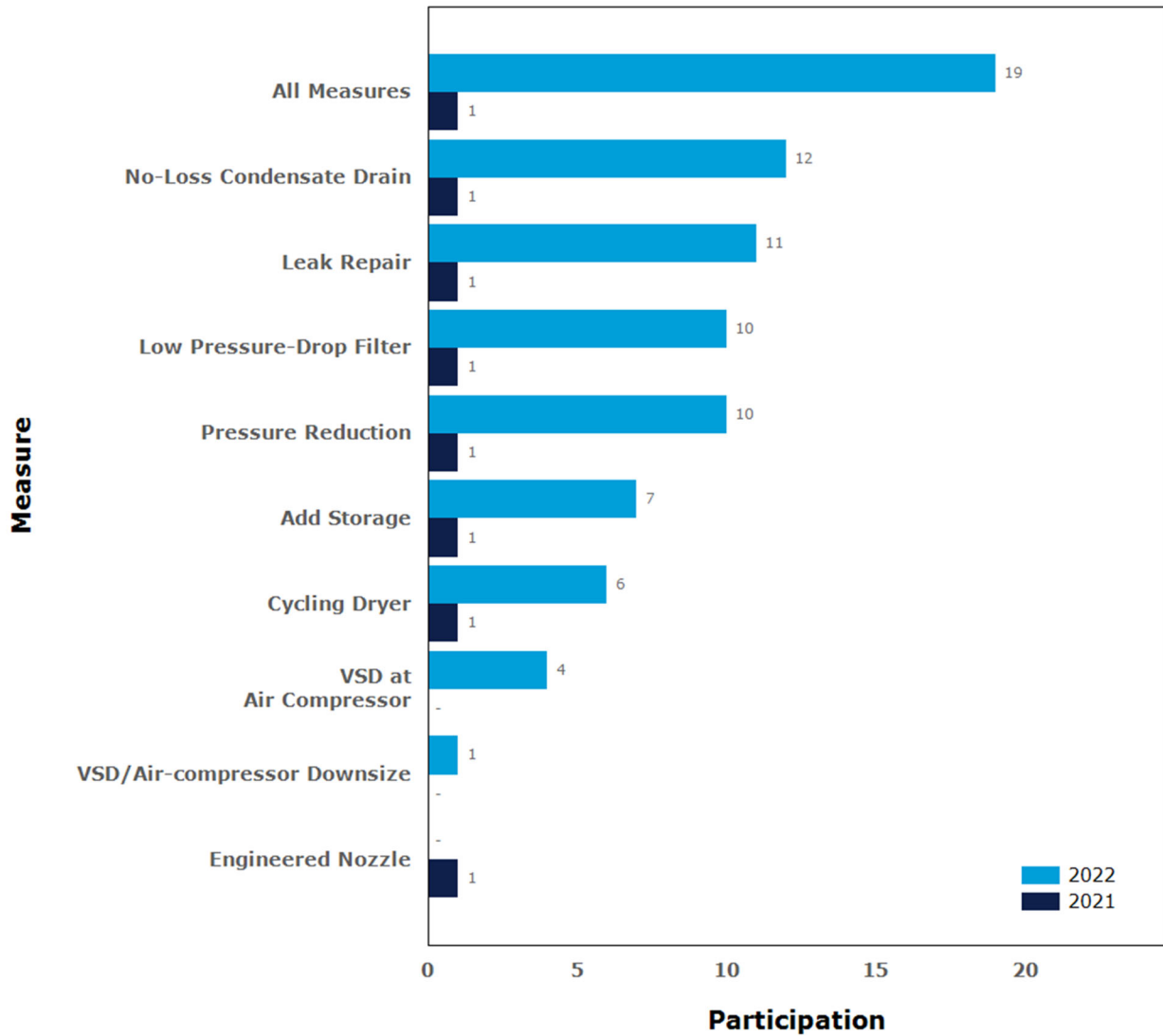
Additional program data regarding participation and overall program savings for Virginia are provided below.

Note that participation in these charts is the count of new and unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed those measures in that year, regardless of whether they participated in the program in previous years. This differs from the participation count as presented in the preceding Key Virginia program data and Key North Carolina program data sections where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings continue to accrue towards savings totals. Other detailed program participation and savings at the measure level are provided in Appendix O.22.

Figure 6-36 shows that there were eight unique measures implemented in this program during 2022 in Virginia. Except for the VSD/Air-compressor measure which had one participant, each measure had at least three participants. The no-loss condensate drain measure had twelve participants—the most participants for any measure.



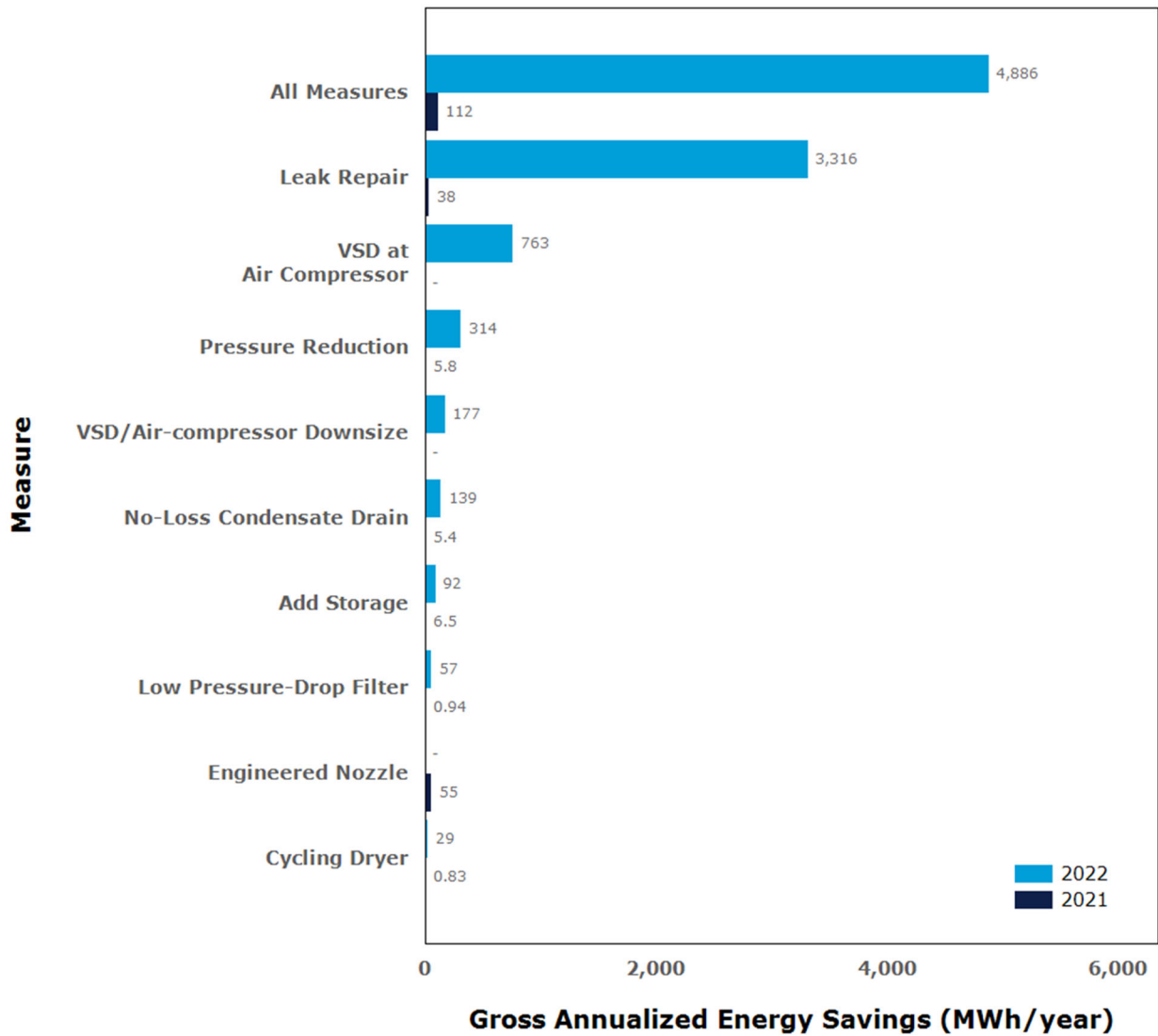
Figure 6-36. Virginia Non-Residential Small Manufacturing Program participation by measure and year



The program achieved gross annualized energy savings of 4,886 MWh/year during 2022 in Virginia, as shown in Table 6-16 and Figure 6-37. Leak repairs of compressor systems generated the largest share of the savings, accounting for approximately 68% of 2022 savings.



Figure 6-37. Virginia Non-Residential Small Manufacturing Program gross annualized energy savings (MWh/year) by measure and year



6.5.3.4 Additional North Carolina program data

No North Carolina customers have participated in the program through 2022.



6.6 Non-Residential Window Film Program – Virginia and North Carolina

6.6.1 Program description

The Non-Residential Window Film Program provides incentives to qualifying non-residential customers to install solar reduction window film to lower their cooling bills and improve occupant comfort.

This program is implemented through a contractor network, so customers must contact a participating contractor to be eligible for the rebate. All Dominion Energy non-residential customers are eligible except those who are exempt by statute or special contract, or who have opted out of participating in energy efficiency programs.

Customers who have previously received a rebate for the Non-Residential Window Film Program are not eligible to receive another rebate for installing the same measure on the same window.



Image courtesy of Dominion Energy

An initial assessment must be completed and submitted for the following types of projects before the work can be initiated:

- Past participants who have previously received a rebate in the Non-Residential Window Film Program
- All projects with an estimated rebate amount of \$10,000 or more
- All self-install projects

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, 2019.¹⁸³ The North Carolina Utilities Commission approved this program on November 13, 2019 (Docket No. E-22, SUB 570). The program officially launched on January 1, 2020. Upon approval, the Company worked to finalize data systems, build contractor networks, and finalize implementation details. A major change in program delivery happened in fall 2021 when the program was opened to customers with over 500 kW of demand, in the SCC's Final Order in Case No. PUR-2020-00274 on September 1, 2021.

6.6.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 6-18 outlines Dominion Energy's initial program planning assumptions that were used to design the program. DNV uses the planned NTG factor in its net savings calculations until it can be verified through EM&V.

¹⁸³ Virginia Non-Residential Window Film Program Terms and Conditions <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/save-energy/va-non-res-window-film-terms-conditions.pdf>. Accessed February 21, 2023.



Table 6-18. Non-Residential Window Film Program (Phase VII) planning assumptions system-wide

| Assumption | Value |
|--|---------------------------|
| Target Market | Non-Residential customers |
| NTG Factor | 80% |
| Measure Life (years) | 10 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 16.55 |
| Gross Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.0048 |
| Gross Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.0038 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 13.24 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 0.0038 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 0.0030 |
| Average Rebate per Participant (square foot) | \$1 |

6.6.3 Assessment of program progress toward plan

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

6.6.3.1 Key Virginia program data

Table 6-19 provides performance indicator data annually and from program inception through 2022. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix O.23, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are in Appendix Q.



Table 6-19. Virginia Non-Residential Window Film Program performance indicators (2019–2022)¹⁸⁴

| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019–2022) |
|---|---------------------------------|------------|-----------|------------|------------|---------------------------|
| Operations and Management Costs (\$) | Indirect Other (Administrative) | \$6,494 | \$19,045 | \$15,262 | \$11,429 | \$52,231 |
| | Total ¹⁸⁵ | \$192,146 | \$356,882 | \$325,497 | \$273,733 | \$1,148,259 |
| | Planned | \$317,588 | \$445,263 | \$435,863 | \$444,630 | \$1,643,344 |
| | Variance | -\$125,441 | -\$88,381 | -\$110,366 | -\$170,897 | -\$495,085 |
| | Annual % of Planned | 61% | 80% | 75% | 62% | 70% |
| Participants | Total (Gross) | 0 | 22 | 19 | 28 | 69 |
| | Total Square Feet | 0 | 62,925 | 21,212 | 17,711 | 101,848 |
| | Planned Square Feet (Gross) | 68,400 | 125,913 | 125,913 | 125,913 | 446,139 |
| | Variance | -68,400 | -62,988 | -104,701 | -108,202 | -344,291 |
| | Annual % of Planned (Gross) | 0% | 50% | 17% | 14% | 23% |
| Square Feet | Total Square Feet | 0 | 62,925 | 21,212 | 17,711 | 101,848 |
| | North Facing | 0 | 23,874 | 9,861 | 3,507 | 37,242 |
| | East Facing | 0 | 11,852 | 9,480 | 5,414 | 26,746 |
| | West Facing | 0 | 3,002 | 1,431 | 2,179 | 6,612 |
| | South Facing | 0 | 24,197 | 440 | 6,611 | 31,248 |
| Installed Energy | Total Gross Deemed Savings | 0 | 250,377 | 79,659 | 180,296 | 510,331 |

¹⁸⁴ The sum of the individual annual values may differ from the total value due to rounding.

¹⁸⁵ 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 | 2019 | 2020 | 2021 | 2022 | Program total (2019-2022) |
|--|---|---------------------------|-----------|-----------|-----------|---------------------------|
| Savings (kWh/year) | Realization Rate | N/A | 100% | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 250,377 | 79,659 | 180,296 | 510,331 |
| | Net-To-Gross Ratio ¹⁸⁶ | N/A | 80% | 80% | 80% | 80% |
| | Net-to-Gross Adjustment | 0 | -50,075 | -15,932 | -36,059 | -102,066 |
| | Net Adjusted Savings | 0 | 200,302 | 63,727 | 144,237 | 408,265 |
| | Planned Savings (Net) | 902,880 | 1,662,052 | 1,662,052 | 1,662,052 | 5,889,035 |
| | Annual % Toward Planned Savings (Net) | 0% | 12.1% | 3.83% | 8.68% | 6.93% |
| | Avg. Savings per Participant (Gross) | N/A | 11,381 | 4,193 | 6,439 | 7,396 |
| | Avg. Gross Savings Per Square Foot (kWh/year) | N/A | 4.0 | 3.8 | 10.2 | 5.0 |
| | Avg. Savings per Participant (Net) | N/A | 9,105 | 3,354 | 5,151 | 5,917 |
| | Avg. Net Savings Per Square Foot (kWh/year) | N/A | 3.2 | 3.0 | 8.1 | 4.0 |
| | Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 78.1 | 0.0 | 0.0 |
| Realization Rate | | N/A | 100% | N/A | N/A | 100% |
| Realization Rate Adjustment | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Adjusted Gross Demand | | 0.0 | 78.1 | 0.0 | 0.0 | 78.1 |
| Net-to-Gross Ratio | | N/A | 80% | N/A | N/A | 80% |
| Net-to-Gross Adjustment ¹⁸⁶ | | 0.0 | -15.6 | 0.0 | 0.0 | -15.6 |
| Net Adjusted Demand | | 0.0 | 62.5 | 0.0 | 0.0 | 62.5 |
| Planned Demand (Net) | | 262.7 | 483.5 | 483.5 | 483.5 | 1,713.2 |
| Annual % Toward Planned Demand (Net) | | 0% | 12.9% | 0% | 0% | 3.65% |
| Avg. Peak Demand per Participant (Gross) | | N/A | 3.5 | 0.0 | 0.0 | 1.1 |
| Avg. Gross Demand Reduction Per Square Foot (kW) | | N/A | 0.001 | 0.0 | 0.0 | 0.001 |
| Avg. Demand per Participant (Net) | | N/A | 2.8 | 0.0 | 0.0 | 0.9 |

¹⁸⁶ 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), the implementation vendor has calculated that 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 Methodologies, section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2019 | 2020 | 2021 | 2022 | Program total (2019-2022) |
|---|--|-------|---------|---------|---------|---------------------------|
| | Avg. Net Demand Reduction Per Square Foot (kW) | N/A | 0.001 | 0.0 | 0.0 | 0.001 |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | - | 0.0 | 0.0 | 0.0 |
| | Realization Rate | - | - | N/A | N/A | N/A |
| | Realization Rate Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | - | 0.0 | 0.0 | 0.0 |
| | Net-to-Gross Ratio ¹⁸⁶ | - | - | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | - | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | - | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | - | - | 381.8 | 381.8 | 763.50 |
| | Annual % Toward Planned Demand (Net) | - | - | 0% | 0% | 0% |
| | Avg. Peak Demand per Participant (Gross) | - | - | 0.0 | 0.0 | 0.0 |
| | Avg. Gross Demand Reduction Per Square Foot (kW) | - | - | 0.0 | 0.0 | 0.0 |
| | Avg. Demand per Participant (Net) | - | - | 0.0 | 0.0 | 0.0 |
| | Avg. Net Demand Reduction Per Square Foot (kW) | - | - | 0.0 | 0.0 | 0.0 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$1,161 | \$995 | \$757 | \$757 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0 | \$0 | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$327 | \$523 | \$669 | \$669 |
| | Cml Annual \$EM&V per Total Costs (\$) | 15.4% | 16.3% | 17.6% | 16.2% | 16.2% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$2,465 | \$1,833 | \$1,577 | \$1,577 |



6.6.3.2 Key North Carolina program data

Key data highlights for enrollment, energy savings, demand reduction and program costs for North Carolina appear below. Following this summary, Table 6-20 provides performance indicator data for the year. Shaded cells are considered extraordinarily sensitive information. Detailed program indicators by year and month are provided in Appendix P.15, along with program performance by measure and a comparison of program savings with usage by rate schedule. Cumulative gross and net savings are in Appendix Q.

Table 6-20. North Carolina Non-Residential Window Film program performance indicators (2020-2022)¹⁸⁷

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---------------------------------|----------|----------|----------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$968 | \$917 | \$579 | \$2,463 |
| Total Costs (\$) | Total ¹⁸⁸ | \$18,804 | \$19,546 | \$13,856 | \$52,206 |
| | Planned | \$28,279 | \$27,121 | \$28,370 | \$83,770 |
| | Variance | -\$9,475 | -\$7,575 | \$14,514 | -\$31,564 |
| | Annual % of Planned | 66% | 72% | 49% | 62% |
| Participants | Total (Gross) | 1 | 1 | 0 | 2 |
| | Total Square Feet | 1,004 | 295 | 0 | 1,299 |
| | Planned Square Feet (Gross) | 8,037 | 8,037 | 8,037 | 24,111 |
| | Variance | -7,033 | -7,742 | -8,037 | -22,812 |
| | Annual % of Planned (Gross) | 12% | 4% | 0% | 5% |
| Square Feet | Total Square Feet | 1,004 | 295 | 0 | 1,299 |
| | North Facing | 254 | 0 | 0 | 254 |
| | East Facing | 0 | 0 | 0 | 0 |
| | West Facing | 0 | 0 | 0 | 0 |
| | South Facing | 750 | 295 | 0 | 1,045 |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 17,430 | 6 | 0 | 17,436 |
| | Realization Rate | 100% | 100% | N/A | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 17,430 | 6 | 0 | 17,436 |

¹⁸⁷ The sum of the individual annual values may differ from the total value due to rounding.

¹⁸⁸ 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|--|--|---------|---------|---------|---------------------------|
| | Net-To-Gross Ratio ¹⁸⁹ | 80% | 80% | N/A | 80% |
| | Net-to-Gross Adjustment | -3,486 | -1 | 0 | -3,487 |
| | Net Adjusted Savings | 13,944 | 5 | 0 | 13,948 |
| | Planned Savings (Net) | 106,088 | 106,088 | 106,088 | 318,265 |
| | Annual % Toward Planned Savings (Net) | 13.1% | 0.00% | 0% | 4.38% |
| | Avg. Savings per Participant (Gross) | 17,430 | 6 | N/A | 8,718 |
| | Avg. Gross Savings Per Square Foot (kWh/year) | 17.4 | 0.02 | N/A | 13.4 |
| | Avg. Savings per Participant (Net) | 13,944 | 5 | N/A | 6,974 |
| | Avg. Net Savings Per Square Foot (kWh/year) | 13.9 | 0.02 | N/A | 10.7 |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 4.7 | 0.0 | 0.0 | 4.7 |
| | Realization Rate | 100% | N/A | N/A | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 4.7 | 0.0 | 0.0 | 4.7 |
| | Net-To-Gross Ratio ¹⁸⁹ | 80% | N/A | N/A | 80% |
| | Net-to-Gross Adjustment | -0.9 | 0.0 | 0.0 | -0.9 |
| | Net Adjusted Demand | 3.7 | 0.0 | 0.0 | 3.7 |
| | Planned Demand (Net) | 30.9 | 30.9 | 30.9 | 92.6 |
| | Annual % Toward Planned Demand (Net) | 12.1% | 0% | 0% | 4.02% |
| | Avg. Peak Demand per Participant (Gross) | 4.7 | 0.0 | N/A | 2.3 |
| | Avg. Gross Demand Reduction Per Square Foot (kW) | 0.005 | 0.0 | N/A | 0.004 |
| | Avg. Demand per Participant (Net) | 3.7 | 0.0 | N/A | 1.9 |
| Avg. Net Demand Reduction Per Square Foot (kW) | 0.004 | 0.0 | N/A | 0.003 | |
| Installed Winter Demand Reduction (kW) | Total Gross Deemed Demand | - | 0.0 | 0.0 | 0.0 |
| | Realization Rate | - | N/A | N/A | N/A |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 0.0 | 0.0 | 0.0 |
| | Net-To-Gross Ratio ¹⁸⁹ | - | N/A | N/A | N/A |
| | Net-to-Gross Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Net Adjusted Demand | - | 0.0 | 0.0 | 0.0 |
| | Planned Demand (Net) | - | 24.4 | 24.4 | 48.7 |
| | Annual % Toward Planned Demand (Net) | - | 0% | 0% | 0% |
| | Avg. Peak Demand per Participant (Gross) | - | 0.0 | N/A | 0.0 |
| | Avg. Gross Demand Reduction Per Square Foot (kW) | - | 0.0 | N/A | 0.0 |

¹⁸⁹ 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), the implementation vendor has calculated that 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 Methodologies, Section 3.1.6 Net Savings Estimation for a description of net-to-gross estimation approaches.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|----------------------------|--|---------|-------|---------|---------------------------|
| | Avg. Demand per Participant (Net) | - | 0.0 | N/A | 0.0 |
| | Avg. Net Demand Reduction Per Square Foot (kW) | - | 0.0 | N/A | 0.0 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | \$968 | \$942 | \$1,232 | \$1,232 |
| | Cml Annual \$Admin. per kWh/year (Gross) | \$0.06 | \$0 | \$0 | \$0 |
| | Cml Annual \$Admin. per kW (Gross) | \$208 | \$405 | \$529 | \$529 |
| | Cml Annual \$EM&V per Total Costs (\$) | 15.3% | 17.9% | 17.1% | 17.1% |
| | Cml Annual \$Rebate per Participant (Gross) | \$1,004 | \$650 | \$650 | \$650 |

6.6.3.3 Additional Virginia program data

Figure 6-38 and Figure 6-39 show the program results by window orientation. Customers in 2022 installed window film on all four window orientations. Overall, the east and south window orientations produced the highest gross annualized savings. Participation in this program has been slightly higher in 2022 compared to 2021, particularly in the southern orientation. These differences accounted for a notable increase in gross energy savings from 2021 to 2022, as shown in Figure 6-39.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.



Figure 6-38. Virginia Non-Residential Window Film Program participation by window orientation and year

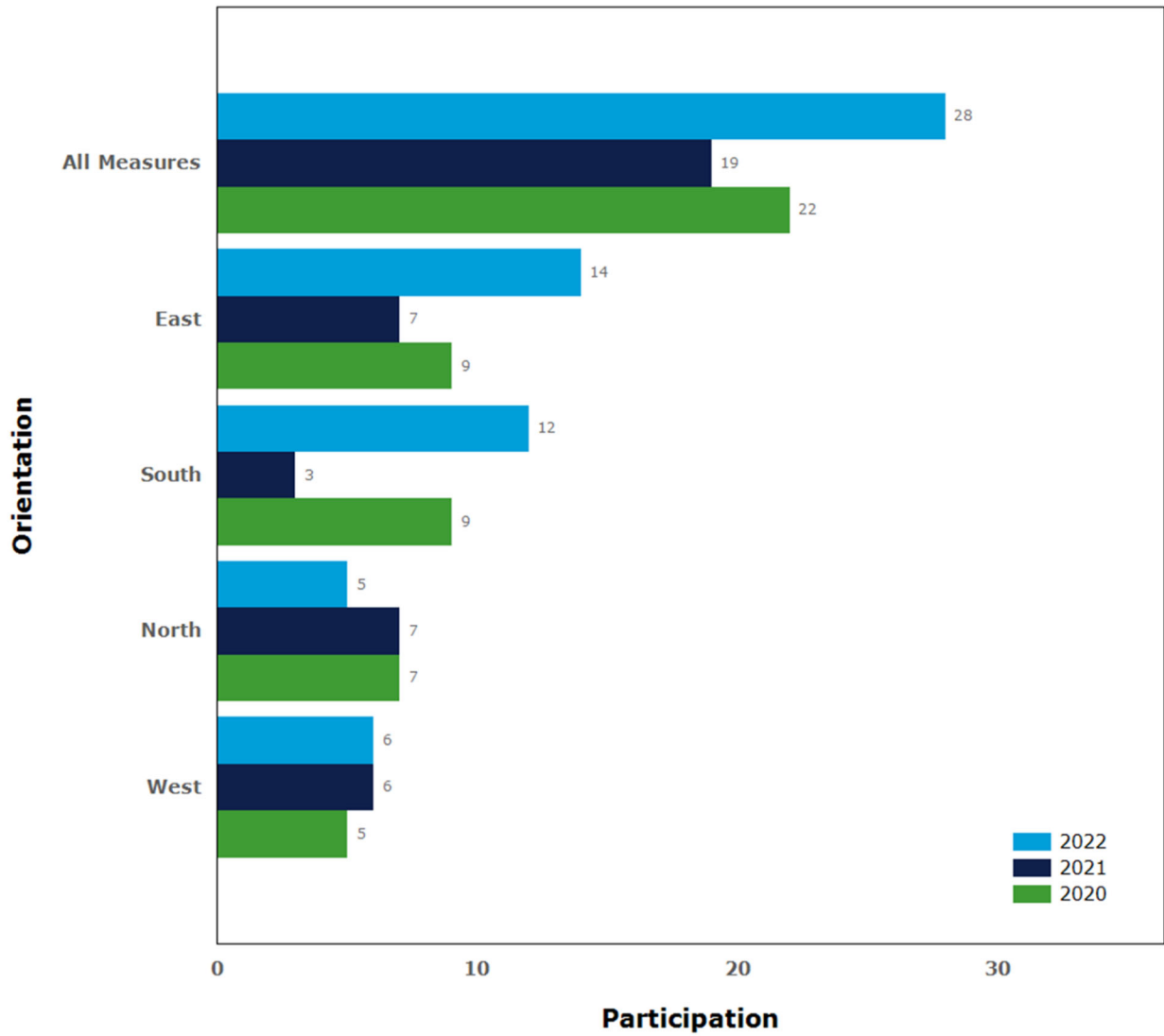




Figure 6-39. Virginia Non-Residential Window Film Program gross annualized energy savings by window orientation and year (MWh/year)

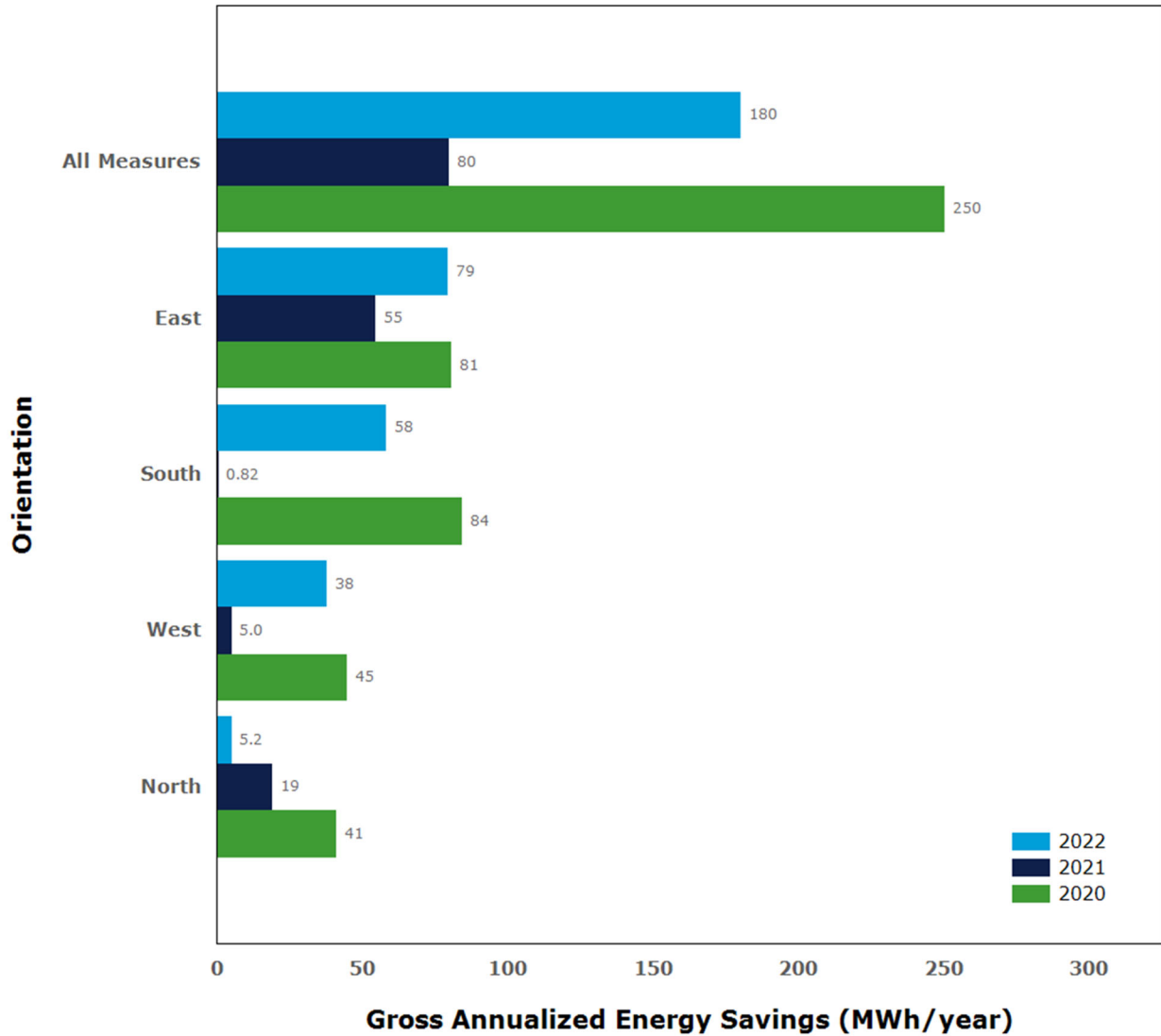


Figure 6-40 and Figure 6-41 show the program results by building type. There was a significant shift in range of customer types who enrolled in this program in 2022, from past participants in 2021. Even though program participation is highest amongst service (beauty, auto repair, workshop), food service (full service), office (small, less than 40,000 square feet), and other building types, they did not all produce the highest savings. The most savings were produced by large offices (\geq 40,000 square feet), and healthcare (outpatient) buildings.



Figure 6-40. Virginia Non-Residential Window Film Program participation by building type and year

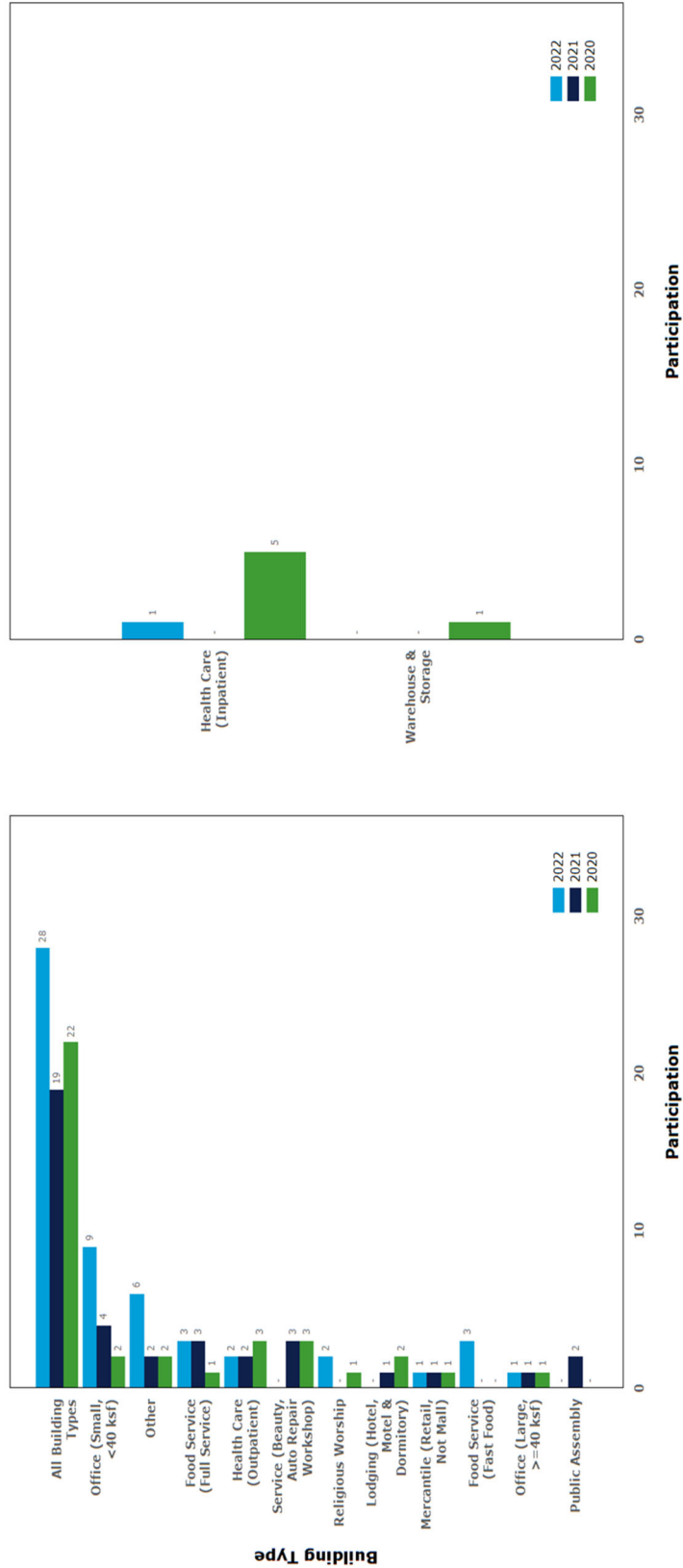
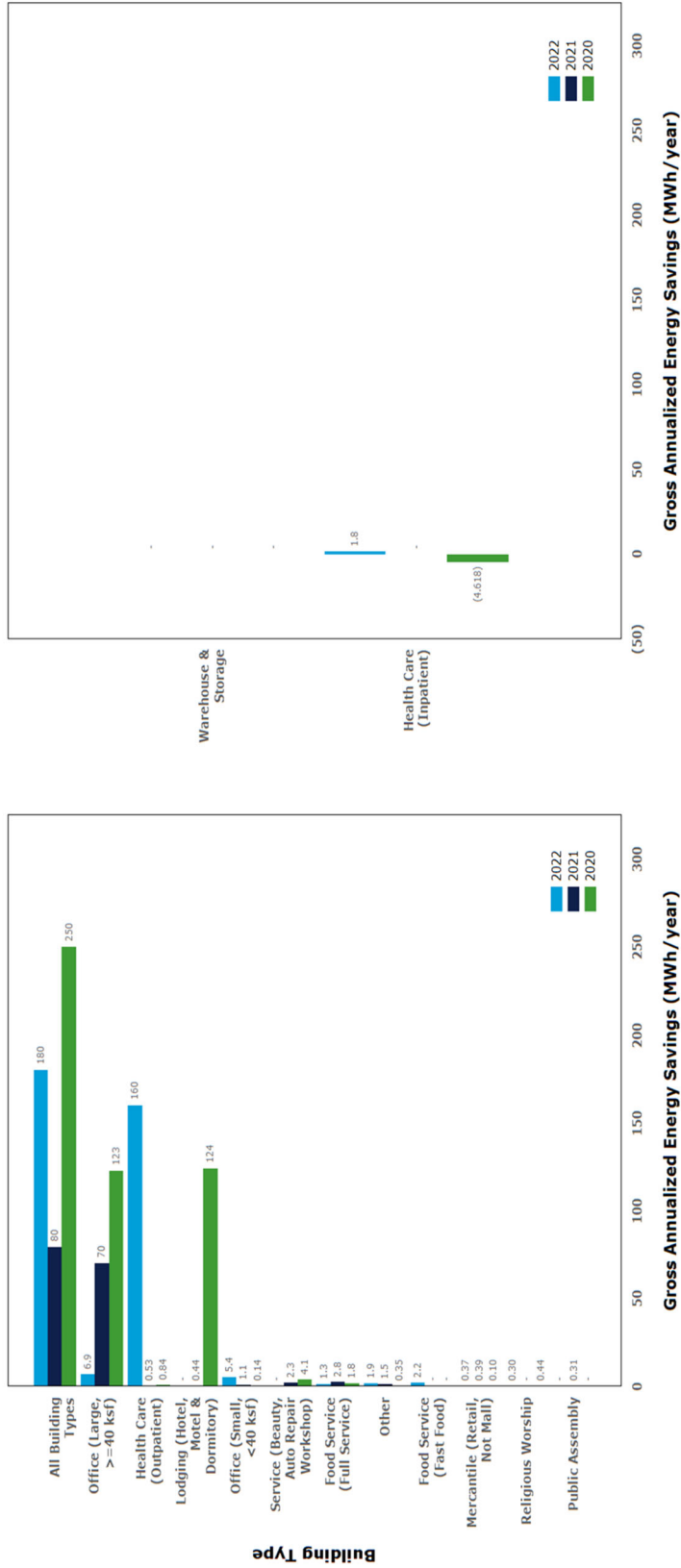




Figure 6-41. Virginia Non-Residential Window Film Program gross annualized energy savings by building type and year (MWh/year)



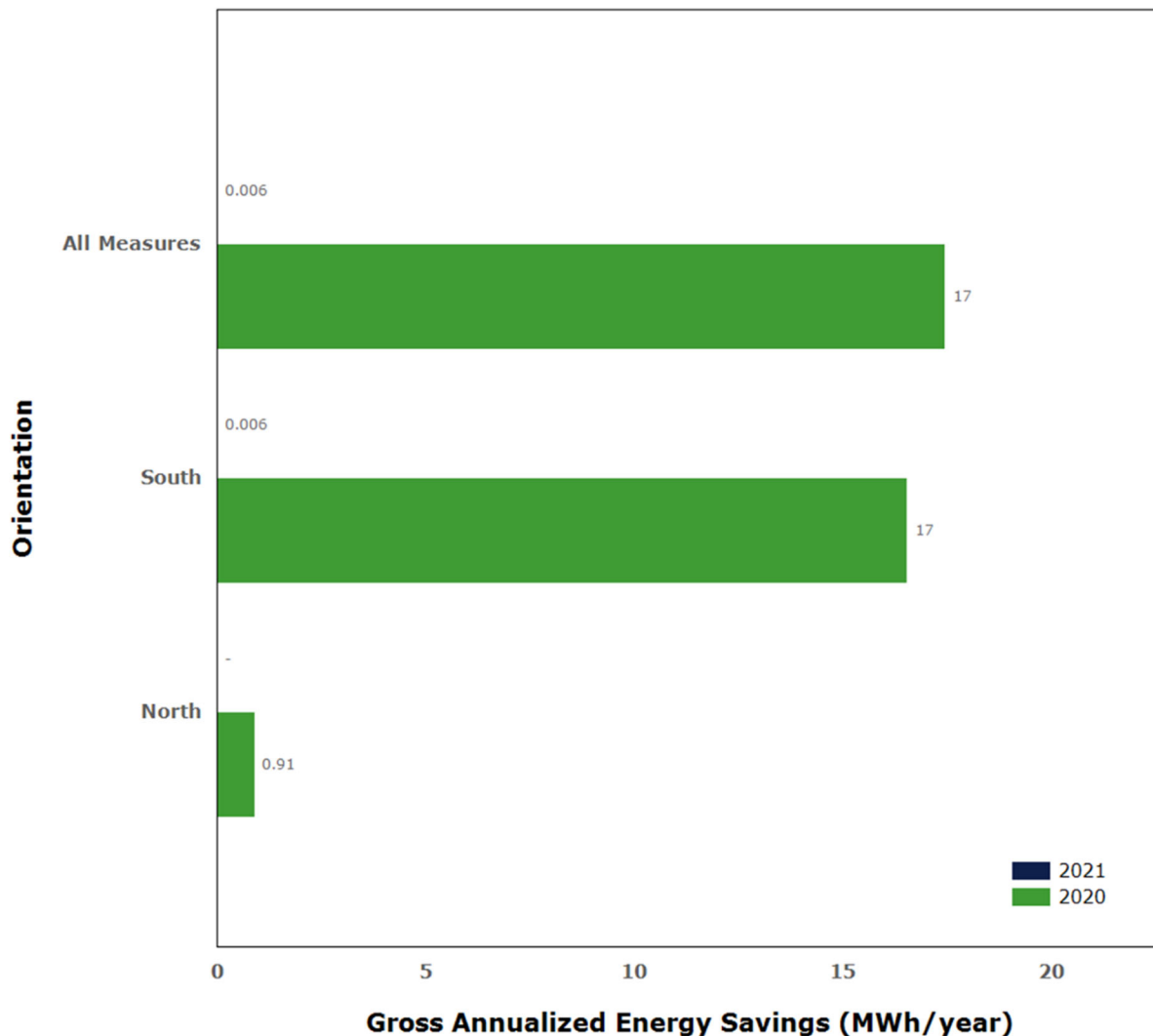


6.6.3.4 Additional North Carolina program data

There were two customers total who participated in this program from its start in 2020 through year-end 2022 in North Carolina. Their building types were service (beauty, auto repair, warehouse) and other. They installed window film on the south- and north-facing windows. Figure 6-42 shows that most of the savings resulted from the window film applied on the south-facing window, and a small proportion from the north-facing window film. The savings were primarily generated from the service building type.

Note that participation in these charts is the count of new unique customers in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, though their savings are counted.

Figure 6-42. North Carolina Non-Residential Window Film Program gross annualized energy savings by window orientation and year (MWh/year)





6.7 Non-Residential Midstream Energy Efficiency Products Program – Virginia

6.7.1 Program description

The Non-Residential Midstream Energy Efficiency Products Program provides distributors or retailers with incentives for the sale of specified rebate-eligible energy efficient equipment. The distributor or retailer is required to discount this rebate-eligible equipment, which is detailed in Table 6-21. To qualify for the program, distributors or retailers must operate in Dominion Energy’s service territory in the Commonwealth of Virginia and provide Dominion with monthly point-of-sale data for the eligible equipment.



Table 6-21. Measures offered through Non-Residential Midstream Energy Efficiency Products Program

| End use | Measure |
|--|--|
| ENERGY STAR Certified Kitchen Appliances | Commercial Electric Fryer |
| | Commercial Hot Food Holding Cabinet |
| | Commercial Griddle |
| | Commercial Convection Oven |
| | Commercial Electric Combination Oven |
| | Commercial Steam Cooker |
| | Commercial Freezer ENERGY STAR Certified Glass Door |
| | Commercial Freezer ENERGY STAR Certified Solid Door |
| | Commercial Refrigerator ENERGY STAR Certified Glass Door |
| | Commercial Refrigerator ENERGY STAR Certified Solid Door |
| Efficient Heating & Cooling Equipment | Packaged Terminal Air Conditioner |
| | Unitary Air-Cooled Air Conditioner |
| | Unitary Air-Cooled Heat Pump |
| | Mini Split Heat Pump |
| | Air Cooled Chiller |
| | Water Cooled Chiller |

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, 2021¹⁹⁰

In 2022, the program achieved a significant increase in energy savings compared to program year 2021. This increase was mainly contributed by water-cooled and air-cooled chillers, although participant levels were low. From 2021 to 2022, not only did the total participants increase from 7 to 113 but also average savings (net) per participant also increased significantly from 8,372 to 12,941 kWh/year.

¹⁹⁰ Non-Residential Midstream Energy Efficiency Products Program Terms and Conditions, <https://domsavings.com/wp-content/uploads/2021/06/TCs-DSM-VIII-Non-Res-Midstream-EE-Products-Final.pdf>. Accessed March 28, 2022.



6.7.2 Methods for the current reporting period

DNV developed an EM&V Plan for this program, which is included in Appendix E. For the current period, the approach included reviewing the tracking data, then estimating gross energy and demand savings using the DE TRM calculations located in Appendix F.

Table 6-22 outlines Dominion Energy’s initial program planning assumptions that were used to design the program. DNV uses the planned NTG factor in its net savings calculations until it can be verified through EM&V.

Table 6-22. Non-Residential Midstream Energy Efficiency Products Program planning assumptions system-wide

| Assumption | Description |
|--|---------------------------|
| Target Market | Non-residential customers |
| NTG Factor | 90% |
| Measure Life (years) | 14.86 |
| Gross Average Annual Energy Savings per Participant (kWh/year) | 14,201 |
| Gross Average Summer Coincident Peak Demand Reduction (kW) per Participant | 9.47 |
| Gross Average Winter Coincident Peak Demand Reduction (kW) per Participant | 1.24 |
| Net Average Annual Energy Savings per Participant (kWh/year) | 12,781 |
| Net Average Summer Coincident Peak Demand Reduction (kW) per Participant | 8.52 |
| Net Average Winter Coincident Peak Demand Reduction (kW) per Participant | 1.12 |
| Average Rebate (US\$) per Participant | \$4,494.53 |

6.7.3 Assessment of program progress toward plan

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

6.7.3.1 Key Virginia program data

Table 6-23 provides performance indicator data annually and cumulatively from program inception through 2022, in Virginia. Shaded cells are considered extraordinarily sensitive information. Appendix O.24 provides detailed incremental program indicators by month, program performance by measure, and a comparison of program savings with usage by rate schedule. Appendix Q provides cumulative gross and net savings.

Table 6-23. Virginia Non-Residential Midstream Energy Efficiency Products Program performance indicators (2020-2022)¹⁹¹

| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|--------------------------------------|---------------------------------|---------|----------|----------|---------------------------|
| Operations and Management Costs (\$) | | | | | |
| | Indirect Other (Administrative) | \$1,969 | \$22,914 | \$35,285 | \$60,168 |

¹⁹¹ The sum of the individual annual values may differ from the total value due to rounding.



| Category | Item | 2020 | 2021 | 2022 | Program total (2020–2022) |
|---|---|----------|--------------|--------------|---------------------------|
| Total Costs (\$) | Total ¹⁹² | \$46,145 | \$488,674 | \$845,079 | \$1,379,898 |
| | Planned | \$0 | \$1,916,471 | \$1,878,007 | \$3,794,478 |
| | Variance | \$46,145 | -\$1,427,798 | -\$1,032,928 | -\$2,414,581 |
| | Annual % of Planned | N/A | 25% | 45% | 36% |
| Participants | Total (Gross) | 0 | 7 | 113 | 120 |
| | Planned (Gross) | 0 | 300 | 300 | 600 |
| | Variance | 0 | -293 | -187 | -480 |
| | Annual % of Planned (Gross) | N/A | 2% | 38% | 20% |
| Installed Energy Savings (kWh/year) | Total Gross Deemed Savings | 0 | 65,116 | 1,624,787 | 1,689,903 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0 | 0 | 0 | 0 |
| | Adjusted Gross Savings | 0 | 65,116 | 1,624,787 | 1,689,903 |
| | Net-to-Gross Ratio | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0 | -6,512 | -162,479 | -168,990 |
| | Net Adjusted Savings | 0 | 58,605 | 1,462,308 | 1,520,913 |
| | Planned Savings (Net) | 0 | 3,834,268 | 3,834,268 | 7,668,537 |
| | Annual % Toward Planned Savings (Net) | N/A | 1.53% | 38.1% | 19.8% |
| | Avg. Savings per Participant (Gross) | N/A | 9,302 | 14,379 | 14,083 |
| Avg. Savings per Participant (Net) | N/A | 8,372 | 12,941 | 12,674 | |
| Installed Summer Demand Reduction (kW) | Total Gross Deemed Demand | 0.0 | 81.4 | 1,957.3 | 2,038.7 |
| | Realization Rate | N/A | 100% | 100% | 100% |
| | Realization Rate Adjustment | 0.0 | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | 0.0 | 81.4 | 1,957.3 | 2,038.7 |
| | Net-to-Gross Ratio | N/A | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | 0.0 | -8.1 | -195.7 | -203.9 |
| | Net Adjusted Demand | 0.0 | 73.3 | 1,761.6 | 1,834.9 |
| | Planned Demand (Net) | 0.0 | 2,555.6 | 2,555.6 | 5,111.3 |
| | Annual % Toward Planned Reduction (Net) | N/A | 2.87% | 68.9% | 35.9% |
| | Avg. Demand per Participant (Gross) | N/A | 11.6 | 17.3 | 17.0 |
| Avg. Demand per Participant (Net) | N/A | 10.5 | 15.6 | 15.3 | |
| Installed | Total Gross Deemed Demand | - | 11.2 | 74.1 | 85.3 |

¹⁹² 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 | 2020 | 2021 | 2022 | Program total (2020–2022) |
|-------------------------------------|---|-------|---------|---------|---------------------------|
| Winter Demand Reduction (kW) | Realization Rate | - | 100% | 100% | 100% |
| | Realization Rate Adjustment | - | 0.0 | 0.0 | 0.0 |
| | Adjusted Gross Demand | - | 11.2 | 74.1 | 85.3 |
| | Net-to-Gross Ratio | - | 90% | 90% | 90% |
| | Net-to-Gross Adjustment | - | -1.1 | -7.4 | -8.5 |
| | Net Adjusted Demand | - | 10.1 | 66.7 | 76.7 |
| | Planned Demand (Net) | - | 334.8 | 334.8 | 669.7 |
| | Annual % Toward Planned Reduction (Net) | - | 3.01% | 19.9% | 11.5% |
| | Avg. Demand per Participant (Gross) | - | 1.6 | 0.7 | 0.7 |
| | Avg. Demand per Participant (Net) | - | 1.4 | 0.6 | 0.6 |
| Program Performance | Cml Annual \$Admin. per Participant (Gross) | N/A | \$3,555 | \$501 | \$501 |
| | Cml Annual \$Admin. per kWh/year (Gross) | N/A | \$0 | \$0.04 | \$0.04 |
| | Cml Annual \$Admin. per kW (Gross) | N/A | \$306 | \$30 | \$30 |
| | Cml Annual \$EM&V per Total Costs (\$) | 90.5% | 30.4% | 22.5% | 22.5% |
| | Cml Annual \$Rebate per Participant (Gross) | N/A | \$1,380 | \$3,417 | \$3,417 |

6.7.3.2 Additional Virginia program data

Figure 6-43 and Figure 6-44 show the program’s participation and gross annualized energy savings, respectively, by measure type and year in Virginia.

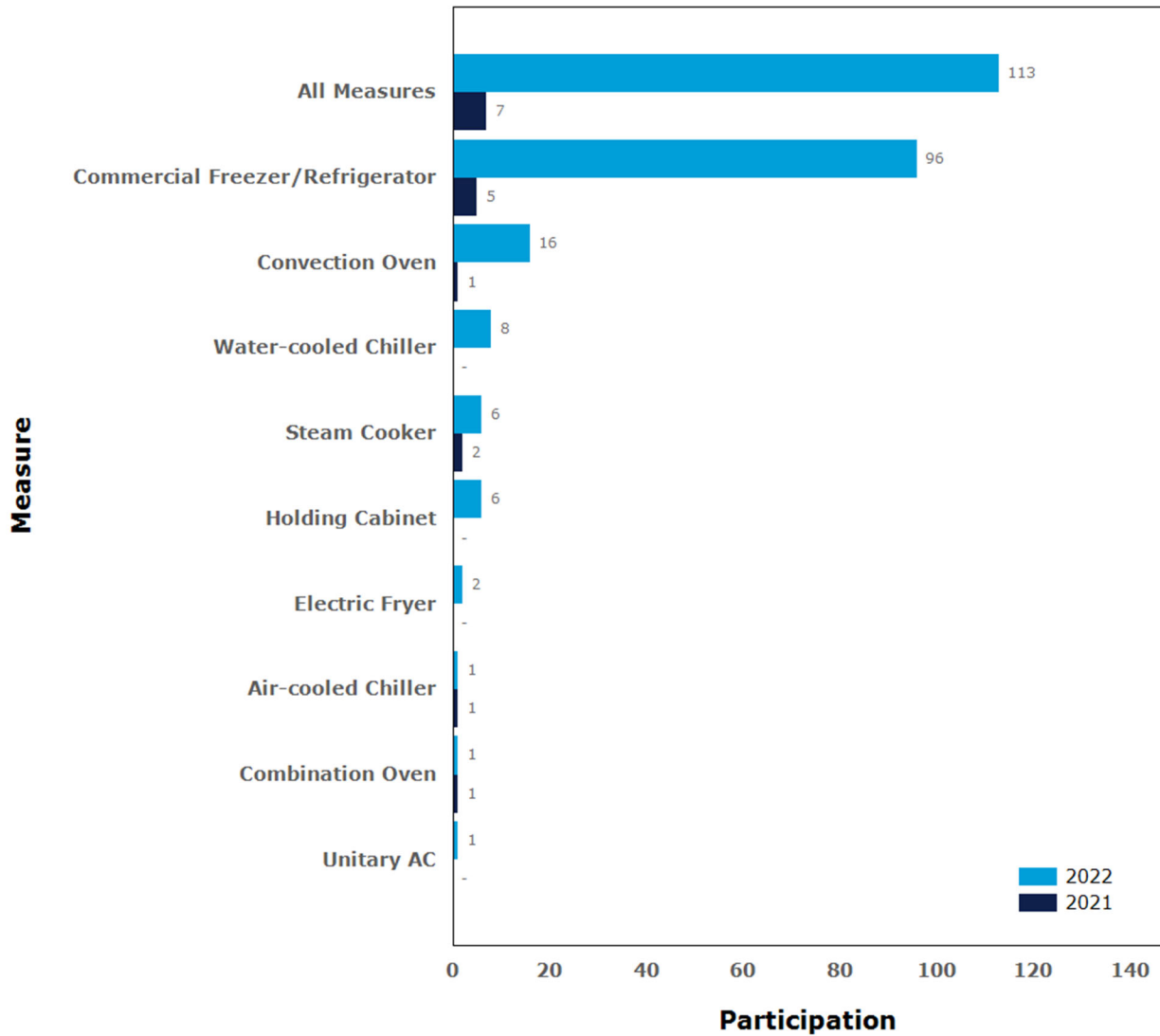
Note that participation in these charts is the count of new unique work orders in the “all measures” presentation of the results. The results by specific measure names count all participants who installed measures in that year, regardless of whether they participated in the program in previous years. This differs from participation count presented in the Key Virginia program data and Key North Carolina program data sections above, where a participant is only counted once, the first time they receive a rebate. After the first time the participant enrolls in a program, future applications are not counted as a new participant, although their savings are counted. Other detailed program participation and savings at the measure level are provided in Appendix O.24.

In 2021, the most frequently purchased products were commercial freezer/refrigerators, which were purchased by 71% of participants, as shown in Figure 6-43. Steam cookers were purchased by 29% of program participants.

In 2022, the most frequently purchased products were also commercial freezer/refrigerators, which were purchased by 85% of participants, as shown in Figure 6-43. Fourteen percent of 2022 program participants also purchased convection ovens.



Figure 6-43. Virginia Non-Residential Midstream Energy Efficiency Products Program participation by measure and year



The program achieved gross annualized energy savings of 65 MWh/year in 2021, as shown in Figure 6-44. Nearly half (46%) of the energy savings came from steam cookers. Steam cookers had a higher per unit savings than commercial freezer/refrigerators, which were the most frequently purchased products.

In 2022, the program achieved gross annualized energy savings of 1,625 MWh/year as shown in Figure 6-44. Over half (53%) of the program energy savings came from water-cooled chillers. These chillers had a higher per unit savings than commercial freezer/refrigerators, which were the most frequently purchased products.



Figure 6-44. Virginia Non-Residential Midstream Energy Efficiency Products Program gross annualized energy savings (MWh/year) by measure and year

