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Demand-Side Management Long-Term Plan

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Table of Contents

Acronyms and Abbreviations ..... **v**

Executive Summary **6**

Planning Process 8

Challenges 9

Overarching Strategy to Achieve Portfolio Objectives 10

Next Steps 12

1. Introduction **13**

1.1. Vision and Goals 13

1.2. Plan Goals and Compliance Paths 14

1.2.1. VCEA Compliance Paths 15

1.2.2. Long Term Plan Savings Goals and Costs Summary 20

1.3. Legislative and Commission Goals and Requirements 24

1.4. Planning Process 26

1.5. Program Accomplishments 31

1.6. Risks, Challenges, and Management Strategies 33

1.6.1. Market Challenges and Management Strategies 34

1.6.2. Regulatory and Statutory Challenges and Management Strategies 38

1.6.3. Operational Challenges and Management Strategies 45

1.7. Overarching Strategy to Achieve Portfolio Objectives 49

2. Residential Sector **53**

2.1. Sector-Level Objectives and Goals 53

2.2. Sector-Level Profile 54

2.3. Sector-Level Strategies 56

2.3.1. Residential Energy Services Program 56

2.3.2. Residential Efficient Products Program 61

2.3.3. Residential New Construction Program 66

3. Income and Age Qualified Sector **69**

3.1. Sector-Level Objectives and Goals 69

3.2. Sector-Level Profile 70

3.3. Sector-Level Strategies 73

3.3.1. Income and Age Qualified Program 73
4. Nonresidential Sector 79
4.1. Sector-Level Objectives and Goals 79
4.2. Sector-Level Profile 80
4.3. Sector-Level Strategies 82
4.3.1. Large Business Solutions Program 82
4.3.2. Small Business Solutions Program 89
4.3.3. Nonresidential New Construction Program 95
5. Marketing, Education, and Training 99
5.1. Overview 99
5.2. Marketing Strategy 99
5.2.1. General Awareness Portfolio Marketing 100
5.2.2. Program Marketing 100
5.3. Education and Training 101
5.3.1. Customer Education 102
5.3.2. Trade Ally Training, Education, and Recruitment 103
6. Future Considerations for Dominion Energy 105
7. Next Steps 110
7.1. Recommendations for Achieving Objectives 111
7.1.1. Short-Term Recommendations (2021 to 2023) 111
7.1.2. Medium-Term Recommendations (2024 and 2025) 114
7.1.3. Long-Term Recommendations (2026 and beyond) 116
7.2. Progress Metrics for Long-Term Plan 117
Appendix A. Measure Level Savings, Participation, and Incentive Levels A-1
Appendix B. Proposed Program Bundles B-1
Appendix C. Residential Survey Report C-1
Appendix D. Nonresidential Survey Report D-1

Tables

Table ES-1. Virginia Clean Economy Act Energy Savings Requirements 6
Table ES-2. Estimated Savings and Investment to Achieve VCEA Goals (Gross and Net) 7
Table ES-3. Proposed Demand-Side Management Portfolio Structure 11
Table 1. Virginia Clean Economy Act Energy Savings Requirements 15
Table 2. Long-Term Plan Gross Savings Track A: Estimated Savings and Costs Summary by Year 15
Table 3. Long-Term Plan Net Savings Track B: Estimated Savings and Costs Summary by Year 16
Table 4. Summary of Gross Savings (Track A): Sector-Level Gross Savings and Investments, 2022–2025 19
Table 5. Summary of Net Savings (Track B): Sector-Level Net Savings and Investments, 2022–2025 20
Table 6. Long-Term Plan Gross Savings: Estimated Portfolio Costs Summary by Year 21
Table 7. Long-Term Plan Gross Savings: Estimated Portfolio Savings Summary by Year 22
Table 8. Long-Term Plan Net Savings: Estimated Portfolio Savings Summary by Year 23
Table 9. Summary of Benefit-Cost Screening Results by Program, Track A 24
Table 10. Portfolio-Level Challenges and Management Strategies 47
Table 11. Residential Sector Annual Estimated Gross Savings and Budget 53
Table 12. Residential Sector Annual Estimated Net Savings and Budget 54
Table 13. Residential Energy Services Program Customer Eligibility Parameters 58
Table 14. Residential Energy Services Annual Estimated Program Budget and Gross Impacts 60
Table 15. Residential Energy Services Annual Estimated Program Budget and Net Impacts 60
Table 16. Residential Energy Services Program Cost-Effectiveness Summary 61
Table 17. Residential Efficient Products Program Customer Eligibility Parameters 62
Table 18. Residential Efficient Products Program Annual Estimated Budget and Gross Impacts 65
Table 19. Residential Efficient Products Program Annual Estimated Budget and Net Impacts 65
Table 20. Residential Efficient Products Program Cost-Effectiveness Summary 66
Table 21. Residential New Construction Program Customer Eligibility Parameters 66
Table 22. Residential New Construction Program Estimated Annual Budget and Gross Impacts 68
Table 23. Residential New Construction Program Estimated Annual Budget and Net Impacts 68
Table 24. Residential New Construction Program Cost-Effectiveness Summary 68
Table 25. Income and Age Qualified Sector Annual Estimated Gross Savings and Budget 69
Table 26. Income and Age Qualified Sector Annual Estimated Net Savings and Budget 70
Table 27. Income and Age Qualified Program Customer Eligibility Parameters 75
Table 28. Income and Age Qualified Program Annual Estimated Budget and Gross Impacts 78
Table 29. Income and Age Qualified Program Annual Estimated Budget and Net Impacts 78

Table 30. Income and Age Qualified Program Cost-Effectiveness Summary 78
Table 31. Nonresidential Sector Annual Estimated Gross Savings and Budget 80
Table 32. Nonresidential Sector Annual Estimated Net Savings and Budget 80
Table 33. Large Business Solutions Program Eligibility Parameters 84
Table 34. Large Business Solutions Program Estimated Annual Budget and Gross Impacts 88
Table 35. Large Business Solutions Program Estimated Annual Budget and Net Impacts 89
Table 36. Large Business Solutions Program Cost-Effectiveness Summary 89
Table 37. Small Business Solutions Program Customer Eligibility Parameters 91
Table 38. Small Business Solutions Program Estimated Annual Budget and Gross Impacts 94
Table 39. Small Business Solutions Program Estimated Annual Budget and Net Impacts 95
Table 40. Small Business Solutions Program Cost-Effectiveness Summary 95
Table 41. Nonresidential New Construction Program Customer Eligibility Parameters 96
Table 42. Nonresidential New Construction Program Estimated Annual Budget and Gross Impacts 98
Table 43. Nonresidential New Construction Program Estimated Annual Budget and Net Impacts 98
Table 44. Nonresidential New Construction Program Cost-Effectiveness Summary 98
Table 45. Strategic Objectives and Progress Metrics 117

Figures

Figure ES-1. Estimated Savings by Source and Investment to Achieve VCEA Goals (Gross and Net) 8
Figure 1. Dominion Energy's Track A Path to Virginia Clean Economy Act: Gross Savings 17
Figure 2. Dominion Energy's Track B Path to Virginia Clean Economy Act: Net Savings 18
Figure 3. Long-Term Plan Development Process 27
Figure 4. Demand-Side Management Program History 33
Figure 5. Proposed Demand-Side Management Portfolio Structure 51
Figure 6. Residential Survey Respondent Demographics 55
Figure 7. Average Energy Burden (based on percentage of income) for Counties in Virginia 71
Figure 8. Income and Age Qualified Survey Respondent Key Household Characteristics 72
Figure 9. Nonresidential Survey Respondent Characteristics 81
Figure 10. States with Comprehensive Greenhouse Gas Reduction Policies 108
Figure 11. Proposed Phase Timeline 111

Acronyms and Abbreviations

Acronym	Definition
AMI	Advanced metering infrastructure
DSM	Demand-side management
EM&V	Evaluation, measurement, and verification
GHG	Greenhouse gas
GTSA	Grid Transformation and Security Act
HERS	Home Energy Rating System
IAQ	Income and age qualified
KPI	Key performance indicator
mCO2e	Metric tons of carbon dioxide–equivalent emissions
Plan	Demand-side management long-term plan
SCC	Virginia State Corporation Commission
VCEA	Virginia Clean Economy Act

Executive Summary

To assist Dominion Energy Virginia (Dominion Energy or the Company) with planning to meet legislative requirements outlined in the 2018 Grid Transformation and Security Act (GTSA) and the Virginia Clean Economy Act (VCEA), Cadmus developed a long-term Plan (also referred to as the Plan) outlining a framework for its customer-facing demand-side management (DSM) programs and a path to transition its existing operating environment to achieve its goals. This Plan is the culmination of extensive research, stakeholder input, and quantitative analysis, which Cadmus used to outline a streamlined, cost-effective DSM program structure and recommend additional actions. This structure consolidates Dominion Energy's existing portfolio of DSM programs into a more cohesive set of offerings to help its customers install energy efficiency upgrades in their homes and businesses. Cadmus analyzed the potential energy savings impacts of transitioning to this proposed program structure, combined with implementing a broad customer awareness campaign, on Dominion Energy's ability to achieve its targets.

The VCEA requires Dominion Energy to achieve 5% cumulative[1] energy savings, with 1.25% annual targets from 2022 through 2025, based on the Company's 2019 jurisdictional retail electric sales (68,231,332 MWh), as shown in Table ES-1.

Table ES-1. Virginia Clean Economy Act Energy Savings Requirements

	2022	2023	2024	2025
VCEA Cumulative Savings Requirement (%)	1.25%	2.5%	3.75%	5%
Dominion's VCEA Energy Savings Targets (MWh/yr)	852,892	1,705,783	2,558,675	3,411,567

To forecast energy savings impacts, Cadmus conducted a modeling analysis that accounts for (1) persistent savings resulting from historical program activities and forecasted savings from recently approved DSM Phase IX programs and proposed DSM Phase X programs, (2) estimated contributions from redesigned DSM programs and increased portfolio marketing and outreach investments recommended in this Plan, and (3) contributions from voltage optimization initiatives and self-directed savings from large commercial opt-out customers toward the Company's statutory goals.[2]

Because the VCEA does not specify whether energy savings targets need to be met with gross or net savings, Cadmus modeled two scenarios to demonstrate the difference in cost requirements to achieve the VCEA annual targets. Cadmus determined that Dominion Energy can likely achieve the VCEA's goals

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1 Cumulative annual savings represent the sum of annual program savings over the program measures' lifetimes (i.e., persistent or lifetime savings). Incremental savings represent the first-year program savings.

2 Pursuant to Virginia Code § 56-585.1 A 5 c savings from large general service customers shall be accounted for in the utility reporting in the standards in Virginia Code § 56-596.2.

for 2025 (with a nominal 7% buffer) under a gross savings scenario (Track A) through continued delivery of its existing and planned DSM programs if it is able to accelerate program participation by restructuring its DSM program portfolio and increasing customer awareness efforts. Achieving the VCEA goals under a net savings scenario (Track B), however, would be significantly more challenging and require the Company to increase incentives across all sectors and programs, make substantial additional investments in implementation support, and further expand its planned marketing and outreach activities. Even with the additional investment of nearly $132 million (in customer dollars) over four years, it is not clear whether achieving the VCEA's 2025 goals with net savings will be possible under Dominion Energy's current regulatory structure and market environment, with only a few years remaining.

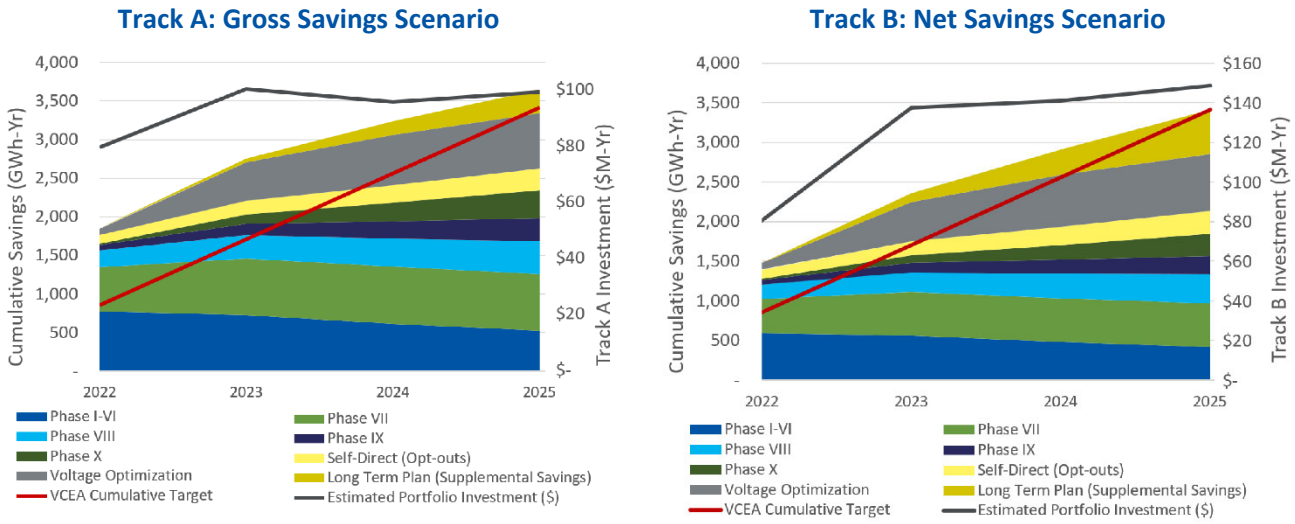
To minimize costs, Cadmus modeled the Track B scenario to achieve the VCEA more precisely than we modeled the Track A scenario (allowing for a more limited savings buffer). However, the small savings buffer creates potential risk for the Company if market conditions change substantially over the next four years. Table ES-2 summarizes estimated costs, savings, and VCEA compliance against the annual cumulative targets in both the net and gross savings scenarios.

Table ES-2. Estimated Savings and Investment to Achieve VCEA Goals (Gross and Net)

	2022	2023	2024	2025	Total
Track A: Gross Savings Scenario					
Estimated Portfolio Investment ($)	$79,721,288	$100,489,522	$95,993,546	$99,438,197	$375,642,553
Estimated Total Cumulative Electric Savings (MWh/yr)	1,848,688	2,751,051	3,234,276	3,651,298	N/A
VCEA Target (MWh/yr)	852,892	1,705,783	2,558,675	3,411,567	N/A
Progress to VCEA (%)	217%	161%	126%	107%	N/A
Track B: Net Savings Scenario					
Estimated Portfolio Investment ($)	$80,439,496	$137,426,470	$141,105,039	$148,630,820	$507,601,824
Estimated Total Cumulative Electric Savings (MWh/yr)	1,476,229	2,358,364	2,906,764	3,411,844	N/A
VCEA Target (MWh/yr)	852,892	1,705,783	2,558,675	3,411,567	N/A
Progress to VCEA (%)	173%	138%	114%	100%	N/A

Figure ES-1 outlines the forecasted savings by source and the investment required for Dominion Energy to achieve the VCEA goals under each scenario (Track A and Track B).

Figure ES-1. Estimated Savings by Source and Investment to Achieve VCEA Goals (Gross and Net)



Given the substantial differences in acquisition costs by program and cumulative customer investment between compliance scenarios, Track A is the preferred path. Accordingly, the remainder of this Plan presents data according to this preferred path (Track A). Although the VCEA targets are based on cumulative savings through 2025, this Plan is responsive to guidance from the Virginia State Corporation Commission (SCC) that requires it to include program savings and budgets for the five-year period beginning January 2022.[3] Accordingly, the remainder of Cadmus' analysis is based on the period from 2022 through 2026.

Planning Process

Developing Dominion Energy's long-term Plan was a significant undertaking that included primary and secondary research, analysis, and modeling over the course of nearly one year. This work entailed several key tasks:

- Literature data review of legislative and regulatory dockets, testimony, and SCC orders, as well as of Company–specific program information and the potential study conducted by the Company's external evaluator.
- Benchmarking of a broad range of metrics using data from more than 19 investor-owned utilities across the U.S.
- Primary data collection including external stakeholder surveys and interviews (many of these stakeholders are actively engaged in the independent monitor-led DSM stakeholder meetings), internal stakeholder interviews (with Dominion Energy staff and implementation vendors), and residential and nonresidential customer surveys.

[3] Virginia State Corporation Commission. September 7, 2021, *Final Order in Case No. PUR-2020-00274 and October 18, 2021, Preliminary Order in Case No. PUR-2021-00247.*

- Gap analysis to identify energy conservation measures with remaining potential that were not represented in Dominion Energy's existing programs.
- Assessment of the current landscape to characterize the Company's current and planned DSM programs.
- Development of program concepts that mapped stakeholders' key objectives, customer characteristics, and Dominion Energy's existing programs to an overarching portfolio strategy representing a logical customer journey and DSM program best practices.
- Scenario modeling and forecasting to identify savings pathways sufficient to achieve the VCEA targets under gross and net savings scenarios and to provide reasonable cost estimates of each path.

Challenges

Dominion Energy faces a range of market and regulatory risks and challenges to achieving its energy savings targets as required under the VCEA:

- **Limited Customer Awareness.** Cadmus' customer research revealed that both residential and business customers have low awareness of the Company's DSM programs compared to awareness among customers of utilities in other jurisdictions. This low awareness, coupled with high levels of interest for participating in energy efficiency, indicates an opportunity to increase program participation and boost energy savings.
- **Declining Potential.** As is the case with utilities across the U.S., the Company's energy efficiency potential is declining. Low avoided energy and capacity costs, rapid transformation of the lighting market, increases in equipment and building minimum performance standards, and the effects of a shift from summer to winter peak demand all impact economically achievable potential in Dominion Energy's service territory.
- **Regulatory Filing Cadence.** A historical precedent to file new programs each year has resulted in a large portfolio of narrowly focused programs and contributed to a resource intensive environment.
- **Lack of Budget Flexibility.** Dominion Energy's filed program budgets, once approved, become budget caps. Within a given phase, based on recent SCC orders, the Company can shift funds between program years but may not shift funds between programs or increase its budget to manage costs without submitting a specific request for approval to extend or replace the program. This substantially limits the Company's flexibility to optimize its programs and portfolio for energy savings impact and can be disruptive to the continuity of successful programs.
- **Compliance Uncertainty.** Lack of regulatory clarity on whether utilities must achieve the VCEA goals with gross or net savings creates significant uncertainty and hinders Dominion Energy's ability to appropriately plan its portfolio. With only four years remaining to achieve the VCEA goals, coupled with a long regulatory filing and approval cycle and inflexible program expiration dates and budget caps, the Company will have a limited ability to adjust if the SCC determines that net savings are required to meet goals.

- **Cost-Effectiveness Rules**. DSM programs in Virginia (except those serving income-qualified customers) that pass three of four cost-effectiveness tests are considered "in the public interest." Strict adherence to this standard may limit Dominion Energy's ability to invest in programs that may be beneficial for customers and catalyze their participation in higher-impact programs, or to invest in common offerings that may be necessary to achieve its aggressive energy conservation goals.
- **Changing Eligibility Requirements.** Rules exempting certain large customers from participating in DSM from 2018 to 2020 led to gaps in marketing and program offerings for those customers. This likely contributed to low awareness of Dominion Energy programs. While the Company has since added some targeted offerings for its largest business customers, these programs have yet to reach full maturity. Furthermore, the Company presently lacks a large commercial Custom program – a program design that typically provides substantial energy savings among utilities in other jurisdictions.
- **Need for Enhanced Program Information**. Although not required to evaluate Dominion Energy's portfolio results, it may benefit program performance for the Company to conduct objective research that informs how its programs function in local markets, why they may or may not be achieving goals, or the extent to which they influence customer behaviors. Targeted process evaluations of high-priority programs would help Dominion Energy to optimize its programs and continually improve their effectiveness.[4]
- **Existing Vendor Contracts Not Aligned with Streamlined Portfolio**. Dominion Energy currently administers separate implementation vendor contracts for each of its 37 existing and planned DSM programs. Each contract has a different period of performance and varying expiration dates ranging from 2022 to 2027, which align with the pertinent regulatory approval periods for each program. Maintaining the integrity of these contracts is important, not only to the Company's operational efficiency and reputation, but also to its implementation vendors' businesses. Thus, while restructuring the existing programs into a more streamlined portfolio can provide administrative efficiencies, the Company should continue to administer its existing vendor contracts for each bundled program until it can align the periods of performance by the end of 2027.

This long-term Plan was developed to identify potential resolutions to several of these challenges and to enable Dominion Energy to achieve its regulatory goals under the VCEA.

Overarching Strategy to Achieve Portfolio Objectives

Cadmus' recommendations in the long-term Plan are focused on three general strategies: restructure the portfolio, increase program awareness, and create a continuous improvement framework.

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[4] The scope of process evaluations broadly includes not only a review of program operations, but also an objective assessment of the effectiveness of a particular program design and its market impacts. This includes, for example, effects on customers' awareness and behaviors and on market actors' motivations.

Restructure the Portfolio by consolidating Dominion Energy's existing 37 programs into seven overarching programs designed around a logical customer journey. Cadmus recommends offering three residential programs, one income- and age-qualified program, and three nonresidential programs, each with multiple ways in which customers can engage with efficiency. Table ES-3 outlines the proposed program structure.

Table ES-3. Proposed Demand-Side Management Portfolio Structure

Sectors	Programs	Components	Pathways
Residential	Residential Efficient Products program	Efficient Products	• Upstream/Marketplace • Midstream Incentives • Downstream Rebates
		Energy Efficient Kits	
	Residential Energy Services program	Home Assessments and Direct Install	• Online Assessment • Walk-through Assessment • Diagnostic Audit
		Appliance Recycling	
		Customer Engagement	
	Residential New Construction program		
Income and Age Qualified	Income and Age Qualified program	Home Assessments and Direct Install	
		Customer Engagement	
		Nonresidential Facilities	
Nonresidential	Small Business Solutions program	Audit, Direct Install, and Enhanced Rebates	
		Prescriptive Rebates	• Downstream Rebates • Midstream Rebates
		Building Optimization	
		Customer Engagement	
	Large Business Solutions program	Custom Rebates	• Feasibility Assessment • Custom Projects • Strategic Energy Management • Building Optimization
		Facility Audit	
		Prescriptive Rebates	• Downstream Rebates • Midstream Rebates
	Nonresidential New Construction program		

Note: In addition to the customer-facing programs outlined, Dominion Energy will propose a Voltage Optimization program in its Phase X DSM filing as part of its strategy to achieve VCEA goals.

This consolidated program structure is intended to help Dominion Energy overcome its key challenges and create a path to achieve its VCEA goals through several associated benefits:

- Larger, consolidated programs with associated larger budgets will give Dominion Energy greater flexibility to allocate funds within programs to its most effective program component offerings.
- Implementation vendors and trade allies will be better able to educate and promote intra-program opportunities for customers who are interested in achieving deep energy savings.
- Broader programs can accommodate measures with lower cost-effectiveness by combining them with elements that have higher cost-effectiveness.
- Over time, broader programs with larger budgets and continuous operations (e.g., no expiration dates until discontinuation is proposed by Dominion Energy or they are found to be not cost

effective) could reduce staff burden through a less frequent regulatory filing schedule and more efficient program management.

- The proposed structure will enable the Company to integrate a custom program offering for its large nonresidential customers in its Phase XI filing. Custom programs can be a significant source of energy savings for customers and for Dominion Energy.

Increase Program Awareness by (1) launching a general awareness portfolio marketing campaign that aims to educate customers about the availability of Dominion Energy's programs and that complements its existing program-level marketing efforts; (2) educating customers about the benefits of energy efficiency, ways to save energy, and resources available to help them take action; and (3) offering expanded trade ally training, education, and recruitment so that trade allies act as program ambassadors and leverage Dominion Energy's programs to enhance their own sales efforts.

Create a Continuous Improvement Framework to assess, improve, and track the effectiveness of the programs' design and delivery. This will help Dominion Energy optimize its programs over time. Engaging with an objective evaluator to conduct targeted process evaluations of the programs with the greatest impact, uncertainty, and customer effects is a best practice that can lead to actionable recommendations for program improvement.

Next Steps

This long-term Plan outlines a strategic roadmap for Dominion Energy to achieve the goals for energy savings as set forth in the VCEA. Cadmus developed several recommendations to help the Company operationalize the short- and medium-term program design and delivery adjustments outlined in this Plan and to prepare for a longer-term future with a greater focus on grid stabilization and resiliency, integrated DSM, and addressing the climate policy goals of the Commonwealth. Recommendations are outlined for near-term (2022 and 2023), medium-term (2024 and 2025), and long-term (2026 and beyond) regulatory and operational steps the Company can take to transition its existing portfolio into one that offers a more streamlined energy efficiency path for its customers, reduces its staff burden and resource constraints, and produces greater energy savings, environmental benefits, and economic impacts for the state of Virginia.

1. Introduction

Dominion Energy began providing its customers with regulated energy efficiency opportunities in 2009. In 2018, the Virginia legislature passed the GTSA, which establishes investment requirements for grid modernization and the expansion of DSM initiatives. In 2020 the Virginia legislature passed the VCEA, establishing aggressive energy savings targets. Together, these legislative mandates establish a framework for Virginia utilities to take a more active and focused approach to capturing energy savings through their customer-facing DSM programs. Building on over a decade of commitment, the Company contracted with Cadmus to develop a DSM long-term Plan that (1) provides a roadmap for achieving the statutory goals in the VCEA over the next four years, (2) creates additional customer value and an improved program experience, (3) provides strategies that address market and regulatory challenges, and (4) considers internal and external stakeholder priorities and input.

This Plan is divided into seven sections:

- **Section 1 Introduction** is an overview of the Company's vision and goals as well as legislative and regulatory energy savings targets and requirements; an overview of the long-term planning process; a summary of the Company's accomplishments to date and the challenges it may face in achieving its targets, along with possible strategies to overcome those challenges; and an overarching strategy summary.
- **Sections 2 through 4 Sector and Program Summaries** provide sector-level objectives and goals, customer profiles, and strategies and implementation plans for a set of comprehensive programs within each sector (including program-level objectives, target customer and eligibility requirements, eligible measures and incentives, implementation and marketing strategy, estimated participation and energy impacts, and cost-effectiveness).
- **Section 5 Marketing, Education, and Training** provides an overview of best practice approaches to DSM portfolio and program marketing and outreach as well as how education and training initiatives can be used to supplement and strengthen the general marketing strategy.
- **Section 6 Future Considerations for Dominion Energy** outlines longer-term market trends, potential industry disruptions, and sources of uncertainty in the period beyond the VCEA's culmination that could impact the Company and should be considered as it transitions toward its broader sustainability objectives.
- **Section 7 Next Steps** outlines steps for achieving short-, medium-, and long-term goals as defined in this Plan and discusses the future for Dominion Energy.

1.1. Vision and Goals

Dominion Energy's overarching vision is to achieve net zero greenhouse gas (GHG) emissions by 2050. In service of this vision, the Company is dedicated to delivering reliable and affordable clean energy, protecting the environment, serving customers and communities, empowering people with energy saving opportunities, and creating value for shareholders. Through an ongoing engagement process, the Company's external stakeholders have articulated perspectives and priorities that largely align with those of the Company.

This Plan outlines a strategic path to help the Company achieve compliance with its legislative targets and requirements and accomplish its stakeholder and corporate objectives:

- Deliver a streamlined energy efficiency program portfolio using a customer-sector approach (serving the residential, income-qualified, and small and large nonresidential sectors) that creates value and provides a unified, positive customer experience.
- Enhance program comprehensiveness by offering broad, overarching programs that span end uses, consolidate administrative functions, and are flexible to allow the Company to control the pace of programs if customer preferences or market conditions change.
- Provide a strategic program plan (including measures, incentives, eligibility, engagement strategies, benefits, and costs) that helps Dominion Energy overcome its unique challenges and establish a path to achieving significant energy savings and environmental benefits through:
  - Expanded offerings to income-qualified and large nonresidential customers,
  - Enhanced marketing and outreach strategy to increase program awareness across customer segments,
  - Energy efficiency education and information resources that encourage customers to take a more comprehensive, holistic approach to saving energy,
  - Continued and expanded focus on building an effective trade ally network that stocks efficient equipment and promotes Dominion Energy's programs, and
  - Focused attention on improving program performance, maximizing energy savings potential, and providing continuous improvement.
- Establish a framework for identifying, validating, and integrating new technologies and innovative program delivery strategies into the portfolio.
- Create a transition plan for Dominion Energy to shift from a large portfolio of narrowly focused programs and an annual filing cadence to a smaller number of broad programs approved for multiple years that will be less onerous to maintain and update.

The portfolio presented in this Plan offers Dominion Energy customers a cost-effective,[5] flexible, and comprehensive set of programmatic choices, incentives, information, and educational opportunities. The programs are described by customer sector (residential, income qualified, and nonresidential) in chapter 2 through chapter 4.

1.2. Plan Goals and Compliance Paths

The VCEA requires Dominion Energy to achieve 5% cumulative energy savings, with 1.25% annual targets from 2022 through 2025, based on the Company's 2019 retail electric sales (68,231,332 MWh). Achievement of the VCEA reflects persistent cumulative total savings accrued from measures claimed

[5] Cost-effectiveness is based on screening criteria from the Participant Cost Test, Utility Cost Test, Ratepayer Impact Measure Test, and Total Resource Cost Test as defined in the California Standard Practice Manual.

through DSM programs in prior years, through 2025. The overall VCEA requirements are shown in Table 1.

Table 1. Virginia Clean Economy Act Energy Savings Requirements

	2022	2023	2024	2025
VCEA Cumulative Savings Requirement (%)	1.25%	2.5%	3.75%	5%
Dominion's VCEA Energy Savings Targets (MWh/yr)	852,892	1,705,783	2,558,675	3,411,567

1.2.1. VCEA Compliance Paths

This Plan outlines a portfolio of seven comprehensive DSM programs that together are estimated to achieve Dominion Energy's VCEA savings targets by the end of 2025. Cadmus analyzed two savings paths—Track A is based on achieving the VCEA with gross savings (associated with total *customer* savings) and Track B is based on achieving the VCEA with net savings (associated with Dominion Energy's net *system* savings)—each with detailed estimates of associated customer investment requirements. As detailed in Table 2, achieving gross savings sufficient to meet the VCEA targets would require a four-year (2022-2025) investment of approximately $376 million, resulting in 3,651,298 megawatt hours (MWh) of cumulative lifetime energy savings as well as 1.4 million cumulative lifetime metric tons of carbon dioxide equivalent (mCO2e) reduction in GHG emissions. The average annual coincident peak demand reduction from 2022 to 2025 is 87 MW.

Table 2. Long-Term Plan Gross Savings Track A: Estimated Savings and Costs Summary by Year

	2022	2023	2024	2025	Total [d]
Portfolio Investment ($)	$79,721,288	$100,489,522	$95,993,546	$99,438,197	$375,642,553
Income-Qualified Investment ($) [a]	$14,224,459	$15,393,890	$15,394,165	$15,410,049	$60,422,563
Incremental Program Savings (MWh/yr) [b]	376,344	491,185	399,618	423,216	1,619,436
Other Savings (MWh/yr) [c]	1,472,344	2,277,857	2,852,322	3,263,353	N/A
Cumulative Electric Savings (MWh/yr)	1,848,688	2,751,051	3,234,276	3,651,298	N/A
Progress to VCEA (%)	217%	161%	126%	107%	107%
Peak Demand Reduction (MW)	80	97	84	86	N/A
GHG Reduction (mCO2e/yr)	322,730	421,211	342,688	362,924	1,388,731

Note: Although the Virginia SCC Final Order approving Dominion Energy's 2020 DSM update requires a long-term Plan to provide "proposed Program savings and budgets for the five-year period beginning January 1, 2022,…" this table is intended to outline costs and savings to achieve VCEA compliance; therefore, the data presented here is for the period 2022-2025

[a] Income-qualified investments refer to Dominion Energy's prospective IAQ program budgets, which correlate to the VCEA's budgeting provisions for programs designed to benefit income-qualified and disabled individuals or veterans.

[b] This table total represents the incremental sum of values that include considerations of attrition from prior installed measures.

[c] Other savings includes residual program savings from prior DSM phases, savings from voltage optimization, and self-directed savings from large commercial opt-out customers.

[d] Totals may not sum due to rounding.

Dominion Energy's ability to achieve the VCEA target with net savings (Track B) is significantly influenced by market and other challenges outlined in section 1.6 of the long-term Plan. As indicated in Table 3, achieving net savings sufficient to meet the VCEA targets would require an estimated minimum $508 million investment, resulting in 3,411,844 MWh of cumulative lifetime energy savings in 2025, and 1.4

million cumulative mCO2e reduction in GHG emissions. The average annual coincident peak demand reduction from 2022 to 2025 is 85.5 MW.

Table 3. Long-Term Plan Net Savings Track B: Estimated Savings and Costs Summary by Year

	2022	2023	2024	2025	Total [d]
Portfolio Investment ($)	$80,439,496	$137,426,470	$141,105,039	$148,630,820	$507,601,824
Income-Qualified Investment ($) [a]	$14,247,391	$22,464,353	$22,731,453	$22,990,332	$82,433,530
Incremental Electric Savings (MWh/yr) [b]	301,432	452,954	432,504	481,054	1,594,664
Other Savings (MWh/yr) [c]	1,174,797	1,923,372	2,492,390	2,967,978	N/A
Cumulative Electric Savings (MWh/yr)	1,476,229	2,358,364	2,906,764	3,411,844	N/A
Progress to VCEA (%)	173%	138%	114%	100%	100%
Peak Demand Reduction (MW)	64	91	90	97	N/A
GHG Reduction (mCO2e/yr)	258,490	388,426	370,889	412,523	1,367,487

Note: Although the Virginia SCC Final Order approving Dominion Energy's 2020 DSM update requires a long-term Plan to provide "proposed Program savings and budgets for the five-year period beginning January 1, 2022,…" this table is intended to outline costs and savings to achieve VCEA compliance; therefore, the data presented here is for the period 2022-2025.

[a] Income-qualified investments refer to Dominion Energy's prospective IAQ program budgets, which correlate to the VCEA's budgeting provisions for programs designed to benefit income-qualified and disabled individuals or veterans.

[b] This table total represents the incremental sum of values that include considerations of attrition from prior installed measures.

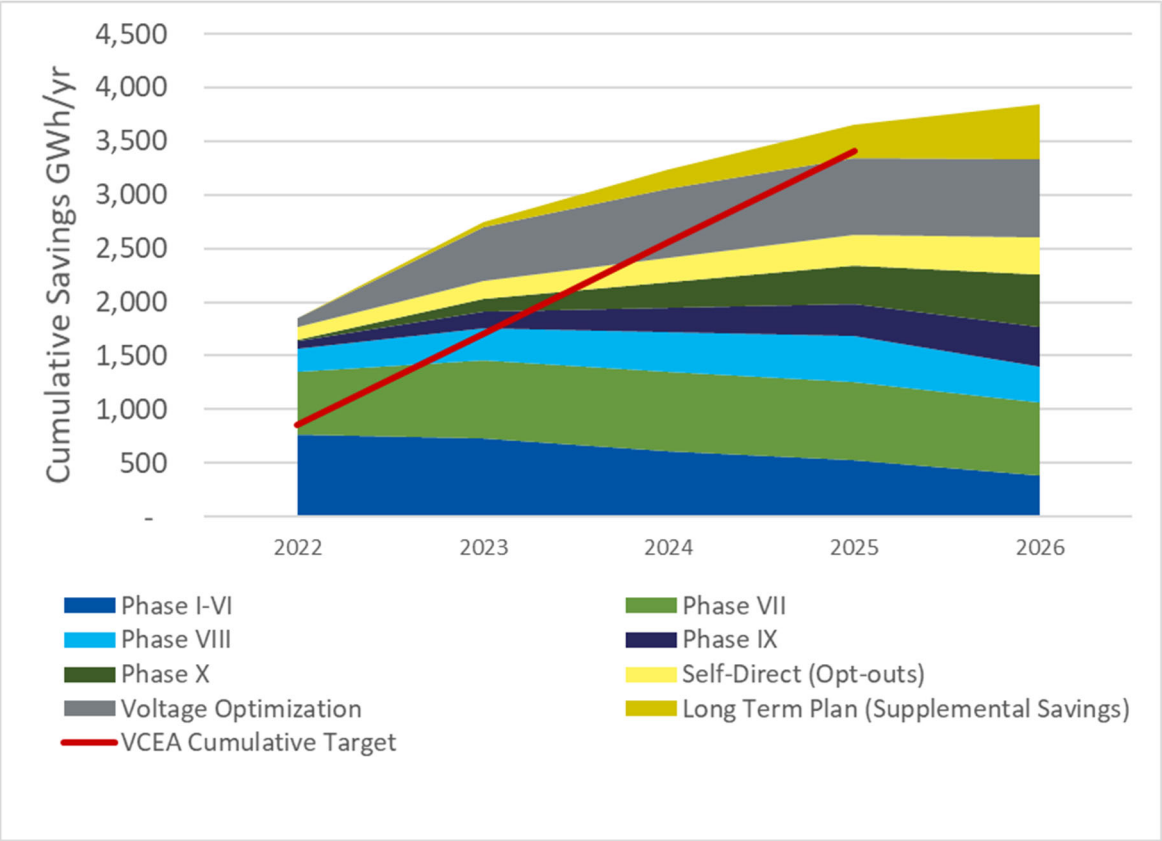
[c] Other savings includes residual program savings from prior DSM phases, savings from voltage optimization, and self-directed savings from large commercial opt-out customers.

[d] Totals may not sum due to rounding.

Figure 1 outlines forecasted gross savings (Track A) by source under Dominion Energy's current regulatory structure and market environment and Figure 2 outlines forecasted net savings (Track B) by source under Dominion Energy's current regulatory structure and market environment. In each figure, savings sources include (1) persistent savings resulting from historical program activities and forecasted savings from recently approved DSM Phase IX programs and proposed DSM Phase X programs, (2) estimated contributions from redesigned (and currently active) DSM programs and increased portfolio marketing and outreach investments recommended in this Plan, and (3) contributions from voltage optimization initiatives and self-directed savings from large commercial opt-out customers (which the VCEA states shall be accounted for in the Company's reporting in the statutory goals).

Figure 1 shows Cadmus' modeled projections for Track A, achieving gross savings equivalent to the VCEA targets by the end of 2025. As shown, Dominion Energy can nearly achieve the VCEA targets via Track A by leveraging its existing and planned programs. The supplemental savings generated by implementing the recommendations in this Plan are expected to enable Dominion Energy to reach the target and provide a nominal buffer to weather potential market uncertainties such as unexpected changes to equipment standards or supply disruptions.

Figure 1. Dominion Energy's Track A Path to Virginia Clean Economy Act: Gross Savings



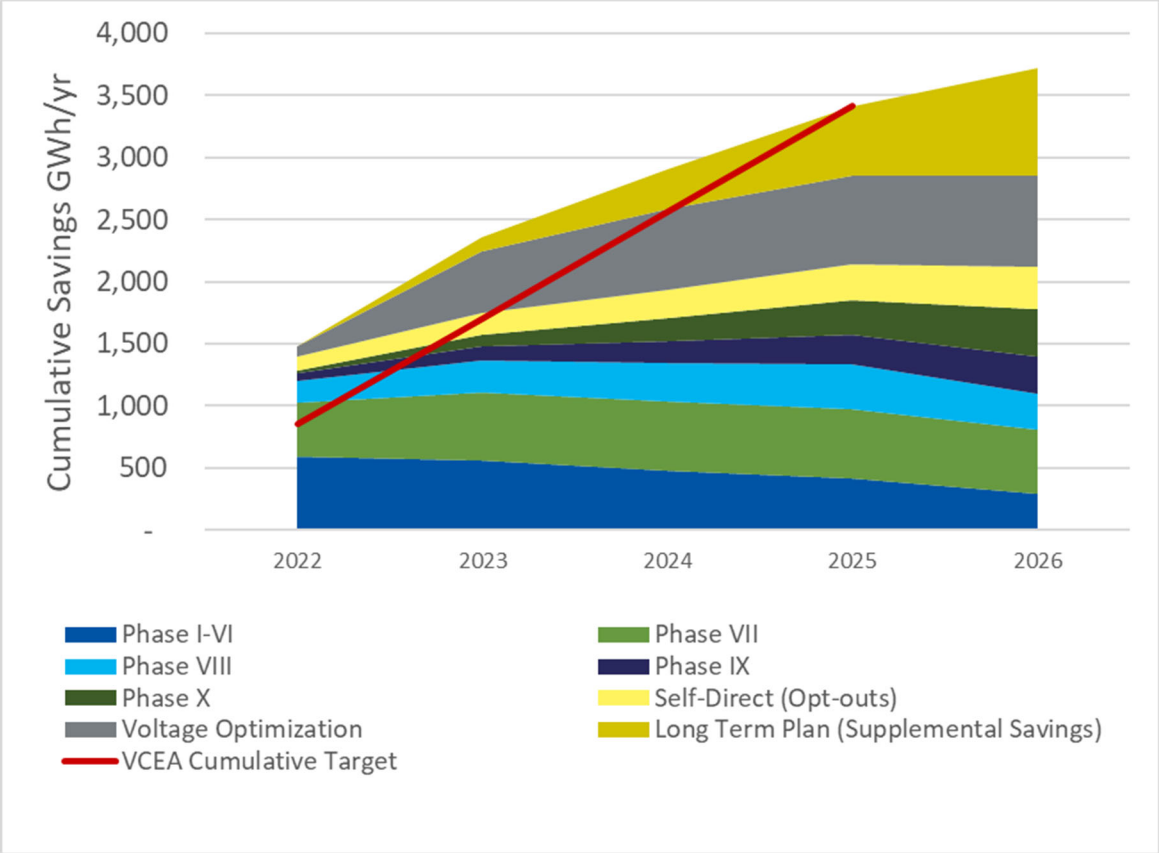
Reaching the cumulative VCEA goal by 2025 based on net savings (Track B) would require the Company to increase its investment in DSM by approximately $132 million over the compliance period (a 35% increase) above the Track A scenario. The Company would need to increase participation in most programs since no single program could be expanded to the extent needed to meet the VCEA targets with net savings. Cadmus modeled a scenario in which the Company increased investments and participation in the IAQ program by roughly 50%, expanded residential behavioral component participation by 25% per year, increased appliance recycling participation by 75%, expanded residential audit and direct install component participation by roughly 125%, increased participation in nonresidential custom[6] and building optimization by 35%, increased small business participation by roughly 125%, and increased overall downstream, midstream, and marketplace component participation by 135%. To drive the higher participation needed to meet a net savings target, Cadmus projected an adoption rate tied to increasing investment in incentives sufficient to drive the participation levels needed and expanding the Company's investment into marketing and outreach beyond that which is already planned. However, since budget caps and incentive levels may not be

[6] Dominion Energy does not presently offer a nonresidential Custom program; however, Cadmus' modeling assumes a program will be submitted in phase XI. The increase in nonresidential custom program participation is relative to Cadmus Track A model.

changed without prior regulatory approval, the timeline for achieving the VCEA under this scenario (Track B) would present challenges. Dominion Energy would need to accelerate its income qualified program investments immediately and request approval for budget cap increases and higher incentive levels across all programs in the December 2022 DSM filing. Approval could be expected in late 2023, after which time the Company would only have two years to fill a significant savings gap by the end of the VCEA compliance period.

Figure 2 shows the minimum required net savings needed to meet the VCEA under a Track B scenario. To minimize costs, Cadmus modeled the Track B scenario to achieve the VCEA with no buffer, creating potential risk for the Company over the next four years should market conditions change substantially.

Figure 2. Dominion Energy's Track B Path to Virginia Clean Economy Act: Net Savings



Dominion Energy's programs, goals, and spending affect customers in three sectors: residential, residential income-qualified, and nonresidential. Table 4 and Table 5 summarize the contributions of each Dominion Energy program to the overall gross and net savings (2022-2025), respectively, estimated spending needed to achieve each scenario, and the resulting cost of savings per megawatt-hour. These tables focus on the programmatic impact and cost differences between gross and net VCEA compliance targets. As these tables show, achieving VCEA targets using net savings will require substantially greater investment than achieving compliance with gross savings across all sectors, requiring higher customer investment and driving higher acquisition costs.

Given the substantial differences in acquisition costs by program and cumulative customer investment between compliance tracks, Cadmus recommends Track A as the preferred path. Accordingly, the remainder of this long-term Plan presents data according to this preferred path (Track A).

Table 4. Summary of Gross Savings (Track A): Sector-Level Gross Savings and Investments, 2022–2025

	Planned Electric Savings (MWh)[a]	Planned Demand Reductions in 2025 (MW)	Planned Program Investment ($)[b]	Acquisition Cost ($/MWh)[c]
Residential Sector				
Residential Energy Services Program	399,078	22	$47,419,749	$118
Residential Efficient Products Program	434,613	10	$61,811,049	$142
Residential New Construction Program	29,871	4	$16,749,217	$561
Income and Age Qualified Sector				
IAQ Program	36,404	8	$60,422,563	$1,443
Nonresidential Sector				
Large Business Solutions Program	396,540	19	$74,995,860	$185
Small Business Solutions Program	299,466	21	$68,362,857	$194
Nonresidential New Construction Program	23,465	2	$8,655,419	$369
Total [d]	**1,619,436**	**86**	**$338,416,714**	**$200**

Note: Although the Virginia SCC Final Order approving Dominion Energy's 2020 DSM update requires a long-term Plan to provide "proposed Program savings and budgets for the five-year period beginning January 1, 2022,…" this table is intended to outline costs and savings to achieve VCEA compliance; therefore, the data presented here is for the period 2022-2025.

[a] Total represents sum of annual savings (2022-2025) including attrition from prior installed measures.

[b] Excludes Dominion Energy management, marketing, and common costs of $37,255,838 (2022-2025).

[c] Acquisition cost represents the average first year cost to acquire savings in the VCEA compliance period (2022-2025).

[d] Totals may not sum due to rounding.

Table 5. Summary of Net Savings (Track B): Sector-Level Net Savings and Investments, 2022–2025

	Planned Electric Savings (MWh) [a]	Planned Demand Reductions in 2025 (MW)	Planned Program Investment ($) [b]	Acquisition Cost ($/MWh) [c]
Residential Sector				
Residential Energy Services Program	440,835	27	$57,641,553	$130
Residential Efficient Products Program	346,866	10	$74,061,148	$214
Residential New Construction Program	25,987	4	$16,749,216	$645
Income and Age Qualified Sector				
IAQ Program	40,495	10	$79,937,518	$1,707
Nonresidential Sector				
Large Business Solutions Program	410,357	20	$115,476,567	$276
Small Business Solutions Program	309,004	23	$100,694,492	$276
Nonresidential New Construction Program	21,119	2	$8,655,420	$410
Total [d]	**1,667,943**	**97**	**$453,215,914**	**$272**

Note: Although the Virginia SCC Final Order approving Dominion Energy's 2020 DSM update requires a long-term Plan to provide "proposed Program savings and budgets for the five-year period beginning January 1, 2022,…" this table is intended to outline costs and savings to achieve VCEA compliance; therefore, the data presented here is for the period 2022-2025.

[a] Total represents sum of annual savings (2022-2025) does not include attrition from prior installed measures.

[b] Excludes Dominion Energy management, marketing, and common costs of $54,385,910 (2022-2025).

[c] Acquisition cost represents the average first year cost to acquire savings in the VCEA compliance period (2022-2025).

[d] Totals may not sum due to rounding.

1.2.2. Long Term Plan Savings Goals and Costs Summary

Although the VCEA targets are based on cumulative savings through 2025, the SCC Final Order[7] requires this plan to include program savings and budgets for the five-year period beginning January 2022. Accordingly, the information provided in the remainder of the long-term Plan is based on the period from 2022 through 2026.

The portfolio costs for seven comprehensive DSM programs that together represent Dominion Energy's long-term Plan are shown in Table 6. The overall investments total $476 million over the five-year Plan period, with income-qualified investments representing roughly 16% of the portfolio cost. Investments within the residential sector decline over the long-term Plan due to the shift in available savings potential, primarily from reduced residential lighting savings.

[7] Virginia State Corporation Commission. September 7, 2021. "Final Order in Case No. PUR-2020-00274."

Table 6. Long-Term Plan: Estimated Portfolio Costs Summary by Year

	2022	2023	2024	2025	2026	Total
Residential Sector Investment ($)	**$33,811,607**	**$35,758,741**	**$27,750,253**	**$28,659,414**	**$29,632,179**	**$155,612,194**
Residential Energy Services Program ($)	$12,756,483	$12,479,675	$11,252,532	$10,931,059	$10,840,079	$58,259,828
Residential Efficient Products Program ($)	$17,213,384	$19,168,405	$12,099,313	$13,329,947	$14,393,692	$76,204,741
Residential New Construction Program ($)	$3,841,740	$4,110,661	$4,398,408	$4,398,408	$4,398,408	$21,147,625
Income-Qualified Sector Investment ($)	**$14,224,459**	**$15,393,890**	**$15,394,165**	**$15,410,049**	**$15,423,100**	**$75,845,663**
IAQ Program ($)	$14,224,459	$15,393,890	$15,394,165	$15,410,049	$15,423,100	$75,845,663
Nonresidential Sector Investment ($)	**$23,784,914**	**$39,378,470**	**$43,336,254**	**$45,514,498**	**$45,930,761**	**$197,944,897**
Large Business Solutions Program ($)	$9,216,785	$19,058,310	$22,440,667	$24,280,098	$25,368,697	$100,364,557
Small Business Solutions Program ($)	$13,007,396	$18,258,469	$18,389,019	$18,707,973	$18,907,762	$87,270,619
Nonresidential New Construction Program ($)	$1,560,733	$2,061,691	$2,506,568	$2,526,427	$1,654,302	$10,309,721
Administration Services Costs ($)	**$7,900,308**	**$9,958,421**	**$9,512,874**	**$9,854,236**	**$10,008,464**	**$47,234,303**
Portfolio Investment ($)	**$79,721,288**	**$100,489,522**	**$95,993,546**	**$99,438,197**	**$100,994,504**	**$476,637,057**

Note: Totals may not sum due to rounding.

Table 7 provides the forecasted gross portfolio savings (incremental and cumulative) associated with implementing the long-term Plan. Total incremental gross savings (from 2022 through 2026), accounting for attrition of measures[8] installed in prior years, is 3,033,653 MWh, which includes projected savings accruing from Dominion Energy programs (2,015,363 MWh), self-directed savings from large commercial opt-out customers (288,270 MWh), and voltage optimization initiatives (730,020 MWh). The overall cumulative lifetime gross savings from Dominion Energy's historical, active, and planned programs is 3,846,700 MWh. The portfolio is projected to reduce 3.3 million cumulative lifetime mCO2e gross reduction in GHG emissions. In addition, the average annual coincident peak demand reduction from 2022 through 2026 is 87 MW.

[8] Attrition occurs when measures installed in prior years reach the end of their effective useful lifetimes and cease producing energy savings.

Table 7. Long-Term Plan Gross Savings: Estimated Portfolio Savings Summary by Year

	2022	2023	2024	2025	2026	Total
Estimated Incremental Electric Gross Savings (MWh/yr)						
Residential Sector Incremental Savings	**267,414**	**282,984**	**155,459**	**160,780**	**167,305**	**1,015,634**
Residential Energy Services Program	111,494	106,935	93,300	90,423	89,455	478,680
Residential Efficient Products Program	149,069	168,717	54,314	62,513	70,006	499,239
Residential New Construction Program	6,851	7,331	7,844	7,844	7,844	37,715
Income-Qualified Incremental Savings	**10,106**	**10,600**	**10,591**	**10,591**	**10,591**	**43,990**
IAQ Program	10,106	10,600	10,591	10,591	10,591	43,990
Nonresidential Incremental Savings	**58,848**	**101,632**	**95,777**	**96,736**	**96,749**	**955,740**
Large Business Solutions Program	37,387	90,737	129,970	147,288	157,457	547,456
Small Business Solutions Program	58,848	101,632	95,777	96,736	96,749	376,997
Nonresidential New Construction Program	2,589	5,233	7,822	7,822	7,822	31,287
Self-Directed Incremental Savings	**57,654**	**57,654**	**57,654**	**57,654**	**57,654**	**288,270**
Voltage Optimization Incremental Savings	**81,205**	**498,733**	**650,896**	**715,190**	**730,020**	**730,020**
Total Incremental Gross Savings	**475,227**	**951,602**	**970,376**	**1,040,950**	**1,062,319**	**3,033,653**
Estimated Cumulative Lifetime Electric Gross Savings (MWh/yr)						
Program Cumulative Savings, Phase I through Long-Term Plan	1,652,175	2,079,356	2,352,764	2,647,837	2,770,756	N/A
Self-Directed Cumulative Savings	115,308	172,962	230,616	288,270	345,924	N/A
Voltage Optimization Cumulative Savings	81,205	498,733	650,896	715,190	730,020	N/A
Total Cumulative Electric Gross Savings	**1,848,688**	**2,751,051**	**3,234,276**	**3,651,298**	**3,846,700**	**N/A**
Progress to VCEA (%)	217%	161%	126%	107%	N/A	N/A
Total Cumulative Gross GHG Reduction (MCO2e)	1,585,323	2,359,135	2,773,520	3,131,132	3,298,698	N/A

Note: Totals may not sum due to rounding.

Table 8 shows projected program, sector, and portfolio net incremental and cumulative savings from 2022 through 2026. Portfolio incremental savings are estimated at 2,635,241 MWh and cumulative lifetime net savings are estimated at 3,280,322 MWh. These savings would result in a net reduction of 2.8 million cumulative lifetime mCO2e in GHG emissions. In addition, the average annual coincident peak demand net reduction from 2022 through 2026 is 72 MW.

Table 8. Long-Term Plan Net Savings: Estimated Portfolio Savings Summary by Year

	2022	2023	2024	2025	2026	Total
Estimated Incremental Electric Net Savings (MWh/yr)						
Residential Sector Incremental Savings	**205,900**	**218,980**	**129,320**	**134,760**	**140,760**	**814,565**
Residential Energy Services Program	92,700	90,290	79,740	78,010	77,430	407,165
Residential Efficient Products Program	107,240	122,310	42,760	49,930	56,510	374,589
Residential New Construction Program	5,960	6,380	6,820	6,820	6,820	32,812
Income-Qualified Incremental Savings	**8,330**	**8,720**	**8,710**	**8,710**	**8,710**	**35,433**
IAQ Program	8,330	8,720	8,710	8,710	8,710	35,433
Nonresidential Incremental Savings	**87,200**	**162,460**	**188,610**	**203,140**	**210,410**	**766,952**
Large Business Solutions Program	31,800	73,280	102,180	116,100	123,530	433,186
Small Business Solutions Program	53,070	84,470	79,390	80,000	79,840	305,608
Nonresidential New Construction Program	2,330	4,710	7,040	7,040	7,040	28,158
Self-Directed Incremental Savings	**57,654**	**57,654**	**57,654**	**57,654**	**57,654**	**288,270**
Voltage Optimization Incremental Savings	**81,205**	**498,733**	**650,896**	**715,190**	**730,020**	**730,020**
Total Incremental Net Savings	**440,289**	**946,547**	**1,035,190**	**1,119,454**	**1,147,554**	**2,635,241**
Estimated Cumulative Lifetime Electric Net Savings (MWh/yr)						
Program Cumulative Savings, Phase I through Long-Term Plan	1,279,716	1,623,876	1,857,203	2,110,259	2,204,378	N/A
Self-Directed Cumulative Savings	115,308	172,962	230,616	288,270	345,924	N/A
Voltage Optimization Cumulative Savings	81,205	498,733	650,896	715,190	730,020	N/A
Total Cumulative Electric Net Savings	**1,476,229**	**2,295,571**	**2,738,715**	**3,113,719**	**3,280,322**	**N/A**
Progress to VCEA (%)	173%	135%	107%	91%	N/A	N/A
Total Cumulative Net GHG Emission Reductions (MCO2e)	1,265,925	1,968,543	2,348,557	2,670,137	2,813,007	N/A

Note: Totals may not sum due to rounding.

To estimate savings within this proposed compliance path, Cadmus conducted a modeling process that relied on participation estimates (derived from the Company's historical and projected program participation [DSM Phases I through X], Dominion Energy's 2020–2029 Potential Study,[9] and benchmarking research), and unit-level measure savings and incremental measure costs (derived from DSM Phases I through X program design information, the *Virginia Standard Tracking and Engineering Protocols Manual*, the *Potential Study*, the *Mid-Atlantic Technical Reference Manual,* and supplemented with other technical references manuals[10]). To estimate costs, Cadmus used modeling inputs derived from unit-level incentive values, implementation vendor estimates of program delivery costs, and the Company's program and portfolio administrative costs. Cadmus performed spot-check comparisons with Dominion Energy's Demand Side Planning team on the modeling to verify the reasonableness of the modeling results.

[9] Dominion Energy. April 6, 2021. *Dominion Energy Efficiency Potential Study: 2020 to 2029.*

[10] Supplemental technical reference manuals (used as needed) include the *Pennsylvania Technical Reference Manual,* the *Illinois Technical Reference Manual*, and the *Wisconsin Technical Reference Manual*.

Virginia law provides that DSM programs, excluding those that serve residential income-qualified customers, are deemed in the public interest if they pass three of the four industry standard cost-effectiveness tests as outlined in the *California Standard Practice Manual.*[11] While not a definitive measure of cost-effectiveness, Cadmus' model includes a screening function that estimates likely program cost-effectiveness using the Dominion Energy–specific cost and benefit inputs outlined above along with system-level avoided energy costs, and avoided transmission and distribution capacity costs. As shown in Table 9, Cadmus' screening process showed that each of the residential and nonresidential programs outlined in chapter 2 and chapter 4, respectively, pass three of the four tests. Because the IAQ program (outlined in chapter 3) entails higher program delivery costs, it is not cost effective. However, Virginia Law § 56-576 allows that programs that provide energy savings to income-qualified customers are not required to pass three of the four tests to be considered in the public interest.

Table 9. Summary of Benefit-Cost Screening Results by Program, Track A

	UCT	TRC	PCT	RIM
Residential Sector				
Residential Energy Services Program	3.30	2.72	16.21	0.46
Residential Efficient Products Program	2.85	2.01	7.24	0.40
Residential New Construction Program	2.10	1.05	2.06	0.52
Income and Age Qualified Sector				
Income and Age Qualified Program	0.48	0.48	N/A	0.29
Nonresidential Sector				
Large Business Solutions Program	2.17	1.31	2.76	0.53
Small Business Solutions Program	1.90	1.37	2.88	0.54
Nonresidential New Construction Program	3.84	1.67	2.82	0.71
Portfolio Total	**1.91**	**1.40**	**4.62**	**0.45**

1.3. Legislative and Commission Goals and Requirements

As a public utility in the Commonwealth of Virginia, Dominion Energy is subject to legislative and SCC rules, as well as past SCC guidance via final orders, associated with proposing and ultimately administering DSM programs for its customers. These requirements are set forth in various sources, with the most relevant in the context of the Plan being those addressed in the Code of Virginia (Virginia law) and the Administrative Code of Virginia (SCC rules), including the 2020 VCEA and 2018 GTSA. Cadmus developed this Plan to address the key program planning and implementation goals outlined in the legislation and SCC goals, requirements, and guidance identified below.

- **Virginia Law § 56-596.2** mandates that Virginia utilities develop, propose, and implement energy efficiency programs in which at least 15% of program costs benefit income-qualified and disabled individuals and/or veterans. The law sets a cumulative energy savings target of 5% of 2019 jurisdictional retail electric sales between 2022 and 2025, with total annual energy savings

[11] California Public Utilities Commission. October 2001. California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects.

targets that add 1.25% persistent cumulative savings each year (1.25% in 2022, 2.5% in 2023, 3.75% in 2024, and 5% in 2025). For the years from 2026 through 2028, and for the three-year period after that, the SCC will establish new saving targets. Further, the law sets a target for proposed program spending of $870 million between July 1, 2018 and July 1, 2028 and requires Dominion Energy to use a contractor to provide evaluation, measurement, and verification (EM&V) services to measure and track annual and lifetime energy savings, demand reductions, emission reductions, and other benefits such as customer bill savings and spending at the program and portfolio levels. The law also establishes a formal stakeholder process in the state, led by an independent monitor.

- **Virginia Law § 56-585.1 A 5** establishes rules by which Virginia utilities can recover DSM program costs. It states that Dominion Energy may petition the SCC for approval of a rate adjustment clause once each year and, beginning January 1, 2022, the SCC will award a margin on approved energy efficiency program operating expenses in the following year if the Company meets its annual energy savings target. Finally, the law enables large general service customers[12] with 1 MW and greater demand to opt out of energy efficiency program participation when they implement verified energy efficiency improvements consistent with industry standards, as well as meet the filing requirements established by the SCC rules to obtain such exemption. In addition, energy savings from these large general service customers shall be accounted for in utility reporting in the standards in Virginia Code § 56-596.2. Prior to 2018, all Virginia nonresidential customers with greater than 10 MW of demand were automatically exempted from paying the energy efficiency rider (but all customers pay the peak shaving rider), and customers with use between 500 kW and 10 MW had the opportunity to opt out of paying the rider.
- **Virginia Law § 56-576** provides that Virginia utility programs that pass at least three of the four cost-effectiveness tests[13] be deemed in the public interest. Programs that provide energy savings to income-qualified customers and pilots with limited scope, cost, and duration are not required to pass three out of four cost-effectiveness tests to be deemed in the public interest.
- **SCC Rule 20 VAC 5-304-20** requires that Virginia utilities analyze programs from multi-perspectives including the Participant Cost Test, Utility Cost Test, Ratepayer Impact Measure Test, and Total Resource Cost Test. Regardless of the cost-effectiveness of a program portfolio, discrete programs must be analyzed from each test perspective individually.
- **SCC Rule 20 VAC 5-304-40** requires a pilot or experimental program that involves rates or promotional allowances to be approved by the SCC before it can be launched; however, other, more limited pilots may be conducted without approval. In addition, the rule mandates that Virginia utilities must file a notification with the SCC's Division of Energy Regulation 30 days

[12] Large general service customers are defined as having greater than 1 MW of demand at a single site.

[13] These four cost-effectiveness tests are the Participant Cost Test, Utility Cost Test, Ratepayer Impact Measure Test, and Total Resource Cost Test, as reflected in the California Standard Procedures Manual.

before implementing pilots or experimental programs and must submit semi-annual pilot status reports.

- **The Final Order in Case No. PUR-2020-00274** requires that Dominion Energy's future DSM filings include a long-term Plan with the following elements:
  - *Proposed program savings and budgets for the five years beginning January 1, 2022, sufficient to comply with the total energy savings in the VCEA and investment levels in the GTSA.* To address this provision, the Plan includes energy savings and budget projections for the period 2022 through 2026, one year beyond the VCEA's 2025 end date, for all programs (see Chapter 2 through Chapter 4, *Impacts*) and at the portfolio level, as shown in Table 6 through Table 8.
  - *A proposed plan and framework for consolidating, streamlining, and marketing the public-facing aspects of the Company's approved and proposed DSM programs to facilitate participation at the levels required to achieve the VCEA targets.* Section 1.7 of this Plan includes a visual depiction of the recommended streamlined program framework and chapter 2 through chapter 4 describe the streamlined programs and their recommended implementation and marketing approaches. Chapter 7 provides detailed recommendations for how the Company can operationalize this approach in the near and medium terms.
  - *A detailed project management plan and risk management strategy demonstrating that the Company has identified and planned for deployment of the resources required to implement its revised programs. This strategic Plan shall reflect short-term, medium-term, and long-term recommendations for improvement of the Company's DSM portfolio.* To address these requirements, this Plan includes: (1) program- and portfolio-level budgets indicating the resources required to implement the Plan; (2) a summary of the Company's potential risks and challenges in attempting to achieve the VCEA goals, along with potential strategies to manage those risks and challenges (in section 1.6 and section 1.7); and (3) detailed short-, medium-, and long-term recommendations (in chapter 7) to guide Dominion Energy in implementing the overarching strategy to achieve its portfolio objectives generally and the VCEA specifically.

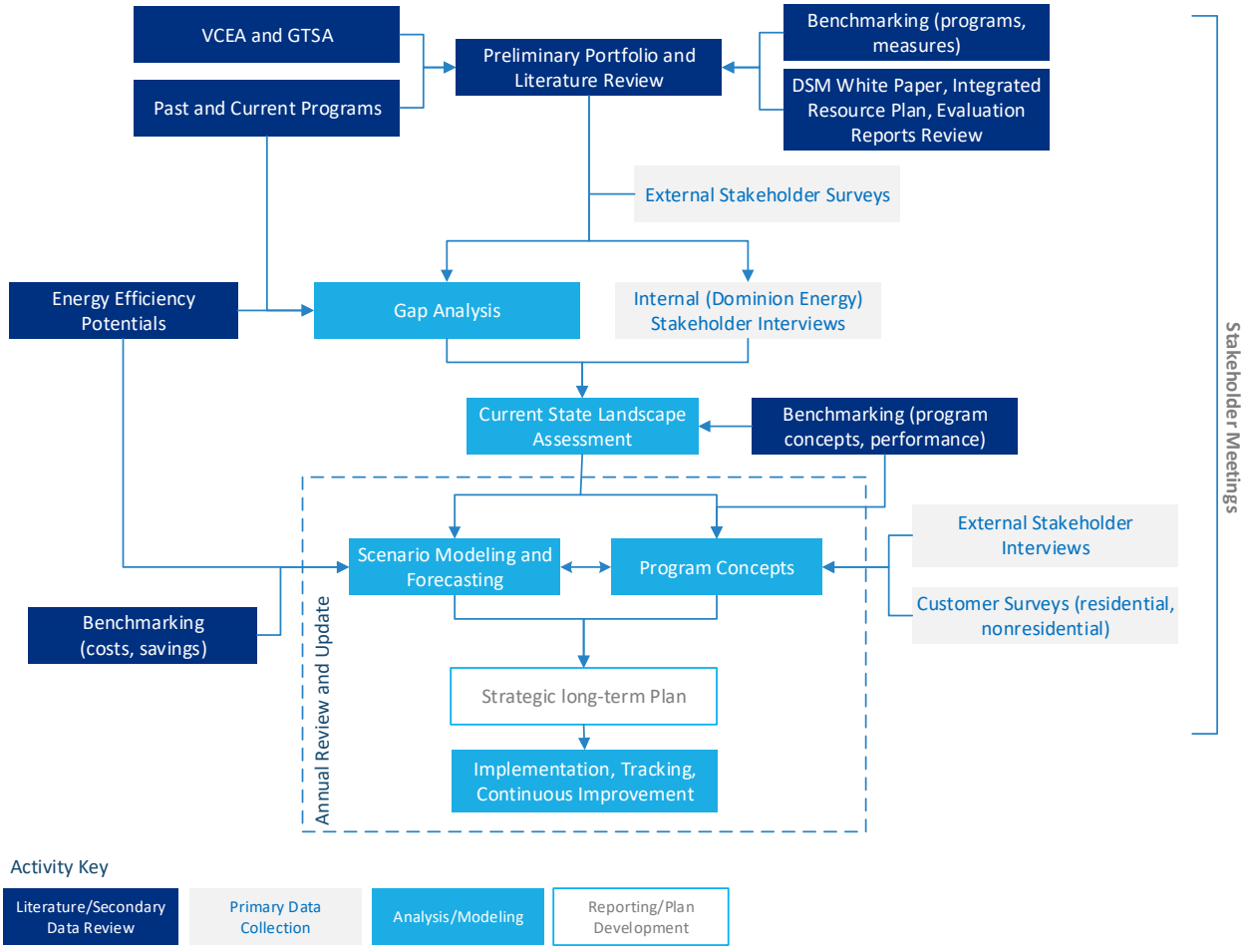
1.4. Planning Process

Cadmus developed this long-term Plan to support Dominion Energy in achieving the energy savings and spending targets outlined in the GTSA and VCEA, as well as the Company's corporate goals and objectives (as outlined in section 1.1). This Plan builds on Dominion Energy's existing robust program offerings, providing recommendations to refine the portfolio by bundling and enhancing its existing programs based on best practices and the characteristics of its customer base.

In developing this Plan, Cadmus conducted a series of primary and secondary research activities to gather relevant information on the Company's existing programs, energy savings potential, stakeholder priorities, and customer barriers and preferences, which were used to inform a set of consolidated DSM programs, as key inputs to model energy savings and program budgets, and to screen for cost-

effectiveness. Figure 3 provides an overview of the long-term Plan development process; each step in this process is described below the figure.

Figure 3. Long-Term Plan Development Process



Literature/Secondary Data Review. To assess Dominion Energy's current program portfolio structure and performance, market conditions, legislative and regulatory environment, and savings potential, Cadmus conducted an extensive review of secondary sources including the VCEA, GTSA, regulatory dockets, testimony, and SCC orders, as well as the Company's *Energy Efficiency Potential Study* and *2020 Integrated Resource Plan*,[14] past EM&V reports and other documentation of program history, and its program website.

[14] Filed in Case No. PUR-2020-00035. May 1, 2020.

- **Benchmarking.** Cadmus conducted extensive benchmarking to contextualize the Company's regulatory and market conditions. This review included data from more than 19 investor-owned utilities across the U.S., as well as secondary sources such as the Energy Information Administration and E Source, a research and data science firm for the utility sector. Cadmus used benchmarking data to understand and characterize persistent barriers and challenges in Virginia, to identify alternative program and portfolio strategies that offered replicable models for Dominion Energy's redesigned portfolio, and to fill gaps in data necessary to model energy savings and costs.

Metrics Benchmarked

- Utility avoided costs and rates
- Cost-effectiveness tests used for regulatory approval
- DSM Plan filing cycle length
- Utility portfolio structures and best practice program designs
- Customer awareness of utility DSM programs
- Net kilowatt-hour savings and program costs per customer
- DSM acquisition costs
- Common performance indicators
- Types of vendor trainings offered
- Marketing strategy and budget structures
- Technical measure specifications to fill gaps in existing data

Primary Data Collection: Stakeholder Feedback. At several points during the planning process, at Dominion Energy's direction, Cadmus took opportunities to inform stakeholders of our progress and solicit their input.

- **External stakeholder surveys.** Early in the Plan development process, Cadmus surveyed stakeholders engaged in the formal Dominion Energy stakeholder group. Cadmus issued invitations to 231 stakeholders and received 51 responses, for a 22% response rate. The primary survey objectives were to understand stakeholders' priorities for the Company's DSM portfolio and Plan, their perception of customer characteristics and constraints, and their proposed solutions to address existing market and regulatory barriers.
- **Internal stakeholder interviews.** Cadmus conduced in depth interviews with Dominion Energy staff, implementation vendors, the Company's legal team, and the current EM&V vendor to understand how the programs are identified, selected, and designed; constraints, challenges, barriers, and concerns with implementing DSM programs and reaching the VCEA goals; and insights on the current DSM portfolio and program design, performance, value proposition, challenges, delivery strategy, and implementation. Cadmus conducted 20 interviews with 27 individuals representing eight organizations.
- **External stakeholder interviews.** Cadmus conducted in-depth interviews with 10 external stakeholders, spanning environmental, low income, and energy conservation advocacy groups. We conducted these interviews after completing an initial conceptual design of Dominion Energy's consolidated program portfolio to capture their feedback and suggestions for further refinement.
- **Stakeholder meetings.** Cadmus presented the intended long-term Plan development process and progress to the Dominion Energy Virginia Energy Efficiency Stakeholder Group at several

stages[15] throughout the Plan development process to ensure transparency and to provide stakeholders with ample opportunity to provide feedback.

Gap Analysis. Cadmus conducted a measure-level analysis of key gaps between Dominion Energy's *Potential Study* and its existing program portfolio. The objectives of this analysis were to identify measures (1) with remaining potential that were not offered in the current programs, (2) with no potential that could be removed from the current portfolio, and (3) with cost-effectiveness marginally below 1.0 that could provide additional savings if bundled with more cost-effective measures.

Primary Data Collection: Customer Surveys. Cadmus conducted two surveys with Dominion Energy customers to identify effective outreach and education opportunities (such as awareness levels and how to engage); assess customer drivers and barriers (including programs of interest and reasons for not participating); identify opportunities to engage customers in deeper savings, new technologies, and programs (such as planned improvements and willingness to adopt efficient technologies); and to generate inputs to the Cadmus planning process.

- **Residential survey.** Cadmus fielded an online survey with residential customers in July 2021. We invited 26,000 customers to take the survey and received 761 valid and complete surveys, for a 2.9% response rate. We targeted several specific subgroup populations, including income-qualified customers and households with veterans, disabled persons, and/or non-English speakers, using specific survey quotas to enable an analysis based on likely program designations and specific VCEA targets.
- **Nonresidential survey.** Cadmus fielded an online survey with nonresidential customers in July and August 2021. We invited 25,451 businesses to participate in the survey and received 348 valid and complete surveys, for a 1.4% response rate. We categorized businesses by type and size (large and small) to align with expected program and component design criteria.

Current State Landscape Assessment. Each of the activities outlined above enabled Cadmus to understand the existing market environment and regulatory structure within which Dominion Energy has historically designed and implemented its programs. They also enabled us to characterize each current and planned program to allow for conceptualizing and modeling an alternative portfolio design structure.

Program Concepts. To create a structure for a comprehensive DSM portfolio, Cadmus compiled detailed information on Dominion Energy's existing programs. We reviewed stakeholder feedback to map key objectives to critical elements of an overarching portfolio strategy, as well as issues that Dominion Energy may be able to control or influence. Then, for each customer sector, we grouped existing programs based on key commonalities regarding the program offering, delivery strategy, and customer and building types. We sought to bundle programs together to create a more streamlined experience for

[15] Cadmus presented status updates during the Dominion Energy Virginia Energy Efficiency Stakeholder meetings on November 9, 2020; February 8, 2021; June 14, 2021; July 28, 2021; August 31, 2021, and November 17, 2021.

customers seeking to engage in a deeper energy efficiency journey and to pair higher-cost programs and measures with those that produce sufficient energy savings to meet Virginia's cost-effectiveness requirements. In the near and medium terms, we retained core program design features of the Company's existing programs within the bundled structure so that the current programs and implementation vendors can continue with minimal disruption. We relied on data from the market potential study, Cadmus' gap analysis, customer insights, and benchmarking research to fill programmatic gaps, recognizing that certain adjustments (such as establishing midstream incentives and custom rebates for large business program) may take longer than others to operationalize. Finally, for program concepts consisting of multiple existing programs, we adjusted program design elements (such as eligibility parameters and incentives) where possible to create uniformity within the programs to the extent possible.

Scenario Modeling and Forecasting. To develop savings pathways sufficient to achieve Dominion Energy's energy efficiency portfolio goals, Cadmus configured its proprietary modeling tools to model various Plan savings scenarios. This involved a multi-step process:

- **Step 1: Compile measure specifications.** Cadmus collected a comprehensive list of energy efficiency measures consisting of those offered through Dominion Energy's past, current, and proposed program offerings. For each measure, we compiled data on technical specifications, potential end-use energy savings, and peak demand reductions and costs from Dominion Energy's *Potential Study*, Phase I through X Plans, the *Virginia Standard Tracking and Engineering Protocols Manual*, and other secondary sources into a customized scenario modeling tool. For programs using more holistic strategies rather than measure-based approaches, such as the nonresidential custom component and new construction programs, Cadmus consulted historical program participant data, EM&V results, and benchmarking research to develop realistic participation and per-project savings estimates.
- **Step 2: Assess program design strategies.** Cadmus reviewed its cumulated research (as outlined above) to assess potential modifications to Dominion Energy's existing portfolio. We used this information to identify programmatic gaps, inefficiencies, and new program delivery strategies warranting consideration for the Company's portfolio.
- **Step 3: Incorporate stakeholder input.** To ensure the Plan aligns with stakeholder and customer priorities and addresses perceived challenges and participation barriers, Cadmus reviewed aggregated input provided through internal and external stakeholder surveys and interviews and customer surveys. While some identified stakeholder priorities and challenges were outside the scope of this Plan, we sought to ensure that the Plan addresses those priorities that are within Dominion Energy's control. We considered customer feedback on participation barriers and challenges; communication sources and preferences; and interests, attitudes, and motivations to understand opportunities for increased engagement and strategies to engage participants. We also reviewed and considered the Virginia Pathways modeling results and tool prepared by Energy Futures Group to assess opportunities to achieve the VCEA goals that may not be represented in other documentation. Although not specifically based on Dominion

Energy's Virginia service territory, avoided costs, or benefit/cost analysis, the Pathways model provided a useful comparison with DSM portfolios and programs in other states.

- **Step 4: Estimate participation for each measure.** Cadmus derived participation estimates from historical program data, the *Potential Study*, program implementation vendor estimates, and benchmarked data.
- **Step 5: Scenario modeling.** Cadmus used the consolidated data to model various Plan savings scenarios and to assess measures and programs based on their benefit/cost ratios according to each of the four *California Standard Practice Manual* cost-effectiveness tests. The modeling tool enabled Cadmus to evaluate various measure bundling options and alternative portfolio design strategies under different investment and participation projections, including Track A and Track B scenarios.
- **Step 6: Calculate program-level savings and costs.** Cadmus calculated gross savings as the sum of each measure's annual energy savings estimate multiplied by expected participation over the entire Plan. Cadmus applied net-to-gross ratios from Dominion Energy's most recent EM&V study and recent program plans with projected net values to derive net savings for the long-term Plan. To generate budgets, Cadmus summed incentives based on measure-level participation and program- and portfolio-level administrative costs for each Plan year.
- **Step 7: Calculate persistent savings.** To establish compliance with VCEA goals, Cadmus summed Dominion Energy's persistent savings from historical program accomplishments in Phases I through VIII, projected savings from Phases IX and X program plans, and long-term Plan savings (lifetime measure savings) through 2025.
- **Step 8: Balance the Plan.** Cadmus iteratively adjusted the expected participation, customer incentive levels, and program investment to balance the Plan. This step balances the priorities set by stakeholders, realistic achievements identified in Dominion Energy's *Potential Study*, alignment with the Company's integrated resource plan, and goals set by the VCEA.

1.5. Program Accomplishments

Virginia's energy plan,[16] published in 2007, introduced the Commonwealth's voluntary goal "to reduce 2022 electricity use by 10 percent of 2006 retail consumption through conservation and efficiency." Dominion Energy launched its first DSM program three years later, in 2010, after running several pilot programs. Since that time, the Company has implemented 57 DSM programs (including 51 programs focused on energy efficiency and six on demand response), provided more than $230 million in incentives to over 470,000 customers, and is on track to exceed the 10% electricity reduction goal set by the state energy plan for 2022. In the process, Dominion Energy and its implementers have formed trade ally networks that include market actors such as contractors, builders, retailers, and distributors; established program tracking and delivery processes; and built integrated data tracking systems.

[16] Commonwealth of Virginia Department of Mines, Minerals and Energy. 2007. *The Virginia Energy Plan*. http://dls.virginia.gov/groups/energy/VEP.pdf

Through 2020, Dominion Energy's programs have generated 3,561,633 MWh of verified gross energy savings, resulting in a 305,588 metric ton reduction in CO_2 emissions for the Company's customers.

Informed by the passage of the GTSA and VCEA, Dominion Energy continues to closely coordinate with stakeholders to identify new energy efficiency program offerings. Accordingly, the Company will launch 11 more programs in 2022 (Phase IX). Dominion Energy is committed to achieving its regulatory targets through a comprehensive, diverse, and equitable portfolio of energy efficiency programs that offer participants an exceptional experience and a path to achieving the Company's energy efficiency goals. Dominion Energy has embarked on a rigorous process to identify a portfolio of programs that leverage all available energy savings potential, align with its stakeholders' priorities and customer preferences, and provide value to its customers.

DSM Accomplishments to Date*

DSM PROGRAMS: 27 Active, 11 Pending

CUSTOMER SERVED: 459,000

REBATES ISSUED: $225 Million

LEDs DISCOUNTED: 8 Million

HOMES ASSESSED: 10,600

INCOME-QUALIFED CUSTOMERS REACHED: 37,000

SMALL BUSINESS REBATES ISSUED: 3,600

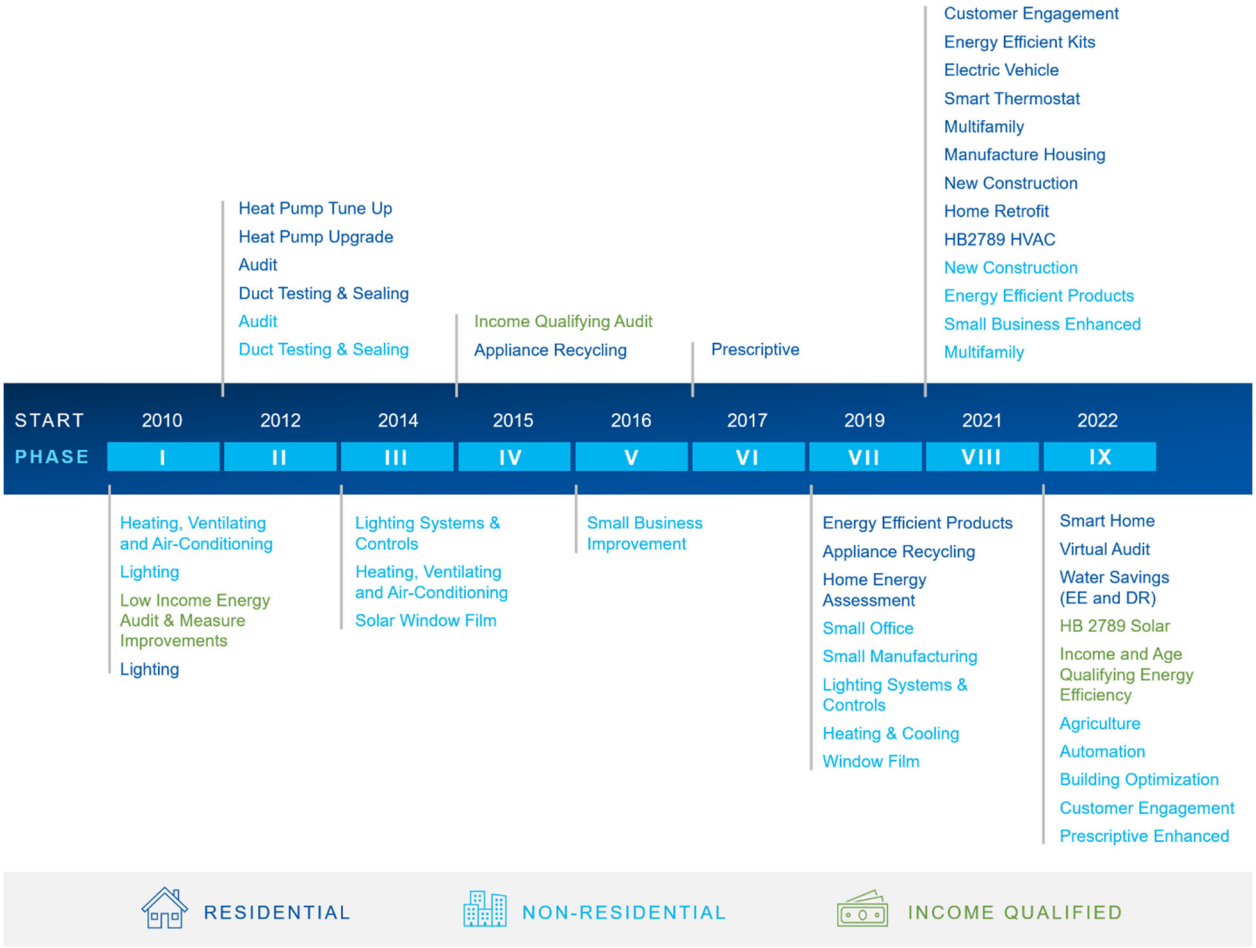
WELCOME KITS DISTRIBUTED: 19,000

* Phases I – VIII, through 9/30/2021. Does not include contributions from the shareholder funded EnergyShare program

As shown in Figure 4, over the past 12 years Dominion Energy has established a robust set of program offerings for each of its customer segments, putting in place energy efficiency assessments and services, product rebates, and incentives for energy-efficient new construction. Dominion Energy ramped up its offerings significantly beginning in 2018 and currently provides its customers in every sector with a wide range of opportunities to save energy.

The Company has made substantial progress in building partnerships with the state's weatherization assistance providers to deliver Dominion Energy's IAQ programs alongside state's federally funded energy services, expanding the free products and services that income-qualified customers receive. Partnering with state weatherization providers is a successful, proven strategy employed by utilities across the U.S.—it pairs utility and state funding with local expertise and outreach to maximize benefits for income-qualified customers. In areas where a weatherization service provider does not have the staff capacity to deliver Dominion Energy's programs alongside state-funded programs, the Company's IAQ program implementation vendor uses qualified contractors to fill resource gaps and handle increased demand. In 2020 alone, Dominion Energy's IAQ program reached 23,981 participants, exceeding its participation goal by 20% and its net energy savings goal by 11%.

Figure 4. Demand-Side Management Program History



To supplement its robust portfolio of programs, Dominion Energy anticipates submitting an additional nine programs for approval in its Phase X Plan, in December 2021. Collectively, these new programs will reflect nearly all remaining measures with economic potential identified in Cadmus' gap analysis. The Company will submit the Phase X Plan concurrently with this long-term Plan, along with requests for regulatory flexibility to support transitioning to the streamlined portfolio structure outlined herein. Additionally, as of the time of this Plan's release, Dominion Energy is preparing to solicit bids from experienced DSM marketing and strategy firms to develop and execute an overarching and comprehensive portfolio marketing and outreach strategy.

1.6. Risks, Challenges, and Management Strategies

Dominion Energy faces a range of market and regulatory risks and challenges to achieving its energy savings targets as required under the VCEA. This section provides an overview of risks and challenges as well as management strategies the Company can leverage to help mitigate those risks to optimize its ability to achieve the goals outlined in this Plan.

1.6.1. Market Challenges and Management Strategies

Existing market challenges in Virginia—including low awareness of energy efficiency opportunities and declining market potential for savings—create significant challenges for Dominion Energy to achieve its legislative and regulatory obligations. It will be critical for the Company to increase customer awareness and capture all achievable energy savings potential to develop and execute a successful portfolio of programs.

1.6.1.1. Limited Customer Awareness

Ideally, customers think of Dominion Energy when they want to improve the energy efficiency of their home or business or when they need to replace energy consuming equipment. To cultivate this top-of-mind awareness, utilities often deploy marketing strategies that address both the program and portfolio levels, where program-level marketing is focused on a specific program's value proposition and target customer population while portfolio-level marketing is focused on increasing customers' general awareness of programs and the benefits of energy efficiency, as well as actions they can take to conserve energy (including by participating in programs). To create broad awareness across customer segments, both strategies rely on multiple outreach channels, targeted messaging based on primary research and industry best practices, and cross-promotion that encourages customers to take a holistic approach to efficiency. Research shows that a customer-centric approach to program outreach and engagement also increases customers' satisfaction with their utilities and encourages ongoing program engagement.

Historically, Dominion Energy has relied on its implementation vendors to conduct program-level marketing, including management of program-specific trade ally networks, but to date the Company has not implemented an overarching portfolio-level marketing strategy nor a coordinated trade ally management initiative. Previous SCC orders have required marketing expenditures to be tied to specific program approvals (rather than to, for example, portfolio initiatives), limiting the Company's ability to launch a broad awareness campaign that links and promotes the programs and measures together. Cadmus' survey results indicated a significant opportunity to increase customer awareness of the Company's DSM programs. For example, only 19% of surveyed residential customers were *somewhat familiar* or *very familiar* with Dominion Energy programs and even fewer (13%) reported participating in a program in the last three years.

Among nonresidential survey participants, 15% had heard about Dominion Energy's programs in the last year and only 9% were *somewhat familiar* or *very familiar* with the Company's programs, while 12% said they had participated in the past. These findings are indicative of a historical under-investment in general energy efficiency awareness advertising and education, as well as the fact that, between 2018 and 2020, Dominion Energy's largest nonresidential customers were excluded from participation in DSM programs and were not exposed to direct program marketing during that period.[17]

[17] Between 2018 and 2022, nonresidential customers with 500 kW or more of annual energy demand were automatically exempted from contributing to or participating in DSM.

Through benchmarking research, Cadmus found that general population program awareness is higher among customers in other utility jurisdictions, ranging from 47% to 81%. Cadmus' survey also revealed considerable interest among Dominion Energy's customers to engage with efficiency. Among surveyed residential customers, 84% would be *somewhat interested* or *very interested* in program participation, with income-qualified respondents expressing the strongest interest. Nonresidential customers are also very interested in participating, with 49% of respondents indicating they were *very likely* or *somewhat likely* to participate in a Dominion Energy program in the next three years. Both residential and nonresidential customers said that reducing energy bills was a strong motivator to participate. These survey results indicate a significant opportunity to increase program awareness and engagement among all customer segments as one avenue to increase program participation and savings.

Additionally, the support of a robust and engaged trade ally network is an important element in disseminating information about utility programs and their benefits as well as maintaining a consistent pipeline of program participants. Because many high impact energy-using systems are subject to emergency replacement, and customers may not have the time or knowledge to research efficiency programs, trade allies provide an important link to information about programs that offer incentives for energy saving equipment. The most successful programs leverage a network of trade allies, such as contractors, distributors, and retail partners, to serve as program ambassadors and promote the utility's programs and upsell higher-efficiency equipment to their customers. To ensure strong trade ally relationships, utilities make participating worthwhile by providing value to those trade allies in the form of training and educational opportunities, recognition, co-marketing support, or some combination. In Cadmus' survey, only about 8% of residential customers and 11% of nonresidential customers who were aware of Dominion Energy's programs had heard about them from a trade ally. During interviews with internal stakeholders, Dominion Energy staff and implementers indicated that the Company's trade ally network is managed at a program level and has some gaps. While some programs have sufficient support from local and regional trade allies to provide a strong pipeline of program participants, newer programs have lower representation from trade allies. While the implementation vendors are working to build relationships with local contractors, distributors, and builders as the programs mature, a more uniform process of engaging trade allies is a hallmark of best practice DSM portfolios and helps utilities manage risk by ensuring all trade allies abide by consistent program protocols and standards.

To address customers' limited program awareness, the Company plans to issue a request for proposals in the near term to solicit bids from marketing and advertising firms specializing in DSM program customer awareness and outreach. Once selected, this firm will be tasked with developing and executing a portfolio-level customer awareness strategy to complement the Company's existing program-level marketing efforts; this will be key to increasing customer awareness of Dominion Energy's DSM programs and the benefits of energy efficiency generally and in driving participation. One critical element of this overarching strategy will be a deliberate plan to engage, leverage, and track a trade ally network to promote all Dominion Energy programs.

Chapter 5 of this Plan outlines best practice marketing and outreach strategies that can be deployed to increase awareness among residential, income-qualified, and nonresidential customers.

1.6.1.2. Declining Potential

The VCEA requires Dominion Energy to capture significant and increasing energy savings in conditions where the known energy savings potential is forecast to decline. Specifically, results from the Company's *Potential Study* showed that compared to the previous (2017) study, estimated 2020 through 2029 technical and economic potential declined by 3% each as a proportion of base consumption. Some key drivers of this shift in potential include a decrease in avoided costs, rapid transformation of the lighting market and anticipated federal lighting standards that will eliminate potential from screw-based LEDs, and the effects of a regional shift from a summer to a winter peak. This adjusted regional peak had a significant impact on the cost-effectiveness of some measures, such as residential and commercial cooling, that have historically provided substantial avoided capacity benefits.

Based on benchmarking research from 19 investor-owned utilities across the U.S., Dominion Energy's avoided energy and capacity costs are lower than the average. In particular, the Company's 2020 avoided energy costs are only slightly more than half that of the benchmarked utilities' (at $0.0281 per kilowatt-hour compared to a $0.0477 per kilowatt-hour average) and its avoided capacity costs, at $85.60 per megawatt-year, were about 8% lower than the average of $92.60 per megawatt-year. These costs have a direct impact on Dominion Energy's energy savings potential and, particularly when coupled with a challenging cost-effectiveness regulatory environment (described below), present a unique challenge for the Company. Avoided energy and capacity costs comprise the bulk of DSM benefits used in cost-effectiveness calculations: lower avoided costs result in lower cost-effectiveness and therefor fewer measures being available to customers.

Utilities across the country are seeing similar declining potential, which is not only being driven by changes in the lighting market, but also by increasing saturations of high-efficiency technologies as well as changes to building codes and increased equipment standards. Consistent with many utilities around the country, Dominion Energy phased out standard screw-based LED bulbs in 2020 (for non-IAQ rebate programs) and will eliminate specialty LEDs in 2024 in anticipation of an increasingly transformed market and potential reinstatement of the federal Energy Independence and Security Act of 2007 (EISA). Given these challenges, Dominion Energy has been carefully assessing future potential and acknowledges that the ability to capture sustained cost-effective savings will be difficult. In analyzing this Plan, Cadmus conducted a gap analysis to identify measures not currently included in Dominion Energy's portfolio that could offer untapped potential. In general, Cadmus found that very little additional potential exists and those measures that do offer additional potential are expected to be included in the Company's Phase X programs. Specifically:

- The measures in Dominion Energy's existing programs represent 80% of available economic potential in the nonresidential sector. Only two measures—ENERGY STAR® servers and server power management—account for nearly all untapped economic potential. Dominion Energy intends to offer these measures through its Phase X programs.
- Dominion Energy already offers all residential measures with economic potential in its current residential program portfolio.

- Very few measures offer marginally cost-effective[18] additional energy savings potential. In the nonresidential sector, marginally cost-effective measures (including high-efficiency rooftop heat pumps, demand hot gas defrost, and ENERGY STAR or better personal computers) could increase existing potential by only 5%. Similarly, in the residential sector, marginally cost-effective measures (including return duct modification and low-flow showerheads) could increase potential by only 3%.

The decline or elimination of low-cost energy saving measures (such as LED lighting), persistently low avoided energy costs and rates, and the uncertain future market all impact the Company's objectives. In the next four years, Dominion Energy is planning to produce energy savings in excess of its estimated achievable potential, essentially front-loading savings to achieve the VCEA targets, by consolidating and expanding its program portfolio and increasing its investment in marketing and outreach as proposed in this Plan. Additionally, the Company may wish to seek regulatory approval for increased flexibility to manage its existing programs through changes to program budgets and incentive levels.

1.6.1.3. Lingering Impacts from COVID-19

The past 24 months have brought unforeseen challenges with respect to the Company's ability to consistently deliver DSM programs to customers. Following the onset of the COVID-19 pandemic, which led to months of lockdown and significant restrictions in the Company's ability to interact with customers, Dominion Energy was able to reposition its programs, adjust some of its customer engagement approaches, capitalize on alternative program delivery mechanisms, and achieve most of its portfolio goals. Even so, there is still uncertainty and possible risk in Dominion Energy's savings forecasts associated with the continued viability of its business customers' operations, ongoing financial hardship for many residential customers, supply chain issues, labor shortages, and increasing costs of raw materials and products. These cumulative impacts affect the Company's costs and operations, as well as its customers' ability to invest in energy efficiency.

The pandemic has also had a profound impact on customer expectations, changing the ways in which people consume information and buy products. Through this process, Dominion Energy has gained a better understanding of customer behaviors and will permanently integrate some of its adaptive strategies, such as offering virtual interactions and "no-touch" program participation options, which has made the Company more prepared for unforeseen events in the future. However, while the pandemic appears to be receding, the economy is slowly recovering, and customers are re-engaging with programs, the longer-term impacts of COVID-19 are still evolving and their potential effect on Dominion Energy's ability to achieve its significant VCEA goals are unknown.

To address these challenges, the Company should continue to respond to customer needs as they arise by exploring innovative and alternative program delivery approaches that prioritize customer, implementation vendor, and trade ally safety. Additionally, the Company may wish to seek regulatory

[18] Measures with a Total Resource Cost Test ratio of between 0.8 and 1.0 were considered marginally cost effective.

approval for additional budget flexibility to respond to changing market conditions as they arise. Finally, it will be important for Dominion Energy to continue communicating with customers to inform them of changing market conditions and program opportunities, and with stakeholders to solicit their feedback and ideas, in order to respond to market disruptions arising from the continuing effects of the pandemic.

1.6.2. Regulatory and Statutory Challenges and Management Strategies

While the VCEA and GTSA create a framework for Virginia utilities to expand DSM efforts that help customers manage their energy costs and increase sustainability, legacy regulatory rules and precedents are likely to hamper Dominion Energy's ability to achieve its aggressive energy savings targets.

1.6.2.1. Filing Cadence

The regulatory filing cadence of a given jurisdiction is a core organizing principle for ongoing DSM program development and delivery. Most utilities across the U.S. file an energy efficiency plan covering a portfolio of programs every three to five years. Such filings may include new programs but are often dominated by existing programs that may be extended, discontinued, or modified (such as by adding new measures or adjusting incentives). Per Virginia Code § 56-585.1 A 5, utilities may update their DSM-specific rate adjustment clauses for cost recovery no more than annually, which has resulted in an annual filing cadence. Dominion Energy has also typically been subject to SCC orders dictating the timeline for when the next DSM case must be filed, which is generally one year later.[19] This, in combination with the VCEA savings targets, has created pressure for Dominion Energy to file for approval of new DSM programs every year since 2009, which the Company has largely done.

Dominion Energy begins its program planning process by issuing an open request for program implementation vendors to submit proposals for new programs that include detailed design parameters, along with cost and savings projections. Those program proposals that pass the Company's cost-effectiveness modeling process and provide customer value are included in its annual DSM filing. Each filing for new programs represents a new phase and requests funding approval for new or continuing programs that are proposed for a specific duration (typically five years for new programs). Approval generally takes about nine months, during which time Dominion Energy's selected program vendors remain *on standby* until their programs are approved and their contracts are finally executed. This process has resulted in an annual cycle during which Dominion Energy staff are simultaneously implementing the current set of programs and preparing to launch new approved programs from the previous filing, while also identifying possible new programs, soliciting requests for proposals from vendors, and preparing the next DSM filing. At any given time, Dominion Energy has anywhere from two to eight overlapping program phases in the field, all at different stages and with different end dates. This schedule places a significant burden on staff to design, implement, and plan for new programs concurrently and seems to have prevented them from approaching the portfolio strategically in the

[19] For example, the SCC Final Order approving Dominion Energy's 2020 DSM Plan, issued September 7, 2021, notes: "Dominion's future DSM filings, including its next annual DSM filing, shall include: . . ." Page 11.

context of the Company's corporate objectives, regulatory obligations, and legislative requirements. It has also seemed to have prevented the Company from exploring and implementing program improvements that could increase the energy savings performance of their existing programs.

This filing cadence is unusual from an industry perspective. Based on Cadmus' research, the average filing cycle in benchmarked states is 3.25 years, and ranges from two to seven years. (For reference, the Virginia filing cycle appears to be specific for each program, based on the duration approved in the original filing, in most cases, five years. At the end of the five years, if Dominion Energy does not file an extension, the program is discontinued.) In most other jurisdictions, a DSM plan covers an entire portfolio of programs, which is then approved for the full filing cycle. Different states have varying levels of flexibility to adjust programs mid-cycle so that utilities may react quickly to market changes or evaluation results. For example, the North Carolina Utilities Commission has adopted formal flexibility guidelines for Duke Energy that enable the utility to adjust its programs within specified parameters. Specifically, North Carolina Sub 831 Order[20] requires Commission approval only for: *"(1) Program changes or shifting of program resources that would result in program costs increasing or decreasing by more than 20% of the original program cost estimates initially approved by the Commission.; (2) Program changes that would increase or decrease the energy and demand savings projections by more than 20%; (3) Any increases or decreases to participant incentives; (4) Program changes that would alter the target customer groups; (5) Program changes that may result in the reassignment of costs and benefits from one class to another; (6) Any combination of the first five criteria."*

An additional outcome associated with this environment has been the Company's tendency take a more reactive, rather than proactive, approach to developing programs. This has resulted in many programs being narrowly focused on a specific measure, end use, or customer segment, rather than broad programs that include multiple ways for customers to engage with energy efficiency. Currently, Dominion Energy offers 27 different customer-facing energy efficiency programs and will add 11 more programs starting in 2022.[21] The programs are at varying levels of maturity and on different filing and implementation schedules. Based on benchmarking research, it is much more common for utilities to offer fewer programs, with seven being the average number of programs across 19 benchmarked utility portfolios. Additionally, while a common utility practice is to first establish program design parameters including cost and savings expectations and model cost effectiveness internally, then request vendor proposals that adhere to those parameters. the Company's open bidding process for new programs prolongs the timeline between program design and launch and creates uncertainty for both the Company and its program vendors. There may be an opportunity for the Company to reconsider how it designs and bids its programs for the purpose of shortening the time from program ideation to program launch.

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[20] State of North Carolina Utilities Commission. July 16, 2012. Order Adopting Program Flexibility Guidelines in Docket No. E-7, Sub 831.

[21] This is based on Phase IX programs, approved on September 7, 2021.

Offering comprehensive programs that include a wide range of measures and various program components would allow Dominion Energy to increase its program budget caps and would give the Company greater discretion—with appropriate regulatory oversight and consideration of stakeholder input—to direct funds where they are needed within a given program phase to maximize savings. Proposing a portfolio of programs on an established filing schedule without expiration dates could also increase trade allies' and other stakeholders' confidence in the programs' reliability and longevity and reduce the Company's risk from programs expiring prematurely. Finally, maintaining broader, more comprehensive programs could reduce the Company's filing frequency. Rather than submitting new, narrowly focused programs each year, Dominion Energy may wish to seek regulatory guidance on its ability to file its restructured portfolio, then submit mid-phase filings using an administrative approval request or other abbreviated process only when necessary to add new technologies or address program design modifications. While the Company would still be required to file an annual rate rider true up, the level of effort would be substantially lower than the process required to plan, analyze, and prepare documentation for a slate of new programs each year. By offering customers a range of opportunities to save energy, this structure also facilitates the cross-promotion of intra-program components and deeper program engagement, as well as a more streamlined participation and reporting processes, thus benefitting customers in at least two ways: by increasing ease of participating in programs and by reducing aggregate administrative costs ultimately borne by customers.

One goal of the Company's long-term Plan is to outline a structured, strategic portfolio with more streamlined programs that optimize customer participation and performance. The programs proposed in chapter 2 through chapter 4 will consolidate the Company's existing portfolio allowing it to continue operating without disruption to its programs or implementation vendor contracts while providing customers with a smaller number of *broadly* designed offerings with multiple opportunities to access services and incentives that help them save energy. Chapter 7 provides recommendations to help Dominion Energy transition to this program structure and move toward a five-year filing cycle in which the Company could update programs periodically to reflect customer and technology market changes and to true up budget needs.

1.6.2.2. Lack of Budget Flexibility

Although Dominion Energy files for multi-year approval of its programs and budgets, Virginia regulatory rules limit its flexibility to modify spending within a phase. Under a past order, the SCC determined that DSM programs were not in the public interest without a budget cap. For most programs, the Company requests five-year budget approval, consistent with its planned program duration, and such budgets, once approved, become caps that Dominion Energy may not exceed. In addition, the Company must file an annual budget true-up to recover its DSM costs under the rate recovery rules of Virginia Code § 56-575.1 A 5.

Within a given phase, Dominion Energy can shift funds between program years but may not shift funds between programs or increase its budgets to manage costs. Thus, if a given program successfully garners higher interest than expected, or costs otherwise increase such that program dollars are exhausted before the end of the approved phase, the Company must submit a full new plan filing to extend or replace the program, and it can take nearly two years to prepare and submit the plan and secure

approval. In the meantime, Dominion Energy may not exceed the budget; this occurred in 2020 when the Company's nonresidential Lighting Systems & Controls program attracted enough participation to expend its budget within the first three years of the five-year program. Capitalizing on customers' interest to maximize savings is central to Dominion Energy's ability to achieve its statutory energy savings targets and maintain its customer and trade ally relationships.

In many states, regulatory rules include provisions to provide utilities with some flexibility to adjust budgets as necessary to respond to unexpected market changes or other factors. Such provisions include allowing fungibility between program budgets within a specific customer class or budget increases to accommodate unexpected needs. A few states (primarily those without regulated energy savings targets), such as North Carolina and Kentucky, have no budget caps and no provisions around increasing funds to support energy efficiency programs; if program interest is high and the program is cost-effective, utilities can allocate additional funds as necessary without formal approval. Furthermore, very few utilities are required to file programs with a specific duration; rather, at the end of a given filing cycle, utilities can request to either extend, modify, or discontinue an existing program. This flexibility allows utilities to take advantage of the opportunity to capture as much savings as possible from cost-effective programs with unexpectedly high demand and to manage costs to avoid running out of program funds before a new DSM plan can be approved and a new budget allocated. This type of flexibility would not increase risk to Dominion Energy or its customers.

Suspending a program can be highly disruptive to program continuity and incompatible with achieving savings targets. When programs are closed or suspended, interested customers may be turned away or put on a waiting list, and trade allies, who depend on reliable utility programs and partnerships, may be required to reallocate equipment inventories, change their marketing strategies, or even lay off staff. Pausing programs can create disruptions to the marketing strategy, strain trade ally relationships, and frustrate interested customers who are unable to participate at a time convenient to meet their needs. A suspended program cannot contribute energy savings and can create an ongoing challenge to achieving energy savings targets if frustrated customers or trade allies refuse to give those programs a second chance (or if they tell their social network about their bad experience). Best practice energy efficiency programs avoid service disruptions as a top priority.

Reorganizing the portfolio by shifting away from single- or limited-measure-based programs to comprehensive program bundles with larger budgets (as recommended in this Plan) should help Dominion Energy create budget flexibility and manage costs while maintaining its budget cap requirements. These bundles will allow the Company to respond to market shifts in measure interest and demand while maintaining budget caps at the level of the comprehensive programs. Dominion Energy may also wish to seek regulatory approval for appropriate budget flexibility within the broad, consolidated programs proposed in this long-term Plan (i.e., between program pathways and components), particularly in the short- and medium-term timeframes, as it seeks to significantly ramp up savings to achieve the VCEA.

1.6.2.3. Goal Uncertainty

Neither the VCEA, nor subsequent regulatory guidance, specify whether the Virginia targets must be met with gross or net program savings. For Dominion Energy, the difference in achieving compliance using net versus gross savings is significant. In net-to-gross analysis, the Company's EM&V vendor found net savings are, on average, 83.8%[22] of gross savings. To drive participation levels needed to achieve the VCEA target with net savings, Dominion Energy would need to increase its investment in incentives, implementation vendor support, and marketing across all of its programs, particularly focusing on its IAQ program where the most savings potential remains (but where high costs contribute to low cost-effectiveness). To create a realistic scenario that requires the minimum utility investment needed to achieve net savings, Cadmus modeled the portfolio to reach the VCEA target precisely, with very little savings buffer to allow for unexpected adjustments. To achieve the required savings, the modeling exercise estimated the impacts of increasing incentives and marketing investment on program adoption. As outlined in section 1.2, achieving this level of net savings will require approximately $132 million over three years in additional customer funded investment compared to meeting compliance with gross savings.

Among states with statutory energy efficiency targets, there is no standard approach for using net versus gross energy savings as the compliance metric. The approach regulators choose may take various factors into consideration, such as the cost and energy savings potential to achieve savings targets in the context of that state's market environment and utility avoided costs, the cost to measure compliance, and priorities for EM&V spending. In some states, such as Arkansas, Utah, and Wisconsin, net savings are required for compliance, but evaluators have some flexibility in when and for what measures net-to-gross analysis must be conducted as part of the EM&V process. However, this is a costly analysis that can dominate EM&V costs and reduce the funds available for other important evaluation needs. To help mitigate this cost, some states, such as Michigan, Indiana, and Washington use net savings for compliance but utilities have the option to apply a deemed net-to-gross adjustment for most measures and net-to-gross analysis is only conducted periodically for measures and projects with the highest impacts and uncertainty. Several states, such as Iowa, Pennsylvania, Oregon, Washington, and Georgia, report gross savings for compliance, which recognizes all savings that occur within a given utility jurisdiction. Cadmus recommends that compliance based on gross savings—the combined savings from *all* participating customers— should be found consistent with the language of the VCEA, which sets targets based on "total annual energy savings" that are achieved and has the benefits of lower acquisition costs, lower EM&V costs, more precise measurement of savings, and lower aggregate spending requirements while still meeting the requirements of the VCEA to grow energy efficiency savings at a rapid and meaningful pace.

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[22] The VCEA compliance gross savings (Track A) includes self-directed savings from large commercial opt-out customers and voltage optimization that assume 100% net-to-gross. The Long-Term Plan program net savings are based on Dominion Energy's evaluations, program plans, and secondary data for added or new measures.

Regardless of the approach adopted in Virginia, given the significant difference in savings required to achieve the VCEA target with gross versus net savings, Dominion Energy will need to carefully plan and design its programs to reflect the required compliance path. As Cadmus' modeling shows, the Company would likely need to exceed its achievable savings potential in the near term by increasing incentive levels and investing in increased marketing to reach compliance using net savings (Track B). Such cost increases would, however, impact program cost effectiveness, and some existing measures with positive but marginal cost-effectiveness would likely no longer be cost effective, requiring the Company to fill an even larger savings gap with more constrained potential or seek approval for non-cost effective programs. Furthermore, the need to obtain regulatory approval for program design adjustments will dictate when the Company can implement these changes. Specifically, the Company would need to include the adjusted programs and budgets in its 2022 Phase XI DSM filing, with the expectation that those programs could be approved by late 2023 and launched no earlier than January 2024, giving the Company only two years to fill the any gaps relative to the 2025 target. Such an aggressive increase in savings may not be possible in this timeframe; therefore, Cadmus' model also assumed the Company would accelerate its investment into IAQ projects in 2023, effectively drawing funds from later program years, to pursue savings achievement over a longer period. We believe SCC confirmation of the Track A compliance path (based on gross savings) or guidance on an alternative path should be given as soon as possible to enable the Company to develop a workable compliance strategy with sufficient time to adjust its programs to achieve it.

1.6.2.4. Cost-Effectiveness Rules

Providing customers with access to cost-effective programs is a primary consideration in Virginia and Dominion Energy works closely with its stakeholders and selected vendors to design and implement cost-effective programs. Virginia Code § 56-576 notes that non-IAQ programs must pass three of the four cost-effectiveness tests to be considered "in the public interest."[23] While the law does not prohibit approval of programs that pass fewer than three of four cost-effectiveness tests, it sets a standard that Dominion Energy has maintained. To date, the Company has not submitted any new programs for approval (except IAQ programs) that do not pass the three of four tests threshold established in state law; however, to achieve its targets under the VCEA (particularly if compliance is based on net savings), the Company may need to submit programs for reasons other than passing cost-effectiveness tests.

Based on a review of cost-effectiveness rules across 50 states, most states (58%) primarily rely on the Total Resource Cost Test to consider whether a program or portfolio is cost-effective, with only two states[24] (other than Virginia) requiring the portfolio to pass multiple tests (the Utility Cost Test is the second most common test required, by 20% of states). Additionally, it is common for a state regulatory

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[23] The cost-effectiveness tests are the Participant Cost Test, the Utility Cost Test, the Ratepayer Impact Measure Test, and the Total Resource Cost Test. Low-income programs are not required to pass three out of four tests.

[24] Utility portfolios in California must pass the Total Resource Cost Test and the Utility Cost Test. Utility portfolios in Connecticut must pass the Utility Cost Test and a modified (accounting for some societal benefits) Total Resource Cost Test.

commission to view cost-effectiveness at a portfolio level rather than a program level; the implications of this standard are significant for certain DSM programs, such as home audit programs, which commonly do not exceed a program-level benefit/cost ratio of 1.0 but offer significant educational benefits and serve as a key program entry point for customers. Using a portfolio-level rather than program-level cost-effectiveness threshold can allow utilities to continue offering these beneficial programs if they can offset the lower benefit/cost ratios using programs with particularly strong cost-effectiveness test results.

Finally, the SCC has historically emphasized the need for cost-effectiveness within a new program's first year or two. Energy efficiency programs often require a higher level of spending during their early years, requiring capital investment to develop human resources, delivery infrastructure, marketing and outreach, and data tracking needs, and may take three years or more to ramp up to full capacity. Achieving cost-effectiveness in a program's early years can be particularly challenging.

1.6.2.5. Changing Eligibility Requirements

In Virginia, the law has changed several times since the 2007 Re-Regulation Act regarding automatic exemption levels and opt-out requirements. At the time of the Company's programs beginning in 2010, customers with over 10 MW of demand were automatically exempt, and customers with between 500 kW and 10 MW of demand had the opportunity to opt out of paying the energy efficiency rider and eligibility to participate in DSM programs. In 2018, with the passage of the GTSA, the automatic exemption from energy-efficiency riders was lowered to exempt all customers with demand of 500 kW or more. In 2020, the Virginia Code § 56-585.1 A 5 was revised, eliminating the automatic exemption for customers with over 500 kW of annual energy demand and requiring an opt-out process for those seeking exemption from the energy efficiency riders, establishing a new threshold of 1 MW of annual demand to obtain such exemption (along with certain filing requirements established by SCC rules). Accordingly, between 2018 and 2020, the Company had no program offerings for its large business customers and focused its nonresidential programs on small- and medium-sized businesses.

Customers with the most energy demand are generally those with the greatest opportunities to save. Thus, in many utility jurisdictions, large business customers represent the most significant contributors to energy savings. The recent two-year gap in DSM program eligibility created a disadvantage for Dominion Energy, as the large commercial sector not only lacked access to DSM program opportunities, but also was not exposed to any marketing messages or direct outreach from account managers, implementation vendors or trade allies. While the reversal of the exemption provision will allow Dominion Energy to expand its reach once again to nonresidential customers with more than 500 kW energy demand and offer additional measures geared to those customers, it will take some time and concerted effort to increase their awareness. Energy savings that Dominion Energy programs might have encouraged among large-customers in the two-year gap period—for example, installation of higher efficiency equipment at the point of burnout of existing equipment or renovation of facilities or processes—should be considered lost opportunities for savings that will not be available again until the devices and process equipment installed during the gap period have reached *their* useful lifetimes. For practical purposes, the two-year eligibility gap will become a five-year gap by the time new programs targeting newly eligible large customers can be proposed (in 2022), approved (in 2023), and launched (in

2024). The Company's current offerings for these customers reflect 2018-2020 eligibility rules; targeted large customer offerings including a custom program and strategic energy management that would typically be designed around the needs of this customer segment will not be incorporated into the portfolio until at least 2024, based on recommendations outlined in this Plan. Large commercial projects also take longer to identify, plan, and install. Fully realizing the savings potential from this customer sector may not be possible during the current VCEA compliance period.

1.6.3. Operational Challenges and Management Strategies

Dominion Energy's current implementation and operational practices have developed over several years to accommodate the regulatory and market environments in which it operates. To facilitate significant transformation of its portfolio structure the Company may wish to adjust certain processes to both maximize its programs' performance and to streamline its contractual processes, but these adjustments should be handled with great care and are likely to take several years to fully realize.

1.6.3.1. Need for Enhanced Program Information

While the VCEA mandates that utilities use the services of a vendor to perform EM&V of its programs, the provision cites only that utilities calculate "annual and lifecycle net and gross energy and capacity savings, related emissions reductions, and other quantifiable benefits," as well as customer bill savings and program spending. The law does not require utilities to conduct process evaluations[25] of its programs and, given other legal and regulatory constraints on spending and cost-effectiveness, Dominion Energy has not yet conducted detailed process evaluations. While the Company's programs are largely consistent with industry best practices, are supported by implementation vendors with national experience and perspective, and are subject to periodic operational reviews by Dominion Energy and its implementation teams, these programs have not benefitted from customer-focused primary research and jurisdictionally specific analysis to support program optimization and continuous improvement.

Process evaluations are typically designed around a set of defined objectives and research questions that can give evaluators important insights about how programs function within local markets and why they are successful or unsuccessful at achieving their goals, including factors such as customer awareness, barriers, motivation, experience, and satisfaction along with the degree to which trade allies or program partners promote the programs. Process evaluation outcomes include detailed, actionable recommendations for improving programs based on empirical research and industry-accepted analytical methods. The recommendations typically include program modifications aimed at maximizing program performance, optimizing customer experience, increasing trade ally participation, improving the effectiveness of program marketing, and, in turn, maximizing overall portfolio savings.

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[25] Whereas impact evaluation estimates how much energy savings a program delivers, process evaluation involves focused research by an objective, independent party using industry accepted research and analytical methods to help utilities understand how their programs function in the market and how well they influence customer behavior.

Process evaluation research can vary by utility jurisdiction and be highly influenced by energy efficiency program and market maturity; it is important to understanding how to best optimize programs to maximize energy savings and customer satisfaction within that context. A well-designed process evaluation can also be used to test alternative program design and delivery strategies and to identify those strategies that produce the most advantageous results. Without this program optimization review, Dominion Energy may not have sufficient information to fully realize the savings potential of its programs.

The recommended next steps outlined in Chapter 7 of this Plan include conducting targeted program optimization reviews using industry-accepted process evaluation techniques for programs with the largest potential impacts, uncertainty, or customer effects, as well as reviewing its existing program key performance indicators (KPIs, centered on savings, costs, and participation) to identify process evaluation priorities. Ideally, research should be conducted on prioritized programs to establish a baseline for expanded program KPIs such as barriers, customer satisfaction, and trade ally engagement. Over time, process evaluation techniques can be used to measure progress on those metrics and provide insights that the Company could use to refine and continuously improve the effectiveness of its programs.

1.6.3.2. Need to Align Vendor Contracts with Streamlined Portfolio

To ensure that Dominion Energy's programs are delivered seamlessly by experienced professionals as cost-effectively as possible, the Company conducts a rigorous competitive bidding process for each new program to select a qualified implementation vendor. The Company then aligns each selected vendor's contract period of performance with the relevant program phase timeline. Thus, because of its historical program development process and annual filing cadence as outlined in section 0, the Company currently administers contracts with several different implementation vendors with varying periods of performance and expiration dates ranging from 2022 to 2027.

Maintaining the integrity of Dominion Energy's vendor contracts is important. Renegotiating or repackaging its implementation vendor contracts would not only have a negative impact on the Company's reputation among its industry partners and require a significant administrative effort that could impact its budgets and program tracking processes, but it could also impact its partners' businesses. Honoring its vendor contracts is among the Company's highest priorities.

One key strategy Cadmus identified for optimizing program performance, enabling a more proactive and strategic program development process, and creating budget flexibility and stability is to move toward consolidating Dominion Energy's projected 37 active and approved DSM programs under a broader program structure. Dominion Energy's stakeholders identified this type of program consolidation as a high priority and Cadmus' benchmarking research revealed that a more streamlined program portfolio offering broader customer engagement opportunities is a common best practice among utilities across the U.S. However, it is not possible to align the Company's vendor contracts under this structure until its current contracts conclude. Offering the consolidated programs outlined in this Plan without renegotiating its contracts will require the Company to continue to administer multiple existing vendor

contracts for each bundled program until it can bring the periods of performance into alignment by the end of 2027. Chapter 7 includes recommended steps for managing this process.

Table 10 summarizes the management strategies by category that Cadmus recommends for addressing these challenges.

Table 10. Portfolio-Level Challenges and Management Strategies

Category	Risk/Challenge	Recommended Management Strategies
Market	Limited customer awareness	• Develop and execute an overarching portfolio marketing strategy • Expand relationships with local trade allies and organizations and track trade ally awareness, engagement, and satisfaction • Evaluate and track customer awareness, engagement, and participant satisfaction through process evaluations
	Declining potential due to changes in codes and standards and maturing market	• Continue to seek innovative and emerging technologies and delivery methods to reach additional customers • Optimize program design and delivery by presenting customers with bundled programs to encourage cross-promotion and deeper energy savings per customer and to capture as much potential as possible • Add new program opportunities to engage large nonresidential customers • Invest in efforts to increase customer, trade ally, and partner organization awareness and to accelerate energy savings to meet VCEA goals • To achieve a net savings compliance path (if necessary), increase incentives and marketing investment as possible within regulatory requirements to increase participation
	Lingering impacts from COVID-19	• Continue to seek innovative and emerging technologies and delivery methods to reach customers • Expand targeted customer communications, consistent with the planned portfolio marketing strategy, to inform them of ways to engage with energy efficiency as the market evolves • Seek SCC approval to increase flexibility to vary program budgets within appropriate limits • Continue to seek stakeholder feedback and new ideas
Regulatory	Annual filing cadence leads to reactive design and planning and narrowly focused programs	• After filing a more streamlined portfolio with broader programs as presented in this long-term Plan, focus filings on adding new measures or design modifications for the existing programs and on innovative pilots, as opposed to adding new narrowly focused programs • File new programs less frequently • Initiate process evaluations of priority programs to identify areas of improvement and to inform potential program modifications within the context of VCEA goal attainment
	Budget inflexibility limits potential program reach	• Reorganize the portfolio into comprehensive bundled programs, which allows for greater flexibility to meet customer demand and respond to market changes while adhering to budget caps • Seek SCC approval to increase flexibility to vary program budgets and shift funds within consolidated program and appropriate limits
	Most programs must pass three of four cost-effectiveness tests to be	• Continue to coordinate with stakeholders through the policy subcommittee to identify possible opportunities to reexamine cost-effectiveness inputs and rules

Category	Risk/Challenge	Recommended Management Strategies
	deemed as "in the public interest"	• Continue to organize programs to incorporate measures with good savings potential but marginal cost-effectiveness by offsetting them with highly cost-effective measures • Offer a nonresidential custom program that mitigates cost-effectiveness risk through a verification process prior to distributing incentives
	Changing rules regarding program eligibility has minimized large customers' access to programs and exposure to DSM messaging	• Implement the recommendations in this plan to focus on capturing near term savings to the extent possible • Begin conducting outreach to and engaging with large business customers as soon as possible; encourage them to participate in the existing program offerings for which they are eligible and seek to understand their long-term energy saving needs and interests • Develop program design parameters for large business custom and strategic energy management programs and include program proposals in the 2022 Phase XI filing
Operational	Lack of complete information about the programs' performance	• Prioritize program process evaluations according to program impacts, savings uncertainty, and customer effects • Work with an external evaluator to develop enhanced KPIs, such as customer awareness and satisfaction, trade ally participation, and response time, to guide evaluation research • Revisit KPIs for implementation vendors to ensure their ongoing accountability toward goal achievement • Continue to work with stakeholders to solicit ongoing feedback and new ideas
	Vendor contracts are not aligned with a consolidated program structure	• Continue to manage existing vendor contracts under the consolidated program structure • Create a schedule and plan for aligning all vendor contract periods of performance over the next five years • Develop tools, resources, and guidelines to assist existing program implementation vendors to cross-promote energy efficiency opportunities during appropriate customer interactions

Chapter 7 provides additional details on the recommended management strategies outlined with specific operational steps to transition the Company's portfolio while ensuring existing program and vendor continuity.

1.7. Overarching Strategy to Achieve Portfolio Objectives

Achieving the VCEA goals will be challenging. Virginia's changing market dynamics will require the Company to exceed its forecast achievable energy efficiency potential over the next four years by essentially front-loading savings now to achieve its 2025 goal, thus creating uncertainty in the years that follow. This will require the Company to make significant investments to increase awareness of its programs and provide both financial and technical support that compel customers to participate.

Primary Strategies to Achieve Objectives

- RESTRUCTURE THE PORTFOLIO
- INCREASE PROGRAM AWARENESS
- CREATE A CONTINUOUS IMPROVEMENT FRAMEWORK

This Plan outlines a path to achieve Dominion Energy's VCEA targets and mitigate its risks and challenges through three primary strategies: restructuring the portfolio, increasing program awareness, and creating a framework to achieve continuous improvement.

RESTRUCTURE THE PORTFOLIO

First and foremost, this Plan proposes a restructured and expanded program portfolio intended to achieve several key objectives:

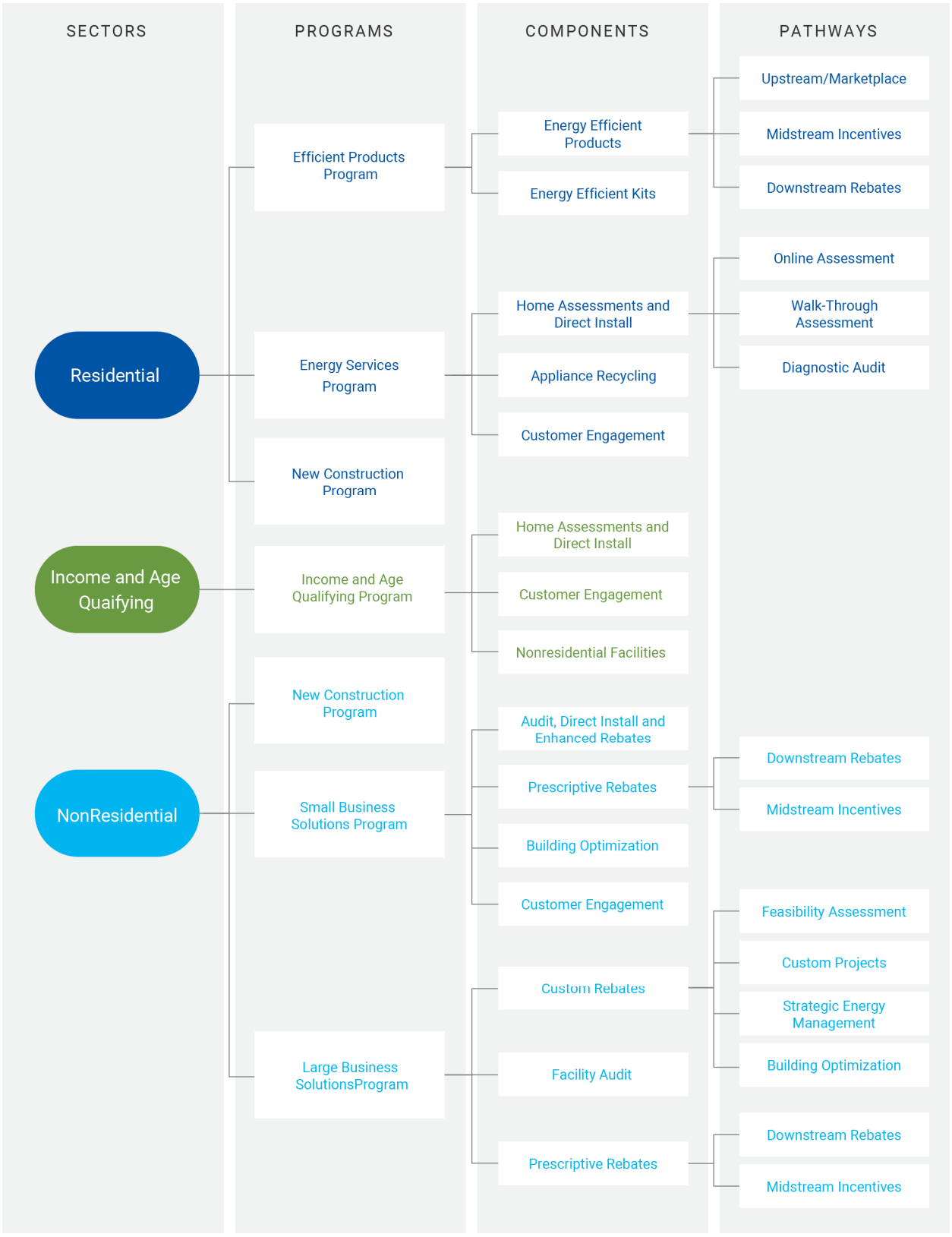
- **Budget Management.** By combining Dominion Energy's existing portfolio of narrowly focused programs into a consolidated portfolio (initially by presenting existing programs to customers as a unified portfolio and over time transitioning to broader programs as regulator guidance and contractual obligations allow), the Company will be better able to manage costs because the larger, pooled program budgets can be directed toward the measures and pathways that garner the most customer interest. This will reduce the risk of exhausting smaller program budgets before the approved end date and will create economies of scale that can reduce program acquisition costs over time.
- **More Participation Options.** The comprehensive structure also creates multiple pathways for customers to engage more deeply with programs by presenting a wide range of efficiency opportunities so customers can choose the efficiency strategies best suited to their needs. This Plan addresses a broad range of incentive structures (upstream, downstream, and midstream); delivery models (direct install, self-install, and contractor install); building types (single family, multifamily, and small and large nonresidential facilities); technical support (such as home and building assessments); efficiency services (including appliance pick-up, equipment tune-up, and building optimization); and information and engagement (such as home and business energy reports) intended to minimize participation barriers and provide customers with as many paths as possible to improve their home or business efficiency. This structure also improves cross-promotional opportunities that encourage customers to continue their energy efficiency journey and learn to view Dominion Energy as a trusted energy efficiency resource.
- **More Comprehensive Programs.** The proposed consolidated program structure outlined in this Plan largely relies on bundling and repackaging Dominion Energy's existing programs. This

revised structure allows Dominion Energy to integrate measures and services, such as home and building assessments that support program participation but may not meet the required cost-effectiveness threshold, by combining them with program offerings that have higher benefit/cost ratios. However, maintaining continuity of its existing program operations and implementation vendor contracts will be necessary over the remaining VCEA compliance period. During this period, the Company can begin to work with its existing vendors and program partners to shift from a narrow program perspective to a comprehensive one. For example, offering support to implementation vendors and trade allies to facilitate cross-program promotion, share leads, and to follow up on opportunities will help produce the benefits of comprehensive programs while enabling existing program-specific implementation vendor contracts to continue uninterrupted. The Company can also leverage retailer relationships from its legacy upstream lighting program to promote rebates for appliances and other measures available through retail channels while evaluating options to expand its online marketplace to offer new types of energy efficient products to its customers.

- **Reduced Staff Burden.** The proposed program structure is intended to create a more streamlined planning and filing environment for Dominion Energy staff, SCC staff, and stakeholders. By establishing umbrella type programs coupled with requests for five-year budget approval and relaxed program end dates, the Company should be able to limit its annual filings to the required rate adjustments and to only submit mid-phase DSM filings when needed to modify the existing programs.
- **Expanded Reach.** The recommended program structure integrates new program components to engage large nonresidential customers, including adding custom projects and strategic energy management pathways, in recognition of the significant contribution of large customer programs to utility portfolios across the U.S. However, given the regulatory planning and approval timeline in Virginia, it is unlikely the Company will be able to realize savings from custom projects before 2024. The VCEA's inclusion of customers with over 500 kW of annual demand creates an opportunity for Dominion Energy to ramp up the energy savings contribution from its largest customers in the near-term through increased engagement with its existing programs as well as by expanding its offerings in Phase XI.

Figure 5 summarizes the proposed portfolio structure that encompasses fewer programs with multiple components and pathways customers can pursue depending on their needs.

Figure 5. Proposed Demand-Side Management Portfolio Structure



INCREASE PROGRAM AWARENESS

This long-term Plan also emphasizes the importance of a significantly expanded effort to improve general awareness of Dominion Energy's energy efficiency programs and the benefits of energy efficiency. As revealed by Cadmus' research, the Company's customers have low program awareness across all sectors, but high levels of interest in pursuing energy efficiency upgrades. Dominion Energy can capitalize on this significant opportunity by creating a portfolio-level marketing function to supplement the existing program marketing provided by its implementation vendors, by increasing its trade ally network, and by expanding outreach to organizations that serve income-qualified customers and hard-to-reach communities. As discussed, the Company is already pursuing plans to do so in the near term.

CREATE A CONTINUOUS IMPROVEMENT FRAMEWORK

Finally, this Plan includes strategies to create and maintain a framework to assess, improve, and track program design, operations, and delivery. Under its current regulatory and program environment, Dominion Energy has historically limited EM&V to the quantitative metrics required to report compliance; the SCC does not require Dominion Energy to invest in research designed to provide details on how its programs are perceived in the marketplace, what barriers may exist that prevent customers from participating, inherent inefficiencies in program delivery, or opportunities for improvement. Using KPIs to support ongoing process evaluations is a best practice for DSM programs. In most jurisdictions, comprehensive EM&V that includes prioritized process evaluation entails an investment of 5% to 10% of overall portfolio costs. Under the SCC's final order in the 2020 EM&V docket, it ruled that "overall EM&V budgets for future DSM programs should be in the range of 5% to 7% of program spending." This level of spending may be sufficient to support both impact and process evaluations of prioritized programs, but additional review may be needed to understand how EM&V budgets can be best allocated toward priority regulatory requirements and other program needs. Targeted process evaluation will provide research specifically designed to help Dominion Energy understand its programs' performance, identify specific actions the Company can take to improve that performance, and measure and track program performance on each metric.

Chapter 7 of this Plan provides specific recommendations to help Dominion Energy operationalize the strategies outlined above and transition its DSM portfolio. It further provides several longer-term recommendations to help the Company maintain its energy conservation achievements beyond the VCEA timeline, address changing and uncertain market conditions, and continue to work toward its corporate sustainability goals.

The following chapters outline the recommended programs to achieve VCEA targets using Track A (gross savings).

2. Residential Sector

This Plan proposes that the Company consolidate its residential portfolio into three comprehensive programs designed to provide residential customers with a diverse range of opportunities to reduce their electricity usage. Customers of all housing types and ownership status will have opportunities to participate in energy efficiency.[26] This long-term Plan presents a broad range of options that would provide customers with enhanced opportunities to participate in whatever manner best meets their needs, from installing a single measure to performing a whole-home retrofit. As envisioned, the programs would offer customers the ability to learn about their home's energy characteristics and ways to save through efficient behaviors, and with opportunities to recycle old, inefficient appliances, obtain rebates for a wide array of energy-efficient equipment, and build an efficient new home.

This section provides sector-level objectives and goals, a customer profile, and detailed description of each program implementation strategy.

2.1. Sector-Level Objectives and Goals

Residential, non-income-qualified customers are estimated to contribute 48.5% of the overall portfolio's energy savings. Additionally, the residential programs are designed to achieve several sector-level objectives:

- Offer comprehensive market-rate programs that provide a positive experience for participating customers.
- Provide information on opportunities to improve energy efficiency in customers' homes as well as education and informational resources to help them adopt efficient behaviors.
- Enhance residential-focused marketing and outreach to increase program awareness.
- Provide a framework to cross-promote programs for deeper customer engagement.
- Continue to build a robust trade ally network.

Table 11 and Table 12 present estimated annual investment required to implement the residential programs outlined in this Chapter, along with projected energy savings, demand reduction, and GHG reductions associated with their implementation based on gross and net energy, respectively.

Table 11. Residential Sector Annual Estimated Gross Savings and Budget

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$33,811,607	$35,758,741	$27,750,253	$28,659,414	$29,632,179	$155,612,194
Electric Savings (MWh)	267,414	282,984	155,459	160,780	167,305	1,015,634
Peak Demand Reduction (MW)	52	52	36	37	39	N/A
GHG Reductions (mCO2e)	229,318	242,670	133,312	137,875	143,471	870,946

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

[26] Section 3 provides an overview of programs targeting income-qualified customers.

Table 12. Residential Sector Annual Estimated Net Savings and Budget

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$33,811,607	$35,758,741	$27,750,253	$28,659,414	$29,632,179	$155,612,194
Electric Savings (MWh)	205,900	218,980	129,320	134,760	140,760	814,565
Peak Demand Reduction (MW)	39	40	29	30	32	N/A
GHG Reductions (mCO2e)	176,567	187,784	110,897	115,562	120,707	698,522

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

2.2. Sector-Level Profile

To better understand Dominion Energy's residential customers, Cadmus conducted secondary research to identify common traits and distinguishing features and completed a survey of non-income-qualified residential customers, which received over 600 responses.

Non-Income and Age Qualified Definition

Survey respondents reporting household annual income **above 60%** of the state median income.

Serving three large metropolitan areas, Northern Virginia, Washington DC, Richmond, and the Tidewater/Hampton Roads region, along with surrounding smaller cities and towns, Dominion Energy provides electricity to more than 2.5 million homes and businesses in Virginia. According to the 2020 census, Virginia's population has increased by around 630,000 people (7.9%) since 2010 and is currently estimated at 8,631,393. Statewide, Virginia is projected to add over 800,000 new residents every decade, reaching 10.5 million by 2040.[27] Accordingly, Dominion Energy has the highest projected summer peak load growth rate through 2028 (0.8%) in the PJM regional transmission organization (where the PJM peer average is 0.4%).[28]

Compared to Virginians statewide, Dominion Energy's non-income-qualified survey respondents were more likely to be homeowners (88% versus 66%), have fewer household occupants (averaging 2.4 versus 2.6), be in the 55 to 74 age range (51% versus 22%), and to have a bachelor's degree or higher (73% versus 39%). Taken together, these factors reflect a narrower constituency among Dominion Energy customers compared to the Virginia population, skewed toward higher incomes. Figure 6 presents a snapshot of survey respondent characteristics compared to Virginia residents statewide (both non-income-qualified and income-qualified).

[27] World Population Review. 2021. "Virginia Population 2021." Data from American Community Survey and Census Bureau. https://worldpopulationreview.com/states/virginia-population

[28] Dominion Energy. n.d. "Dominion Energy® Electric Transmission Overview." PowerPoint presentation. https://www.fairfaxcounty.gov/planningcommission/sites/planningcommission/files/assets/documents/pdf/telecommuniactions/dominion%20presentation.pdf

Figure 6. Residential Survey Respondent Demographics

DEMOGRAPHICS

	Dominion Energy Customers		Virginia Statewide
	Non-IAQ	IAQ	
Homeowners	88%	60%	66%
Single-Family Homes	76%	59%	73%
Household Size (average)	2.38	2.74	2.61
Age 55 to 74	51%	45%	22%
Advanced Education (BA or higher)	73%	23%	39%

Key findings from Cadmus' survey, summarized below, reflect non-income-qualified customer characteristics that can inform the marking and outreach strategy outlined in chapter 5 this long-term Plan.

Non-income-qualified residential customers are largely unfamiliar with Dominion Energy programs and are looking for the Company to provide them with information. Most survey respondents (79%) reported being *a little bit familiar* to *not at all familiar* with Dominion Energy's DSM programs and less than half (43%) reported having heard about a program in the past year. When asked how they want to receive information about energy efficiency programs, respondents identified Dominion Energy emails (70%) and energy bills (33%) as their top two choices.

The combination of limited program awareness with the view of Dominion Energy as a trusted source of information suggest that increased program promotion and general portfolio marketing could help increase residential customer awareness.

Limited energy efficiency knowledge is a barrier to engagement; however, customers are interested in DSM programs and are willing to invest a modest amount to improve their home's efficiency. Non-income-qualified residential customers are generally unfamiliar with how to save energy in their homes, with many believing that energy efficiency upgrades are too expensive, not worth the time or financial investment, or that their home is already energy efficient. However, most respondents (84%) are interested in participating in programs that help them reduce energy bills, provide free energy saving devices, reduce energy waste, and help the environment.

Respondents expressed strong interest in rebates on energy-efficient appliances (44%) and discounted LED lighting or fixtures (42%). Over half (51%) said they would be likely to purchase an efficient furnace with a rebate set at 25% of incremental cost. These findings indicate that customers are motivated by

opportunities to save and not deterred by a modest upfront cost if the opportunity provides overall savings. The findings additionally suggest an opportunity for Dominion Energy to reduce participation barriers by making customers more aware of existing programs, educating them about how they can save energy in their homes, and linking energy savings to reduced energy costs.

2.3. Sector-Level Strategies

This section provides detailed descriptions of each residential program including objectives, customer targets and eligibility, qualifying measures and incentives, implementation and marketing strategies, estimated budget and impacts, and results from Cadmus' cost-effectiveness screen.

2.3.1. Residential Energy Services Program

As envisioned within this Plan, through the Residential Energy Services program, Dominion Energy will provide customers with education about energy savings behaviors and opportunities to increase their home's energy efficiency, as well as incentives for energy efficiency services such as home energy assessments, equipment tune-ups, and appliance recycling. Dominion Energy will also offer direct install measures and incentives for energy efficiency upgrades such as insulation, air sealing, and heat pumps when a customer receives a home energy assessment. The Company will offer the Residential Energy Services program to all residential customers, though eligibility criteria may differ by program component.

Home Assessments and Direct Install. Eligible customers will be able to choose between three energy assessment pathways to learn how they can improve their home's energy efficiency. Participants for each pathway will receive a report detailing recommended energy efficiency improvements.

- **Online Assessment.** Customers will complete a self-directed online audit, which entails answering a series of questions about their home. Based on their responses, customers will receive efficiency recommendations and a free, customized energy-efficient kit.
- **Walk-Though Assessment.** Pre-qualified vendors will complete a 30- to 60-minute assessment of a customer's home, either in person or virtually over the phone. Customers will receive free energy saving items such as LED bulbs through in-person direct installation or a customized kit that is mailed to them after completing the virtual assessment. Assessment participants will be eligible to receive incentives for a wide range of efficiency upgrades such as heat pump tune-ups, insulation, duct sealing, and HVAC system replacement.
- **Diagnostic Audit.** Pre-qualified vendors will perform a comprehensive, diagnostic, whole-house energy audit, including diagnostic testing to assess opportunities for home weatherization and energy-efficient equipment upgrades. During the two- to-four-hour audit, the vendor will install free direct install measures and customers will be eligible to receive incentives for a wide range of efficiency upgrades such as heat pump tune-ups, insulation, duct sealing, and HVAC system replacement.

Appliance Recycling. Eligible customers will receive free pick-up services and a rebate when they recycle older refrigerators or freezers.

Customer Engagement. Customers will be provided with information about their home's energy consumption via an electronic or paper Home Energy Report. The Home Energy Report will provide customized suggestions on how to save energy based on a home's characteristics.

2.3.1.1. Objectives

There are several objectives for the Residential Energy Services program:

- Produce long-term energy savings through services that provide education, assessments, and energy savings solutions across housing types and ownership status.
- Encourage customers to view energy efficiency in a holistic manner and pursue deep energy efficiency solutions.
- Establish Dominion Energy as a trusted source of energy efficiency information for customers.
- Promote other energy efficiency programs offered by Dominion Energy.
- Encourage customers to dispose of their existing, inefficient refrigerators and freezers in an environmentally responsible manner.
- Reduce the use of secondary, inefficient refrigerators and freezers.
- Achieve high customer and trade ally satisfaction.

2.3.1.2. Customer Target and Eligibility

The Residential Energy Services program will target all residential customers in Dominion Energy's service territory, while some components and pathways within the program will target specific customer segments.

- The **Online Assessment** will target residential customers who are interested in improving the energy efficiency of their home but may not have access or the decision-making authority to make large upgrade (renters and individual condo owners).
- The **Walk-Through Assessment** will target homeowners with smaller savings potential, such as customers with newer or manufactured homes, who are interested in energy efficiency and may consider upgrading home appliances or equipment.
- The **Diagnostic Audit** will target homeowners with higher-than-average energy bills, who live in neighborhoods with older building stocks or have a desire to maximize the energy efficiency of their home.
- The **Appliance Recycling** component will target residential customers with an operable secondary refrigerator or freezer in their home or who are replacing their primary refrigerator or freezer.
- The **Customer Engagement** component will target residential customers with high energy usage.

Table 13 shows the program eligibility parameters by component.

Table 13. Residential Energy Services Program Customer Eligibility Parameters

	Eligible Customers		
	Home Assessments and Direct Install	**Appliance Recycling**	**Customer Engagement**
Customer Class	Residential customer rate class		
Building Type	Single family or multifamily		
Building Vintage	Existing construction		
Home Ownership	Customer must be owner or provide owner's authorization to participate		Owner or renter
Other	N/A	Unit must be plugged in and operable at the time of pick-up	Customers must be selected by Dominion Energy as part of the treatment group

2.3.1.3. Qualifying Measures and Incentives

All residential customers will be eligible to receive one of several types of home energy assessment at no cost; each participant may receive a range of low-cost efficiency measures with no out-of-pocket cost and have access to incentives for weatherization upgrades, HVAC system and water heater replacements, and equipment services (such as HVAC tune-ups). Participants who recycle a secondary refrigerator or freezer will receive a $20 rebate and free pick-up and disposal of their appliance. A detailed list of program measures, measure qualifications, and customer incentives is provided in *Appendix A*. Dominion Energy will provide Home Energy Reports at no cost to customers on an opt-out basis.

The Residential Energy Services program will consist of the following measure categories.

Home Assessments and Direct Install	Appliance Recycling	Customer Engagement
• Diagnostic audit with blower door test • Direct install LEDs, water conservation measures, and advanced power strips • Weatherization improvements (such as air sealing and insulation), HVAC tune-ups, and heat pump and water heater upgrades	• Refrigerator recycling on units over 10 years • Freezer recycling on units 10 years or older	• Electronic report • Paper report

2.3.1.4. Implementation Strategy

The residential Energy Services program bundles existing Dominion Energy programs that have been analyzed to verify their cost-effectiveness and approved by the SCC.[29] Dominion Energy will use an implementation vendor to deliver each program component. For each component, the Company will

[29] Appendix B provides a summary of existing programs comprised in the long-term Plan's proposed comprehensive programs.

manage the implementation vendor, ensure that data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, review and approve rebate applications, and review and approve customer-facing program information and terms and conditions. Because each component has a separate implementation strategy, delivery will vary.

Home Assessments and Direct Install. The implementation vendor will market the component's pathways to customers, maintain the online assessment platform, recruit and train pre-qualified trade allies to conduct walk-through assessments and diagnostic audits, install direct install measures or assemble and deliver kits to online and virtual participants, document all necessary program data, and cross-promote other Dominion Energy offerings to customers. The trade allies will prepare a customized home assessment report with recommendations for energy efficiency upgrades such as insulation, duct sealing, HVAC equipment, and HVAC tune-ups.

Appliance Recycling. The implementation vendor will provide comprehensive turnkey implementation services, from eligibility verification and scheduling of pick-ups to coordination with the recycling vendor who provides proper disposal and recycling of turned-in appliances. The implementation vendor will also coordinate prompt processing of incentive payments and provide information about other residential program offerings. Dominion Energy may also wish to consider creating retail partnerships to provide an additional delivery channel for customers to recycle their old appliance(s) when they purchase a new unit.

Customer Engagement. This component will rely on behavioral science research, which demonstrates that peer-based comparisons are a highly motivating way to present information and encourage customers to adopt energy-efficient behaviors. Dominion Energy will automatically enroll customers in this component as part of a randomized controlled trial design, randomly assigning eligible customers to a treatment or control group. Treatment group customers will receive six Home Energy Reports periodically throughout the year (and can opt out at any time), as well as supplemental electronic Home Energy Reports delivered to their email on a more frequent basis to reinforce savings messages in the print Home Energy Reports. Control group customers will not receive the reports and will not be told they are part of a control group. The Home Energy Reports will provide energy usage information for each treatment household, offer low- and no-cost energy savings tips, and encourage participation in relevant DSM programs. Information will vary seasonally to align with customer needs throughout the year. The reports will also include a call to action that drives behavior change and engagement with other Dominion Energy programs.

2.3.1.5. Marketing Strategy

Dominion Energy will market the Residential Energy Services program's Home Assessments and Direct Install and Appliance Recycling components. The Company will not market the Customer Engagement component because selected customers are automatically enrolled in the program.

While each component may target different audiences and use a customized messaging strategy, they will all include a call to action that directs customers to the program webpage or call center to schedule an assessment or appliance pickup or to learn more.

Each component relies on several types of general marketing:

- Email marketing
- Bill inserts
- Cross-promotion from other DSM programs
- Call center support
- Paid media (such as print advertising, radio, or digital media)
- Social media advertising
- Program webpage
- In-store advertising
- Sponsorship of, promotion through, and participation in community events

Components that include interactions with trade allies and technical services vendors will also benefit from direct outreach to partners in Dominion Energy's trade ally network, providing them with program, sales, and technical training as well as marketing materials, and sponsorship of or participation in events such as home and trade shows.

The Appliance Recycling component will allow Dominion Energy to offer additional marketing opportunities by partnering with local retailers to promote the program through in-store signage, providing sales training to store associates, and creating program branding on pick-up vehicles.

2.3.1.6. Impacts

Table 14 and Table 15 outline estimated annual investment requirements and impacts based on gross and net energy savings, respectively. *Appendix A* provides participation estimates by measure.

Table 14. Residential Energy Services Annual Estimated Program Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$12,756,483	$12,479,675	$11,252,532	$10,931,059	$10,840,079	$58,259,828
Electric Savings (MWh)	111,494	106,935	93,300	90,423	89,455	478,680
Peak Demand Reduction (MW)	30	27	24	22	22	N/A
GHG Reductions (mCO2e)	95,611	91,701	80,008	77,542	76,711	410,487

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 15. Residential Energy Services Annual Estimated Program Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$12,756,483	$12,479,675	$11,252,532	$10,931,059	$10,840,079	$58,259,828
Electric Savings (MWh)	92,700	90,290	79,740	78,010	77,430	407,165
Peak Demand Reduction (MW)	23	21	18	18	17	N/A
GHG Reductions (mCO2e)	79,494	77,427	68,380	66,897	66,399	349,160

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

2.3.1.7. Cost-Effectiveness

The Residential Energy Services program is cost-effective from three of four test perspectives, as shown in Table 16.

Table 16. Residential Energy Services Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	3.30
Total Resource Cost Test	2.72
Participant Cost Test	16.21
Ratepayer Impact Measure Test	0.46

2.3.2. Residential Efficient Products Program

Dominion Energy will provide incentives for a wide array of energy-efficient equipment through the Residential Efficient Products program. The program has two components, both focused on distributing energy efficiency products to Dominion Energy customers at different price points and through different channels to provide customers with a variety of way to save energy. The Company will offer the Residential Efficient Products program to all residential customers, though eligibility criteria may differ by program component.

Efficient Products. Dominion Energy will provide customers with prescriptive rebates for energy-efficient technologies including lighting, HVAC, water heating, appliances, and electric vehicle chargers. Customers can receive rebates through three pathways:

- **Upstream Delivery.** Customers will be offered discounted products through Dominion Energy's Online Marketplace.
- **Midstream Delivery.** Equipment distributors will offer discounts.
- **Downstream Rebates.** Customers can submit a rebate application for qualifying efficient equipment they install themselves or equipment installed by a Dominion Energy trade ally. Trade allies will apply for an incentive on behalf of the customer and the rebate will be issued to the customer unless they have authorized in writing that payment be made to the trade ally.

Energy Efficient Kits. Dominion Energy will provide two types of energy efficient kits to customers:

- **Smart Home Products Kits.** These kits will contain a home energy hub with an entry/motion sensor and a set of fully integrated, compatible smart products such as a smart thermostat, smart plugs, a connected LED, and a home energy monitor.
- **Welcome Kits.** These kits will include a Tier 1 advanced power strip and an educational insert informing customers about opportunities to manage their energy use.

Both types of kits will include educational materials to help customers adopt energy-efficient behaviors and learn about other Dominion Energy program offerings. Customers can also receive customized kits when they participate in certain home assessments through the Residential Energy Services program.

2.3.2.1. Objectives

There are several objectives for the Residential Efficient Products program:

- Produce long-term residential energy savings through the promotion of high-efficiency consumer products via a convenient online channel, retailer and distributor partnerships, trade allies, and product kits.
- Provide a mechanism for customers to easily obtain discounted products through local retail stores, trade allies, and the Online Marketplace.
- Establish Dominion Energy as a trusted source of information about energy-efficient products for customers and trade allies.
- Promote other energy efficiency programs offered by Dominion Energy.
- Achieve high customer and trade ally satisfaction.

2.3.2.2. Customer Targets and Eligibility

The Residential Efficient Products program will target all residential customers in Dominion Energy's service territory, while both components and the pathways within the program will target specific customer segments.

- The **Efficient Products** component will target all residential customers in Dominion Energy's service territory who purchase a new appliance, heating or cooling system, or other qualifying energy-efficient household product.
- The **Energy Efficient Kits** component will target tech-savvy and security-minded customers for Smart Home Product Kits and residential customers moving to or within Dominion Energy's service territory for Welcome Kits.

Table 17 shows the program eligibility parameters by component.

Table 17. Residential Efficient Products Program Customer Eligibility Parameters

	Eligible Customers	
	Efficient Products	**Energy Efficient Kits**
Customer Class	Residential customer rate class	
Building Type	Single family, multifamily (in unit), and mobile homes	
Building Ownership	Homeowners or renters	
Building Vintage	Existing or new construction	Existing construction
Other	N/A	Only customers with new account numbers can receive Welcome Kits

2.3.2.3. Qualifying Measures and Incentives

Through the Residential Efficient Products program, Dominion Energy will offer prescriptive incentives for a large range of high-efficiency measures at various price points, as well as some energy-efficient kits at no cost to customers. Qualifying efficient products will include electric heating and cooling system replacements, appliances, LED bulbs and fixtures, and thermostats. Energy-efficient kit measures will include lower-cost measures such as low-flow showerheads, LED lighting, and weatherstripping.

The Residential Efficient Products program will consist of the following measure categories.

Marketplace Efficient Products	Midstream/Downstream Efficient Products	Energy Efficient Kits
• ENERGY STAR specialty LEDs • ENERGY STAR appliances, such as refrigerators, freezers, clothes washers and dryers, and dishwashers • ENERGY STAR smart thermostats • ENERGY STAR room air conditioners, dehumidifiers, and air purifiers • Tier 1 advanced power strips	• ENERGY STAR smart thermostats • Heat pump (air-source, mini-split, geothermal) upgrades • Thermostat optimization • Heat pump water heaters • Variable speed pool pump	• Water conservation measures, such as showerheads and aerators • ENERGY STAR specialty LEDs • Weatherstripping and air sealing self-install products • Tier 1 advanced power strips • Smart Home Products Kit

A detailed list of program measures, measure qualifications, and customer incentives is provided in *Appendix A*.

2.3.2.4. Implementation Strategy

The residential Efficient Products program bundles existing Dominion Energy programs that have been analyzed to verify their cost-effectiveness and approved by the SCC.[30] Dominion Energy will use an implementation vendor and trade allies to deliver key elements for each program component. For each component, the Company will manage the implementation vendor, ensure that data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, review and approve rebate applications, and review and approve customer-facing program information and terms and conditions. Because both components have a separate implementation strategy, delivery will vary.

Efficient Products. Dominion Energy will employ upstream and midstream markdowns and downstream rebates to promote the adoption of program equipment. The implementation vendor will recruit distributors, retailers, and contractors to become members of Dominion Energy's trade ally network. Participating trade allies must attend an orientation training offered by the implementation vendor, submit a trade ally participation agreement, and have a valid contractor's license issued by the state of Virginia (if applicable). In return, trade allies will have access to program marketing support, education and training opportunities, and program updates on product specifications, performance criteria, product stocking objectives (if applicable), and data sharing tools.

Dominion Energy will apply product incentives directly to measures offered through its marketplace and will reimburse participating distributors with prescriptive midstream incentives when they discount the cost of qualifying measures throughout the year and during special, limited-term promotions. Trade allies will submit downstream rebate application materials on behalf of their customers, which

[30] Appendix B provides a summary of existing programs comprised in the long-term Plan's proposed comprehensive programs.

significantly reduces the number of flawed applications and improves customer satisfaction. Customers will choose whether to receive the rebate themselves or allocate it to the trade ally and have a discount applied directly to their equipment invoice. The implementation vendor will process all incentive requests and reimbursements, verify eligibility, and manage prompt processing of incentive payments.

Energy Efficient Kits. Dominion Energy's implementation vendor will deliver kits to customers through direct mail. The implementation vendor will assemble and mail both Smart Home Products Kits and Welcome Kits to customers, provide installation instructions and reminders by mail or email, and track customer participation and deemed savings. There are different implementation steps for both kit types:

- Customers will sign up online for their **Smart Home Products Kit**. The implementation vendor will conduct marketing and outreach to educate customers about the kit's availability and benefits. The Smart Home Products Kit will include printed materials to encourage customers to use their smart phone or tablet to access the connected functionality of the Smart Home Products Kit through their smart thermostat, smart home hub, and smart home energy monitor apps. Smart phones, tablet apps, and individual manufacturer websites will include links to videos and other installation "how-to" guidance documents. Program materials will also encourage Smart Home Products Kit customers to enroll separately in the Dominion Energy smart thermostat demand response and HVAC optimization programs based on individual program eligibility requirements.
- The implementation vendor will mail **Welcome Kits** to customers with new Dominion Energy accounts. The kit will include a Tier 1 advanced power strip, an educational insert informing customers about opportunities to manage their energy use, and details of how to receive additional free products through a home assessment or participation in other Dominion Energy programs.

2.3.2.5. Marketing Strategy

When marketing the Residential Efficient Products program, Dominion Energy will strive for visibility across a wide residential audience and will emphasize immediate savings opportunities provided by program incentives or, in some instances, no-cost measures. Secondary messages may include the opportunity for energy bill savings over time, environmental benefits, and increased comfort and/or convenience.

There are several common marketing channels for both components of the Residential Efficient Products program:

- Email marketing
- Bill inserts
- Call center support
- Paid media (such as print advertising, radio, or digital media)
- Social media advertising
- Program webpage

- Cross-promotion from other DSM programs
- Sponsorship of, promotion through, and participation in community events

Additionally, the Company will leverage specific marketing channels for the Efficient Products component:

- Partnerships with retail stores to promote program measures, including point-of-purchase signage and sales associate training
- Joint promotion (which may include advertising, discounts, and product placement) with manufacturers
- Sales assist materials and training for trade allies
- Sponsorship of, promotion through, and participation in industry events and organizations

Marketing approaches, target audiences, messaging strategies, and audience calls to action will align with specific measures and delivery channels. For example, marketing for measures facilitated by trade allies will include trade ally marketing to recruit and support those partners.

2.3.2.6. Impacts

Table 18 and Table 19 outline estimated annual investment requirements and impacts based on gross and net energy savings, respectively. *Appendix A* provides participation estimates by measure.

Table 18. Residential Efficient Products Program Annual Estimated Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$17,213,384	$19,168,405	$12,099,313	$13,329,947	$14,393,692	$76,204,741
Electric Savings (MWh)	149,069	168,717	54,314	62,513	70,006	499,239
Peak Demand Reduction (MW)	18	21	8	10	13	N/A
GHG Reductions (mCO2e)	127,832	144,682	46,577	53,607	60,033	428,117

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 19. Residential Efficient Products Program Annual Estimated Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$17,213,384	$19,168,405	$12,099,313	$13,329,947	$14,393,692	$76,204,741
Electric Savings (MWh)	107,240	122,310	42,760	49,930	56,510	374,589
Peak Demand Reduction (MW)	13	15	7	9	11	N/A
GHG Reductions (mCO2e)	91,963	104,886	36,668	42,817	48,460	321,225

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

2.3.2.7. Cost-Effectiveness

The Retail Efficient Products program is cost-effective from three of four test perspectives, as shown in Table 20.

Table 20. Residential Efficient Products Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	2.85
Total Resource Cost Test	2.01
Participant Cost Test	7.24
Ratepayer Impact Measure Test	0.40

2.3.3. Residential New Construction Program

Dominion Energy will offer incentives to home builders and Home Energy Rating System (HERS) raters to build and inspect new homes that achieve ENERGY STAR certification or a minimum HERS score. To achieve ENERGY STAR certification, new homes must be at least 15% more efficient than code. To qualify for an incentive, participating homes will submit an energy model developed using Ekotrope or REM/Rate energy modeling software, along with a copy of the home's ENERGY STAR certificate (both provided by the rater).

2.3.3.1. Objectives

There are several objectives for the Residential New Construction program:

- Produce long-term residential energy savings through the construction of energy-efficient new homes.
- Accelerate market transformation in the residential new homes sector by encouraging the construction of highly efficient single-family homes.
- Support the construction of high-quality energy-efficient new homes.
- Promote other energy efficiency programs offered by Dominion Energy.
- Achieve high trade ally satisfaction.

2.3.3.2. Customer Targets and Eligibility

The Residential New Construction program will target new home builders, developers, and HERS raters and actively encourage participation from builders who do not consistently build homes to meet current ENERGY STAR standards. To participate in the Residential New Construction program, the new home must be built within Dominion Energy's service territory.

Table 21 shows the program eligibility parameters.

Table 21. Residential New Construction Program Customer Eligibility Parameters

	Eligible Customers
Customer Class	Residential customer rate class
Building Type	Single family, townhomes, two-over-two condos, or low-rise multifamily units (three stories or fewer)
Building Ownership	N/A
Building Vintage	New construction
Other	Homes must meet ENERGY STAR New Homes certification standards

2.3.3.3. Qualifying Measures and Incentives

Through the Residential New Construction program, Dominion Energy will offer incentives to HERS raters and participating builders who build homes to program standards. The ENERGY STAR New Homes certification process offers flexibility for builders to select a custom combination of measures to meet minimum requirements, as assessed through energy modeling. In general, high-efficiency heating and cooling systems, water heater, thermostat, lighting, and appliances are necessary components to achieve ENERGY STAR certification. Additionally, homes must meet certain mandatory requirements regarding insulation levels and installation quality, window performance, and duct leakage. Currently, the state of Virginia has adopted ENERGY STAR version 3.0 standards for new homes.[31] Dominion Energy offers incentives for HERS raters and builders for each ENERGY STAR certified new home they build. A list of program measures, measure qualifications, and customer incentives is provided *Appendix A*.

2.3.3.4. Implementation Strategy

The residential New Construction program has been analyzed to verify cost-effectiveness and approved by the SCC. Dominion Energy will use an implementation vendor to deliver key elements of the Residential New Construction program. The implementation vendor will recruit and train potential builders and HERS raters, assist new home builders and HERS raters with compiling and submitting program documentation, verify new home performance, and issue incentives to builders and HERS raters. Training will cover program participation rules, details about how to market ENERGY STAR and high efficiency homes, and building practices that meet ENERGY STAR standards.

Dominion Energy will manage the implementation vendor, ensure that data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, review and approve rebate applications, and review and approve public-facing program information and terms and conditions.

2.3.3.5. Marketing Strategy

Marketing for the Residential New Construction program will include a push and pull strategy: the push strategy will target new home builders, developers, and HERS raters to influence the supply of program-qualifying new homes while the pull strategy will aim to increase demand among home buyers. The push strategy, targeting builders, will be the larger and more focused of the two marketing campaigns. The pull strategy, targeting home buyers, will maintain a lower but ongoing presence to support momentum in the market.

There are several key *push* marketing channels to recruit trade allies (new home builders, developers, and HERS raters) to participate in the program:

- Program webpage

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[31] ENERGY STAR. November 11, 2020. "ENERGY STAR Single-Family New Homes National Program Requirements, Version 3 (Rev. 11)." https://www.energystar.gov/sites/default/files/National%20Program%20Requirements%20Version%203_Rev%2011.pdf

- Direct marketing (mail, email, in-person, and phone outreach) to trade allies
- Sales assistance material and training for trade allies
- Sponsorship of, promotion through, and participation in industry events and organizations

There are also several key *pull* marketing channels to influence home buyers:

- Newsletters and bill inserts
- Social or digital media advertising
- Program webpage
- Sponsorship of, promotion through, and participation in events (such as home shows)
- Outreach to and training for realtors about the benefits of program-qualified homes

2.3.3.6. Impacts

Table 22 and Table 23 outline estimated annual investment requirements and impacts based on gross and net energy savings, respectively. *Appendix A* provides participation estimates by measure.

Table 22. Residential New Construction Program Estimated Annual Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment	$3,841,740	$4,110,661	$4,398,408	$4,398,408	$4,398,408	$21,147,625
Electric Savings (MWh)	6,851	7,331	7,844	7,844	7,844	37,715
Peak Demand Reduction (MW)	4	4	4	4	4	N/A
GHG Reductions (mCO2e)	5,875	6,287	6,727	6,727	6,727	32,342

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 23. Residential New Construction Program Estimated Annual Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment	$3,841,740	$4,110,661	$4,398,408	$4,398,408	$4,398,408	$21,147,625
Electric Savings (MWh)	5,960	6,380	6,820	6,820	6,820	32,800
Peak Demand Reduction (MW)	3	4	4	4	4	N/A
GHG Reductions (mCO2e)	5,111	5,471	5,848	5,848	5,848	28,127

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

2.3.3.7. Cost-Effectiveness

The Residential New Construction program is cost-effective from three of four test perspectives, as shown in Table 24.

Table 24. Residential New Construction Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	2.10
Total Resource Cost Test	1.05
Participant Cost Test	2.06
Ratepayer Impact Measure Test	0.52

3. Income and Age Qualified Sector

This Plan proposes that the income-qualified sector of Dominion Energy's Plan will have access to one comprehensive program designed to provide eligible customers with a diverse range of opportunities to reduce their electricity usage. These offerings range from education about energy savings behaviors to in-home and nonresidential facility energy assessments and installation of energy-efficient improvements, as well as opportunities for residential customers to install solar electric systems. Income-qualified, disabled, and veteran customers across housing types and ownership status, as well as eligible nonresidential facility operators, will find opportunities to participate in the program. With the adoption of the VCEA, Dominion Energy will significantly advance its support for and commitment to its income-qualified customers through increased investment in IAQ program offerings and commitment to reaching diverse and hard-to-reach communities including veterans and the elderly and the facilities that house them.

This section provides sector-level objectives and goals, a customer profile, and detailed descriptions of the program implementation strategy.

3.1. Sector-Level Objectives and Goals

Income-qualified customers are estimated to contribute 2.5% of the overall portfolio's energy savings. Additionally, the IAQ program is designed to achieve several sector-level objectives:

- Expand program reach and energy savings through enhanced marketing and outreach and by providing a comprehensive pathway where income-qualified customers across housing types and ownership status, as well as qualifying nonresidential housing facilities, can access energy saving opportunities and (residential) solar electricity generation.
- Support local economic growth and skills development while maximizing program resources by leveraging local income-qualified assistance organizations and installation vendors to implement the program.
- Identify program service and/or participation gaps to ensure equitable delivery across the service territory and maximize program savings, resource efficiency, and customer support.
- Track program uptake from assessments to measure installations and conduct outreach to customers who may need additional support to complete recommended efficiency upgrades.

Table 25 and Table 26 present estimated annual investment requirements and impacts based on gross and net energy savings, respectively.

Table 25. Income and Age Qualified Sector Annual Estimated Gross Savings and Budget

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$14,224,459	$15,393,890	$15,394,165	$15,410,049	$15,423,100	$75,845,663
Electric Savings (MWh)	10,106	10,600	10,591	10,591	10,591	43,990
Peak Demand Reduction (MW)	8	8	8	8	8	N/A
GHG Reductions (mCO2e)	8,666	9,090	9,082	9,082	9,082	37,723

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 26. Income and Age Qualified Sector Annual Estimated Net Savings and Budget

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$14,224,459	$15,393,890	$15,394,165	$15,410,049	$15,423,100	$75,845,663
Electric Savings (MWh)	8,330	8,720	8,710	8,710	8,710	35,433
Peak Demand Reduction (MW)	6	6	6	6	6	N/A
GHG Reductions (mCO2e)	7,143	7,478	7,469	7,469	7,469	30,386

[a] The table totals represents the incremental sum of values that include considerations of attrition from prior installed measures.

3.2. Sector-Level Profile

The median household income in Virginia is $76,500, over $10,000 higher than the national average of $65,700. Nearly 10% of people in Virginia live in poverty, compared to 12% in the overall U.S. population. Although most of the Dominion Energy service territory has a lower poverty rate than the national average, a few counties have higher levels of poverty, particularly counties south of Richmond such as Prince Edward, Nottoway, Brunswick, Greensville, and Sussex, which have poverty rates between 20% and 21%. In addition, the counties of Lunenburg, Charlotte, Mecklenburg, Halifax, and Pittsylvania have poverty rates between 15% and 20%.[32]

Income and Age Qualifying Definition

Customers whose annual income **does not exceed 80%** of the local area median income as set forth by Virginia Housing **or 60%** of the state median income as determined by Virginia Department of Housing and Community Development, whichever is greater.

Income-qualified customers spend a larger portion of their income for home energy bills, including electricity, natural gas, and other heating fuels, compared to non-income-qualified Virginians. Areas where residents spend more than 6% of income on home energy bills[33] overlap with areas that have higher poverty rates, such as the counties south of Richmond, which average 4% to 8% of income spent on energy.[34] None of the counties in Virginia have an average energy burden higher than 9% (of income going to pay energy bills). The proportion of Virginians with an energy burden exceeding 6% of their income (2% of Virginia residents) is low compared to the national average of 25%.

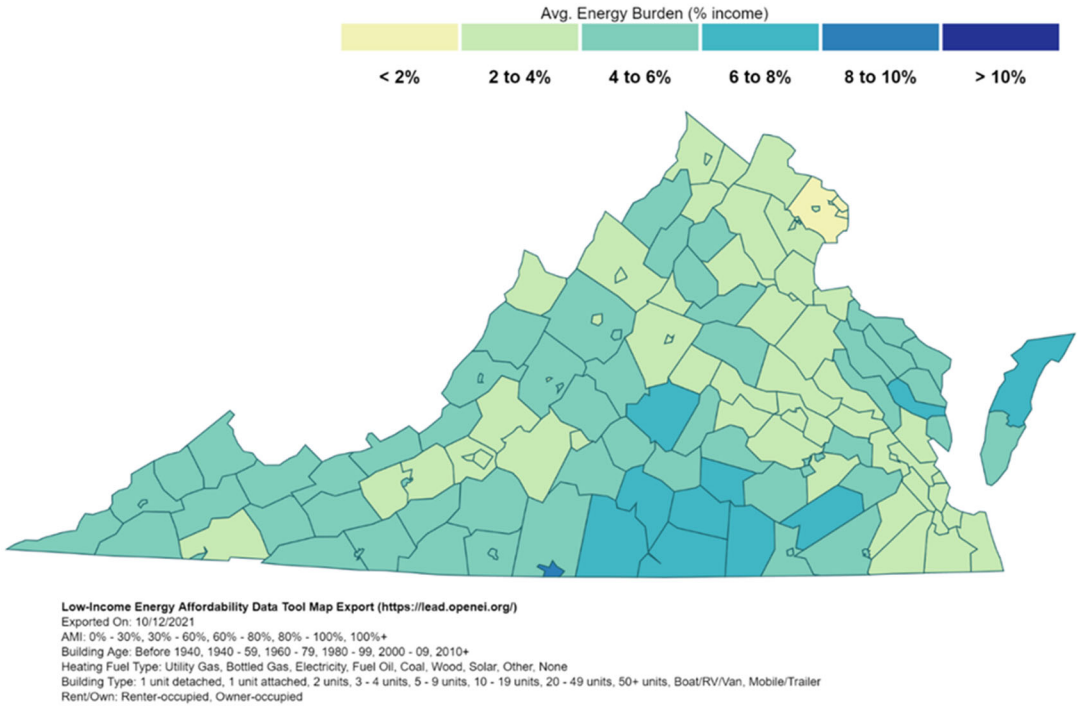
[32] U.S. Department of Agriculture, Economic Research Service. Last updated January 5, 2021. "Percent of Total Population in Poverty, 2019." https://data.ers.usda.gov/reports.aspx?ID=17826

[33] Spending more than 6% of income on home energy bills is defined as having a high energy burden according to the American Council for an Energy Efficient Economy. September 10, 2020. "How High are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the United States." https://www.aceee.org/research-report/u2006

[34] U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. n.d. "Low-Income Energy Affordability Data (LEAD) Tool." https://www.energy.gov/eere/slsc/maps/lead-tool

Figure 7 shows the average energy burden in each Virginia county. Counties with the highest rates of residents with an energy burden that exceeds 6% of income include Middlesex, Buckingham, Sussex, and a cluster of counties along the south-central state line around Mecklenburg county.

Figure 7. Average Energy Burden (based on percentage of income) for Counties in Virginia



Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. n.d. "Low-Income Energy Affordability Data (LEAD) Tool." https://www.energy.gov/eere/slsc/maps/lead-tool

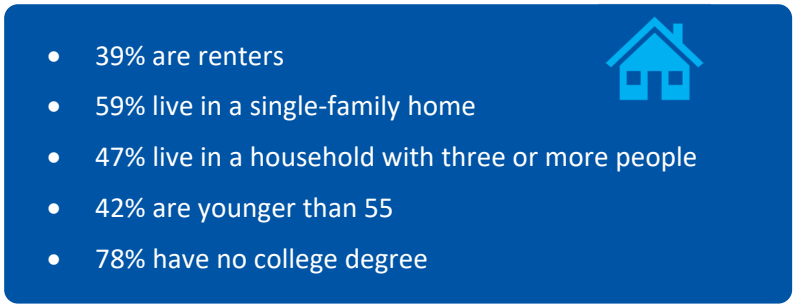
As noted, Virginia's population is growing. By 2030, nearly 20% of the population will be over 65 years old, compared to just 12% in 2010. By 2040, the population under 50 years old is projected to be smaller than the population over 50 years old. Virginia also has a high density of veterans, at 10%[35] compared to 7% of the overall U.S. population, with most veterans living in Fairfax and Prince William counties near Washington DC.[36] According to the 2020 Census, Virginia's diversity index, at 60.5%, is near the national index of 61.1%, with the three largest metropolitan areas—Northern Virginia, Richmond, and Tidewater/Hampton Roads—being the most diverse areas of the state.

[35] Index Mundi. n.d. "Virginia Veterans - Total, 2014–2018 by County." https://www.indexmundi.com/facts/united-states/quick-facts/virginia/veterans#map

[36] World Population Review. 2021. "Virginia Population 2021." Data from American Community Survey and Census Bureau. https://worldpopulationreview.com/states/virginia-population

In Cadmus' survey of Dominion Energy residential customers, 246 reported income and household size characteristics that met the current state median eligibility criteria for the Weatherization Assistance program. Figure 8 presents a snapshot of income-qualified survey respondents.

Figure 8. Income and Age Qualified Survey Respondent Key Household Characteristics



In addition to the characteristics noted in Figure 8, income-qualified respondents were more likely than non-income-qualified respondents to indicate that someone in the household is disabled (29% versus 14%) or that a language other than English is spoken in the home (12% versus 6%). Furthermore, 29% of income-qualified respondents were age 65 or older and 15% reported having a veteran in the household.

Key findings from Cadmus' survey, summarized below, reflect income-qualified customer characteristics that can inform the marketing and outreach strategy outlined in chapter 5 of this long-term Plan.

To an even greater extent than in the general residential population, income-qualified customers have low familiarity with Dominion Energy's programs and look to the Company to provide information. Most income-qualified customers (82%) reported being *a little bit familiar* to *not at all familiar* with Dominion Energy's DSM programs and 31% reported hearing about a Dominion Energy program in the past year, which is lower than the rate for non-income-qualified customers (43%). When asked how they wanted to receive information about energy efficiency programs, income-qualified respondents identified the same top two methods as non-income-qualified respondents: Dominion Energy emails (64%) and Dominion Energy bill (29%).

Income-qualified respondents are more likely than non-income-qualified customers to prefer text messaging (27% versus 15%) to receive information on Dominion Energy's programs.[37] This preference for emails and text messaging points to the possibility that electronic communication barriers are decreasing for this cohort.

Like with the non-income-qualified customers, the combination of income-qualified customers' limited program awareness and their view of Dominion Energy as a trusted source of information suggests that

[37] This difference is not correlated with age within the customer segment.

increased program promotion and general portfolio marketing could help overcome the lack of awareness among customers in this sector.

Although income-qualified customers face similar challenges to making energy saving home improvements as non-income-qualified customers, these challenges may be more acute. Both groups said they do not know where to start with making energy saving improvements to their homes, although income-qualified respondents gave lower ratings than non-income-qualified customers regarding their knowledge of ways to save energy. Both groups also frequently cited the upfront cost of energy efficiency upgrades as prohibitive; however, this was noted by more income-qualified respondents (47%) than non-income-qualified respondents (36%). Finally, income-qualified respondents were more likely than non-income-qualified customers to live in rental housing (39% versus 12%) and in housing other than a single-family home (41% versus 24%).

Despite perceived barriers, income-qualified customers are interested in program participation. Most income-qualified respondents indicated that they are interested in participating in efficiency programs (89%) and are motivated by programs that will help them reduce energy bills (82%), obtain free energy saving devices (47%) or rebates on energy-efficient appliances (40%), and improve the air quality in their home (38%). Compared to non-income-qualified respondents, income-qualified respondents are less motivated to participate in energy saving programs to increase the value of their home, reduce waste, or help the environment.

These findings suggest an opportunity for Dominion Energy to reduce participation barriers by making customers more aware of existing programs, educating them about how to save energy in their homes, and linking energy savings to reduced energy costs.

3.3. Sector-Level Strategies

This section provides a detailed description of the IAQ program including objectives, customer targets and eligibility, qualifying measures and incentives, implementation and marketing strategies, estimated budget and impacts, and the results from Cadmus' cost-effectiveness screen.

3.3.1. Income and Age Qualified Program

Through the IAQ program, Dominion Energy will provide customers with education about energy saving behaviors and opportunities to increase their home or facility energy efficiency, along with incentives for energy efficiency services such as home or facility energy assessments and equipment tune-ups, as well as for energy efficiency measures such as insulation and direct install measures when they receive an energy assessment. The program has three components.

Home Assessments and Direct Install. Dominion Energy will partner with state weatherization service providers and local vendors to provide eligible customers with in-home energy assessments, direct install measures, installation of energy efficiency HVAC equipment and health and safety

improvements,[38] and opportunities to install solar. Customers will only receive solar incentives after they receive incentives for weatherization or HVAC efficiency improvements. Providers will deliver the program to customers alongside Dominion Energy's privately funded EnergyShare program and state-funded energy efficiency services, combining funding streams from the three programs to maximize efficiency improvements per home based on need.

Nonresidential Facilities. Dominion Energy will offer to install select energy efficiency measures at nonresidential facilities in its service territory that house income-qualified residents and where the electric bill is paid by the property owner or manager. This could include housing authority and master metered properties, assisted living residences, and nursing homes. Dominion Energy will offer energy efficiency measures similar to those offered through the Home Assessments and Direct Install component, with weatherization assistance providers leading program delivery.

Customer Engagement. Dominion Energy will provide customers with information about their home's energy consumption via an online or paper Home Energy Report, which provides customized suggestions on how to save energy based on a home's characteristics.

3.3.1.1. Objectives

Through the IAQ program, Dominion Energy aims to achieve several objectives:

- Produce long-term energy savings through a comprehensive pathway where income-qualified customers can access no-cost energy saving improvements and residential solar photovoltaic systems across housing types and ownership status.
- Educate income-qualified customers about energy saving behaviors.
- Reduce income-qualified customers' energy burden.
- Establish Dominion Energy as a trusted source of energy efficiency information.
- Achieve high customer and trade ally satisfaction.
- Promote other energy efficiency programs offered by Dominion Energy.
- Increase the health and safety of income-qualified customers' homes.

3.3.1.2. Customer Targets and Eligibility

The IAQ program will target income-qualified residential customers and nonresidential facilities that serve income-qualified communities in Dominion Energy's service territory, including veterans and disabled customers. The program's priority target will be eligible customers who meet the requirements for program participation as well as healthcare and rental property owners that house income-qualified customers. Table 27 shows the program eligibility parameters by component.

[38] Up to 15% of the program funding can go toward health and safety improvement measures.

Table 27. Income and Age Qualified Program Customer Eligibility Parameters

Eligible Customers			
	Nonresidential Facilities	**Home Assessments and Direct Install**	**Customer Engagement**
Customer Class	Nonresidential customer rate class	Residential customer rate class	
Building Type	Housing authorities, assisted living centers, nursing homes, master metered properties	Single family, multifamily, manufactured, or mobile homes	
Ownership Type	Customer must be private facility owner or provide owner's authorization to participate	Customer must be a homeowner or provide owner's authorization to participate	Owner or renter
Building Vintage	Existing construction		
Other [a]	Nonresidential housing facilities in which most residents meet the required income threshold	Households that meet the required income threshold	Households selected by Dominion Energy that meet the required income threshold

[a] To meet income-qualifying standards, households must have a combined annual income equal to or less than 80% of the local area median income as defined by Virginia Housing or 60% of the state median income as determined by the Virginia Department of Housing and Community Development, whichever is greater, and customers who are 60 years or older with a household income of 120% of the state median income.

3.3.1.3. Qualifying Measures and Incentives

Through the IAQ program, Dominion Energy will offer home and facility assessments, critical repairs of health and safety issues, and the direct installation of energy-efficient upgrades at no cost to qualified customers, along with energy usage and conservation education. The IAQ program is designed to address each home or facility's specific needs. Dominion Energy will customize upgrades based on recommendations from the assessment, which may range from low-cost items such as LED bulbs, showerheads, aerators, and advanced power strips to weatherization improvements and HVAC system and appliance replacements. A detailed list of program measures, measure qualifications, and customer incentives is provided in *Appendix A*.

3.3.1.4. Implementation Strategy

The IAQ program bundles existing Dominion Energy programs that have been approved by the SCC.[39] Dominion Energy will use an implementation vendor to deliver each program component. For each component, the Company will manage the implementation vendor, ensure that data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, review and approve rebate applications, and review and approve customer-facing program information and terms and conditions. Because each component has a separate implementation strategy, delivery will vary.

Home Assessments and Direct Install. The implementation vendor will manage relationships with the state's weatherization services providers, subcontract with local vendors in geographic areas where the

[39] Appendix B provides a summary of existing programs comprised in the long-term Plan's proposed comprehensive programs.

weatherization service providers lack the staff capacity to deliver the program or there is no provider present, confirm customer eligibility, and manage a program tracking database. The weatherization service providers and local subcontractors will market and implement the program to eligible customers, conduct free in-home assessments, and install free measures. Installed measures will include low-cost direct install measures, weatherization, health and safety, and large system upgrades such as HVAC and water heaters. Residential customers who receive HVAC system upgrades may be eligible for solar photovoltaic systems. Independent subcontractors, such as HVAC contractors or electricians, will often perform measure installation and the weatherization service providers' energy auditors will act as construction managers until all measures are installed during and after the assessment.

The weatherization service providers will deliver the Home Assessments and Direct Install component alongside the state-funded Weatherization Assistance program and Dominion Energy's privately funded EnergyShare program to maximize benefits for income-qualified customers. An individual customer's home upgrades will often be funded through multiple programs, with the weatherization service providers allocating program funds to each measure based on the customer needs, ensuring equity and remaining in compliance with each program's rules. For example, state Weatherization Assistance program funds can be used for repairs to or replacements of natural gas equipment, which are ineligible for the IAQ program, and the EnergyShare program can target apartments occupied by residents whose incomes are too high to qualify for the IAQ program but where the majority of multifamily building residents are program eligible.

Nonresidential Facilities. Like the Home Assessments and Direct Install component, the implementation vendor will manage relationships with qualified local providers who offer weatherization-related services through the Virginia Department of Housing and Community Development and are approved to provide assessment services and installation of qualifying equipment under the Home Assessments and Direct Install component. These providers will market the program to eligible nonresidential customers, conduct free on-site facility assessments, and install free measures. Installed measures will include low-cost direct install measures, weatherization, and large system upgrades such as appliances, windows, and water heaters, as well as equipment maintenance such as heat pump or air conditioning tune-ups. Independent subcontractors, such as HVAC contractors or electricians, can perform measure installation and equipment tune-ups and the weatherization service providers' energy auditors will act as construction managers until all measures are installed during and after the assessment.

Customer Engagement. The program implementer will run the program between June and September of each year. The implementation vendor will send Energy Target Reports in the late spring to treatment group customers via mail or email, establishing a goal for each customer to target energy savings of 1% to 4% compared to their previous year's energy consumption data. The report will identify the customer's energy reduction targets and include a list of three or four energy savings tips to help the customer achieve their targets, as well as information on the Company's other applicable DSM program offerings. The implementation vendor will also send customers a mid-summer update to show their progress, and a final report that identifies the customer's achievement of target goals. Customers can opt out of participation in the component at any time.

3.3.1.5. Marketing Strategy

The income-qualified sector encompasses multiple hard-to-reach audiences. Dominion Energy will use a tailored program marketing strategy when communicating with these different communities. There are three categories of targeting strategies to consider:

- **Qualifying characteristics.** Income, age, disability, veteran status, or owners of facilities that provide housing for these communities
- **Home type.** Single family, multifamily, mobile home, manufactured home, housing authority and master metered properties, assisted living, nursing home
- **Language.** Non-English speakers

As noted in the *Sector-Level Profile* section above, income-qualified customers have low levels of awareness of Dominion Energy's programs or ways to make their homes more efficient. Their most significant barrier to adopting energy-efficient technologies is perceived cost. Therefore, the strategy for reaching these customer groups should include a broad messaging approach centered on reducing energy costs, highlighting the program as a free offering, and positioning Dominion Energy as a trusted resource for energy efficiency information and support.

Key elements of the IAQ program marketing strategy include ensuring that program information is easy to find and using targeted direct outreach and partner marketing.

- Easy discovery ensures that eligible customers who are searching for assistance and resources find program information. There are several key tactics:
- Program webpage and search engine optimization
- Paid search advertising
- Call center support to direct customers with high bills or arrears inquiries to program information
- Participation in community events
- Targeted direct outreach brings IAQ program offerings to the attention of eligible customers. There are many key tactics:
- Text messaging and email outreach (noted by income-qualified survey respondents as a preferred outreach channel)
- Direct mail and phone outreach to facilities housing income-qualified residents and customers who are participating in bill assistance programs, struggling to pay their bills, or who have otherwise indicated that they qualify for the IAQ program
- Door-to-door outreach in income-qualified neighborhoods and buildings, mobile home parks, and manufactured home developments
- In-person visits to qualifying nonresidential facilities
- Partner marketing will leverage eligible customers' association with support organizations to identify potential participants. Partner marketing can take the form of participating in events or sharing material through partner organizations' communication channels. Different types of partner organizations will be helpful to reach the different segments:

- **Income-qualified customers.** Community action agencies, food assistance programs, and housing facilities
- **Age-qualified customers.** Senior centers, local AARP chapters, and nursing or elder care facilities
- **Disabled customers.** Job placement services, support organizations for people with disabilities, and housing facilities
- **Veteran customers**. Local veteran networks, Veteran Affairs service organizations, and supportive housing for veteran families

Dominion Energy will not market the Customer Engagement component because selected customers are automatically enrolled in the program.

3.3.1.6. Impacts

Table 28 and Table 29 outline estimated annual investment requirements and impacts based on achieving gross and net energy savings, respectively, to achieve the VCEA targets. *Appendix A* provides participation estimates by measure.

Table 28. Income and Age Qualified Program Annual Estimated Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$14,224,459	$15,393,890	$15,394,165	$15,410,049	$15,423,100	$75,845,663
Electric Savings (MWh)	10,106	10,600	10,591	10,591	10,591	52,477
Peak Demand Reduction (MW)	8	8	8	8	8	N/A
GHG Reductions (mCO2e)	8,666	9,090	9,082	9,082	9,082	45,001

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 29. Income and Age Qualified Program Annual Estimated Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment	$14,224,459	$15,393,890	$15,394,165	$15,410,049	$15,423,100	$75,845,663
Electric Savings (MWh)	8,330	8,720	8,710	8,710	8,710	43,180
Peak Demand Reduction (MW)	6	6	6	6	6	N/A
GHG Reductions (mCO2e)	7,143	7,478	7,469	7,469	7,469	37,029

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

3.3.1.7. Cost-Effectiveness

The IAQ program is not cost-effective, as shown in Table 30. However, Virginia Law § 56-576 stipulates that programs that provide energy savings to income-qualified customers are not required to be cost-effective to be deemed as in the public interest.

Table 30. Income and Age Qualified Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	0.48
Total Resource Cost Test	0.48
Participant Cost Test	N/A
Ratepayer Impact Measure Test	0.29

4. Nonresidential Sector

This long-term Plan proposes three comprehensive programs designed to provide large and small nonresidential customers with a range of opportunities to reduce their electricity usage: Large Business Solutions, Small Business Solutions, and a dedicated Nonresidential New Construction program. The Large and Small Business Solutions programs will offer options for interested customers to implement individual measure upgrades or comprehensive, complex facility upgrades. Dominion Energy will also offer a prescriptive component that provides downstream and midstream incentives for a range of efficient equipment measures. Small nonresidential customers will have access to technical support, facility assessments, and enhanced incentives for customers wanting to take a more custom efficiency path, while large nonresidential customers can pursue comprehensive custom facility upgrades when they demonstrate project cost-effectiveness. The Nonresidential New Construction program will promote efficient building practices in the nonresidential sector. Bundling multiple discrete components and pathways under broad programs tailored to a customer's energy demand will create an opportunity for Dominion Energy to build lasting relationships with business customers by supporting their energy efficiency journey and enables the Company to gain credibility as a trusted and knowledgeable energy partner.

This section provides sector-level objectives and goals, a customer profile, and detailed descriptions of each nonresidential program implementation strategy.

4.1. Sector-Level Objectives and Goals

Nonresidential customers are estimated to contribute 49% of the overall portfolio's energy savings. Additionally, the nonresidential programs are designed to achieve several sector-level objectives:

- Engage small and large nonresidential customers to participate in expanded programs and make deeper energy efficiency upgrades in their facilities.
- Provide information on opportunities to improve energy efficiency in customers' businesses as well as education and informational resources to help them adopt efficient behaviors.
- Enhance marketing and outreach to increase program awareness, particularly among large nonresidential customers who have historically been less engaged.
- Drive the market for high-efficiency new commercial construction practices.
- Provide robust trade ally, builder, and retailer partner support of the expanded program offerings.

Table 31 and Table 32 present estimated annual investment requirements and impacts based on gross and net energy savings, respectively.

Table 31. Nonresidential Sector Annual Estimated Gross Savings and Budget

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$23,784,914	$39,378,470	$43,336,254	$45,514,498	$45,930,761	$197,944,897
Electric Savings (MWh)	98,824	197,602	233,569	251,845	262,027	955,740
Peak Demand Reduction (MW)	21	37	40	42	42	N/A
GHG Reductions (mCO2e)	84,745	169,451	200,295	215,967	224,699	819,585

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 32. Nonresidential Sector Annual Estimated Net Savings and Budget

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$23,784,914	$39,378,470	$43,336,254	$45,514,498	$45,930,761	$197,944,897
Electric Savings (MWh)	87,200	162,460	188,610	203,140	210,410	766,952
Peak Demand Reduction (MW)	19	32	34	35	36	N/A
GHG Reductions (mCO2e)	74,777	139,316	161,741	174,201	180,435	657,692

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

4.2. Sector-Level Profile

Virginia is a leader in technological innovation, with one of the most highly trained and productive workforces in the nation. Home to 37 Fortune 1000 companies, 56 corporate headquarters, more than 550 internationally owned companies, and all the Global Top 10 information technology services companies, Virginia is one of largest markets served by Dominion Energy.[40] The key industries served by Dominion Energy include data centers, energy intensive manufacturing, and food and beverage services.

Nonresidential Customers

Large nonresidential customers are defined as those with **greater than 100 kW of historical energy demand** while small nonresidential customers are those with **100 kW or lower historical demand**.

The United States Government—Virginia's largest employer—employs approximately one-quarter of the Commonwealth's residents.[41] The proximity to Washington DC and the large defense industry in Northern Virginia generates high demand for data storage. It is estimated that each day almost 70% of the world's internet traffic flows through Virginia data centers. Dominion Energy currently provides electricity to over 12 million square feet of commissioned data center space.[42] In addition, the state's food processing sector is comprised of several well-known companies, including Hershey, Lipton,

40 Dominion Energy Economic Development. 2020. "Virginia." https://economicdevelopment.dominionenergy.com/va/our-region/virginia/

41 World Population Review. 2021. "Virginia Population 2021." Data from American Community Survey and Census Bureau. https://worldpopulationreview.com/states/virginia-population

42 Dominion Energy Economic Development. 2020. "Data Centers." https://economicdevelopment.dominionenergy.com/va/key-industries/data-centers/

MillerCoors, Gatorade, Sabra, Stone Brewing, and many more. The state's food processing industry accounts for more than 16% of total manufacturing jobs, with over 39,000 employees.[43]

Cadmus surveyed Dominion Energy's nonresidential customers and received 513 responses representing a variety of industry types and sizes. The most common industries were retailers (14%), houses of worship (12%), restaurants, lodging, and hospitality (10%), and personal services (8%). Most (85%) were smaller organizations (with monthly demand of 100 kW or below), while 14% were larger companies (with monthly demand above 100 kW) and 1% were unclassified.[44] Figure 9 presents a snapshot of nonresidential survey respondents.

Figure 9. Nonresidential Survey Respondent Characteristics

- 55% are building owners
- Business types: warehouses, healthcare, houses of worship, agriculture, property management, and nonprofits
- 80% have only one location
- 54% are in facilities heated by electricity
- 6% monitor energy use with an energy management system or software app

Key findings from Cadmus' survey, summarized below, reflect nonresidential customer characteristics that can inform the marking and outreach strategy outlined in chapter 5 of this long-term Plan.

Like residential customers, nonresidential customers are largely unfamiliar with Dominion Energy programs. While there is a high degree of variability in nonresidential sector business types and needs, only 9% of surveyed customers reported being *somewhat familiar* or *very familiar* with the Company's programs and only 12% have participated in a Dominion Energy DSM program in the past. Nonresidential respondents prefer email (69%) as the best way to hear about Dominion Energy offerings, with information in the bill as a second-best method (36%). Nearly half (49%) said they were *somewhat likely* or *very likely* to participate in a Dominion Energy program in the next three years.

Some nonresidential customers are already engaged in efficiency and interested in Dominion Energy programs to help them save further on their utility bills; however, upfront equipment cost remains a

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[43] Dominion Energy Economic Development. 2020. "Food & Beverages." https://economicdevelopment.dominionenergy.com/va/key-industries/food-beverages/

[44] Cadmus used rate type codes from customer data to categorize companies as smaller or larger. Rate types do not directly correspond to company size but were used as a proxy in this research. We categorized rate types where most customers had above average kilowatt load ranges as larger and categorized the rest as smaller.

significant barrier. Among nonresidential survey respondents who had participated in a Dominion Energy program, most (85%) said they installed efficient lighting or controls, and another 43% plan to install further lighting upgrades. In addition, 46% said their organization usually approves energy efficiency upgrades in less than one month of when they decide to complete a project. Nonresidential respondents are most interested in energy-efficient equipment rebates (84%) and online resources (81%) from Dominion Energy and are motivated to invest in energy efficiency to save money on their utility bills (76%). However, 77% believe their current systems are operating satisfactorily and upgrade equipment only when necessary, and 64% consider energy efficiency upgrades to be too costly.

4.3. Sector-Level Strategies

This section provides detailed descriptions of each nonresidential program including objectives, customer targets and eligibility, qualifying measures and incentives, implementation and marketing strategies, estimated budget and impacts, and cost-effectiveness results.

4.3.1. Large Business Solutions Program

Through the Large Business Solutions program, the Company will provide its large nonresidential customers with education about energy savings management practices and opportunities to increase their facilities' energy efficiency, as well as access to custom and prescriptive incentives. The Large Business Solutions program will be offered to all nonresidential customers with monthly demand greater than 100 kW, though eligibility criteria may differ by program component. There will be three program components.

Facility Audit. Customers will receive a free walk-through facility audit to identify energy efficiency improvement opportunities. After the audit, customers will receive recommendations for facility upgrades and information about qualifying prescriptive and custom rebates. Customers with potential custom projects will be directed to a feasibility assessment for a more comprehensive engineering review and economic analysis.

Prescriptive Rebates. The Company will promote high-efficiency equipment via midstream and downstream incentives pathways. Through the midstream pathway, Dominion Energy will offer incentives to distributors to discount the cost of selected products including lighting, HVAC, and food service equipment. Through the downstream pathway, customers or trade allies will submit rebate applications for qualifying equipment. The Company will issue incentives to the utility account holder unless the customer provides written authorization for the trade ally to receive the incentive.

Custom Rebates. The Company will help nonresidential customers analyze and select high-efficiency equipment or process improvements that are not covered under the Prescriptive Rebates component or that include multiple complex or interacting equipment upgrades. These projects tend to be more complex and require an economic analysis to ensure they are cost-effective, as well as technical support and assistance to complete the incentive application process from a program implementer. The

Company will also provide performance-based incentives for installed measures based on the amount of energy saved. This component contains four delivery pathways:

- **Feasibility Assessment.** A qualified Dominion Energy trade ally will provide technical assistance to assess nonresidential customers' energy efficiency opportunities and determine the economic viability and cost-effectiveness of custom energy efficiency projects.
- **Custom Projects.** Dominion Energy will provide rebates for energy efficiency measures and projects that are not included in the Prescriptive Rebate program component due to size, scope, or equipment characteristics.
- **Strategic Energy Management.** Dominion Energy's implementation vendor will provide ongoing support and training to help facility managers and staff identify energy saving opportunities through building optimization and commissioning best practices, along with information and technical resources through a customer engagement portal and peer-to-peer engagement with other facility teams to adopt strategic energy management best practices. Customers enrolled in the Strategic Energy Management pathway will be eligible for incentives based on verified improvements in their facility energy performance and will generally engage with the program for two to three years.
- **Building Optimization**. Dominion Energy will provide rebates for completing actions that optimize building energy performance such as retro- and recommissioning, system tune ups, and leak repair.

4.3.1.1. Objectives

Through the Large Business Solutions program, Dominion Energy will aim to generate energy savings for its nonresidential customers through technical support and financial incentives on high-efficiency equipment. There are several objectives for the Large Business Solutions program:

- Increase the market share of commercial-grade high-efficiency technologies sold through a range of market channels.
- Establish Dominion Energy as a trusted source of energy efficiency information for customers.
- Influence business customers to select and install high-efficiency equipment and projects as well as whole-facility solutions that include process improvements or projects involving multiple technologies.
- Reduce energy use and improve the performance of existing long-life equipment to ensure peak operating efficiency for business customers.
- Educate and train nonresidential facility management staff in energy management best practices that increase awareness of operational and behavioral energy savings opportunities.
- Achieve high customer and trade ally satisfaction.

4.3.1.2. Customer Targets and Eligibility

Dominion Energy will target nonresidential electric customers in its service territory with 100 kW or greater monthly demand for participation in the Large Business Solutions Program. For each program component, the Company will target specific nonresidential customers:

- Through the **Facility Audit** component, Dominion Energy will target businesses that do not have dedicated facility management staff, those in older facilities, and customers who may need assistance understanding their efficiency opportunities or developing a business case for energy efficiency improvements for their management team.
- Through the **Prescriptive Rebates** component, Dominion Energy will target all large nonresidential customers who wish to purchase qualifying equipment or services through distributors or trade allies.
- Through the **Custom Rebates** component, Dominion Energy will target large nonresidential customers with high energy use and large, complex facilities that would benefit from a custom approach or who wish to install non-prescriptive measures. Target customers will include data centers, hospitals, large office buildings, manufacturing facilities, telecommunications, and similar facilities.

Table 33 shows the program eligibility parameters by component.

Table 33. Large Business Solutions Program Eligibility Parameters

	Eligible Customers		
	Facility Audit	**Prescriptive Rebates**	**Custom Rebates**
Customer Class	Nonresidential customers		
Building Type	Nonresidential facilities and multifamily properties		
Building Ownership	Customer must be facility owner or provide owner's authorization to participate		
Building Vintage	Existing or new construction		
Other	Customers with demand of at least 100 kW		

4.3.1.3. Qualifying Measures and Incentives

The Large Business Solutions program will offer prescriptive and performance-based incentives for a wide array of energy saving solutions. These incentives are designed to help customers engage with energy efficiency in whatever way best meets their needs.

The Large Business Solutions program consists of the following measure categories.

Prescriptive Rebates	Custom Rebates	Facility Audit
• Agricultural measures • Motors and variable frequency drives • Compressed air • Consumer electronics • Midstream HVAC equipment • Commercial cooking and refrigeration equipment • Lighting and controls	• Comprehensive feasibility audit (ASHRAE Level 2 or similar) • Custom projects • Strategic energy management • Building optimization	• Walk-through audit (ASHRAE Level 1 or similar)

Please see a full list of available program measures, measure qualifications, and customer incentives in *Appendix A*.

4.3.1.4. Implementation Strategy

The residential Energy Services program bundles existing Dominion Energy programs that have been analyzed to verify their cost-effectiveness and approved by the SCC with proposed new program components that passed Cadmus' cost effectiveness screening.[45] Dominion Energy will need to develop detailed program design parameters to support cost-benefit assessment needed for regulatory filings for the new components. Dominion Energy will use an implementation vendor to deliver key elements of each program component, such as reviewing and approving rebate applications and processing incentive payments. For each component, the Company will manage the implementation vendor, ensure that data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, and review and approve customer-facing program information and terms and conditions. Because each component has separate implementation strategies, delivery will vary.

Facility Audit. The implementation vendor will recruit and train pre-qualified contractors to conduct facility audits and provide a report with upgrade recommendations and information on Dominion Energy offerings that can help customers install recommended upgrades. Large nonresidential customers with potential custom projects will be directed to the Feasibility Assessment pathway of the Custom Rebates component to complete a required engineering review and economic analysis.

Prescriptive Rebates. Dominion Energy will offer per-unit incentives for eligible customers who install qualifying equipment in their facilities. The implementation vendor will be responsible for recruiting trade allies and managing trade ally relationships, leading program marketing, reviewing and approving rebate applications, and conducting on-site verification of all self-installations and of installations that receive more than $10,000 in incentives.

[45] Appendix B provides a summary of existing programs comprised in the long-term Plan's proposed comprehensive programs.

Custom Rebates. Dominion Energy will provide large nonresidential customers with a full suite of support services leading to significant facility upgrades and energy management best practices. This component will provide the flexibility for customers to work with their own contractor to identify facility upgrades or to access Dominion Energy's program for technical support through a fully reimbursed feasibility assessment when the customer installs recommended upgrades. To minimize utility risk, custom projects must demonstrate cost-effectiveness prior to approval. The implementation vendor will be responsible for general oversight, recruiting and managing trade allies, promoting the program to customers and trade allies, coordinating with key account managers and Dominion Energy's energy conservation team, calculating project cost effectiveness based on submitted documentation, conducting required project verification, and processing incentive payments. In addition, there are specific implementation protocols for each pathway:

- **Feasibility Assessment.** Customers will work with their own qualified engineering firm or a Dominion Energy trade ally to obtain an ASHRAE Level II building assessment. The building assessor will explore potential energy efficiency opportunities, assess energy savings potential through custom engineering calculations, calculate the payback period and incentive amount, and confirm project eligibility. Dominion Energy will offer an incentive (50% of the feasibility assessment cost up to $10,000) to help offset the cost of feasibility studies. Customers who implement measures accounting for 75% or more of the total energy savings identified by the study within 18 months will be reimbursed for the remaining study cost (up to $10,000).
- **Custom Projects.** Customers will work with a Dominion Energy–approved trade ally to identify, develop, and implement custom projects. This includes preparing and submitting a program application with detailed information on the project opportunity including projected costs, energy savings, and demand reduction for approval prior to implementation. The implementation vendor will review project scopes, conduct engineering calculations, perform an independent economic analysis of project applications, and analyze project cost-effectiveness based on all four cost-effectiveness tests. Projects must pass three of four cost-effective tests and meet payback criteria (where payback must be greater than one year) to be approved. When a project is approved, the customer and the Company will sign an agreement that documents expected energy savings and the incentive amount, and the Company will reserve the rebate for a period of up to two years. Following project installation, the implementation vendor will conduct field verification of any project eligible for incentives greater than $10,000 and of all self-installed projects. Dominion Energy will issue rebates after the project is installed and verified (if applicable).
- **Strategic Energy Management.** The implementation vendor will work with customers to complete a baseline assessment of their energy consumption based on existing energy management practices. Customers will receive benchmarking tools, technical support, and training to help them incorporate energy management best practices into their daily operations and to identify energy savings upgrades. The implementation vendor will coach customers on how to track and monitor energy savings impacts from adopting behavior-based energy savings practices, building operational improvements, and energy management protocols. The implementation vendor will conduct post-installation modeling to measure facility-normalized

energy savings and customers may be eligible for performance incentives based on achieved first-year savings.

- **Building Optimization**. Customers will receive a retro-commissioning study, Dominion Energy facility audit, or other analysis from a participating trade ally or Dominion Energy's implementation vendor to assess building optimization opportunities. Following completion of the study, the customer will submit documentation for project approval. Customers who implement measures accounting for 75% or more of the total energy savings identified by the study within 12 months will be reimbursed for up to 75% of the study cost. Additionally, customers may be eligible for performance incentives based on achieved first-year savings.

4.3.1.5. Marketing Strategy

Finding the right decision-maker is a frequent challenge of marketing to large businesses. Dominion Energy will target operations, facilities, and energy managers while seeking buy-in from financial decision-makers. The marketing strategy for the program will be dominated by direct marketing through trade allies and key account managers, who know these contacts, and supplemented with targeted media and inbound marketing.

Trade Ally Engagement. The implementation vendor will actively recruit trade allies who work with large business customers and educate them about program offerings, how to support operations and facility managers to gain approval for high-efficiency upgrades, and how to participate. Trade allies may include wholesalers, distributors, midstream suppliers, equipment contractors, and retailers who stock, sell, and install qualifying technologies. The implementation vendor will be responsible for engaging with trade allies through several methods:

- Direct outreach by mail, phone, email, or in person
- Program, technical, and sales training for trade allies whose business may benefit from promoting program offerings
- Listing qualified, active trade allies on the Company's website with their name, discipline, and contact information
- Recognizing trade allies for high levels of participation and quality through trade ally awards, events, press releases, and social media content
- Providing co-branding opportunities for participating trade allies in the form of marketing and promotional materials
- Participating in industry organizations and events

Direct Marketing by Key Account Managers. Dominion Energy will identify customers that qualify for the Large Business Solutions program through billing data. Dominion Energy's key account managers, with support from the implementation vendor, will support direct outreach to these customers to spur program participation:

- Direct mail, phone, and email outreach
- In-person meetings and site walk-throughs with energy advisors

- Networking through industry associations and by introducing potential new participants to past program participants

Targeted Media. Targeted media creates program awareness among specific, program-eligible audiences and qualified trade allies. Dominion Energy will use several effective media channels to reach large nonresidential customers:

- Advertising through segment-specific trade and business journals, newsletters, websites, and events
- Cooperative advertising through trade ally newsletters, websites, and customer leave-behind materials (allowing network trade allies to leverage program references and Dominion Energy branding gives them added credibility and rewards them for being active network participants)
- Targeted media channels, such as digital or social media advertising

Inbound Marketing. Inbound marketing attracts customers by providing valuable resources and content. Dominion Energy will use several tactics to help customers find out about the program as they seek information:

- A program webpage that describes the program, available incentives, eligibility criteria, and how to participate
- Downloadable incentive applications and important program information, including detailed eligibility requirements and factsheets
- Sector-specific case studies of successful projects
- Press releases about program impacts

4.3.1.6. Impacts

Table 34 and Table 35 outline estimated annual investment requirements and impacts based on gross and net energy savings, respectively. *Appendix A* provides participation estimates by measure.

Table 34. Large Business Solutions Program Estimated Annual Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$9,216,785	$19,058,310	$22,440,667	$24,280,098	$25,368,697	$100,364,557
Electric Savings (MWh)	37,387	90,737	129,970	147,288	157,457	547,456
Peak Demand Reduction (MW)	5	14	17	19	19	N/A
GHG Reductions (mCO2e)	32,061	77,810	111,455	126,305	135,026	469,465

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 35. Large Business Solutions Program Estimated Annual Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$9,216,785	$19,058,310	$22,440,667	$24,280,098	$25,368,697	$100,364,557
Electric Savings (MWh)	31,800	73,280	102,180	116,100	123,530	433,186
Peak Demand Reduction (MW)	4	12	14	15	16	N/A
GHG Reductions (mCO2e)	27,270	62,841	87,623	99,560	105,932	371,474

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

4.3.1.7. Cost-Effectiveness

The Large Business Solutions program is cost-effective from three of four test perspectives, as shown in Table 36.

Table 36. Large Business Solutions Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	2.17
Total Resource Cost Test	1.31
Participant Cost Test	2.76
Ratepayer Impact Measure Test	0.53

4.3.2. Small Business Solutions Program

Through the Small Business Solutions program, Dominion Energy will provide small nonresidential customers with education about energy savings management practices and opportunities to increase their facilities' energy efficiency, as well as access to enhanced and prescriptive incentives. The Small Business Solutions program will be offered to all nonresidential customers with monthly demand of 100 kW or below, though eligibility criteria may differ by program component. There will be four program components.

Audit, Direct Install, and Enhanced Rebates. Eligible customers will receive a free, on-site walk-through energy assessment to evaluate opportunities to improve the efficiency of their building through the installation of high-efficiency technologies, system tune-ups, or recommissioning of electric heating and cooling systems. During the assessment, customers will also receive free direct installation of low-cost energy efficiency measures. Customers who receive an audit may be eligible for technical support and enhanced rebates when they install recommended energy efficiency upgrades. These could include non-prescriptive measures and custom facility solutions when customers submit documentation of project cost-effectiveness.

Building Optimization. Eligible customers will receive rebates for completing actions that optimize building energy performance such as retro- or recommissioning, system tune ups, and leak repair. Customers who participate in the Audit, Direct Install, and Enhanced Rebates component with identified building optimization opportunities may be directed to this component for solutions.

Prescriptive Rebates. Small nonresidential customers will be eligible for prescriptive rebates on high-efficiency equipment via midstream and downstream incentives pathways. The Company will offer

midstream incentives for distributors to discount the cost of selected products including lighting, HVAC, and food service equipment. Through the downstream pathway, customers or trade allies will submit rebate applications for qualifying equipment. The Company will issue rebates to the utility account holder unless the customer provides written authorization for the trade ally to receive the incentive.

Customer Engagement. Dominion Energy will provide small businesses with customized business energy reports, either digitally or through the mail, that have energy savings tips, a forecast of energy consumption, and recommendations for saving energy by participating in other Company offerings or adopting energy saving behaviors. Businesses can also access an online audit or work with an energy advisor to learn more about their energy usage and receive energy coaching and savings recommendations.

4.3.2.1. Objectives

Through the Small Business Solutions program, Dominion Energy will aim to generate energy savings for small nonresidential customers through education, technical assistance, and financial incentives on high-efficiency equipment. There are several objectives for the Small Business Solutions program:

- Increase the market share of commercial-grade high-efficiency technologies sold through a range of market channels.
- Establish Dominion Energy as a trusted source of energy efficiency information for small nonresidential customers.
- Influence small business customers to select and install high-efficiency equipment and projects, as well as whole-facility solutions.
- Reduce energy use and improve the performance of existing long-life equipment to ensure peak operating efficiency for business customers.
- Educate and train small nonresidential customers on energy management best practices and operational and behavioral energy savings opportunities.
- Achieve high customer and trade ally satisfaction.

4.3.2.2. Customer Targets and Eligibility

Dominion Energy will target nonresidential electric customers in its service territory with 100 kW or lower monthly demand for participation in the Small Business Solutions program. For each program component, the Company will target specific nonresidential customers:

- Through the **Audit, Direct Install, and Enhanced Rebates** component, Dominion Energy will target small business owners with higher-than-average energy bills and those in areas predominated by older construction who may need assistance to understand their energy consumption patterns and identify ways to save energy.
- Through the **Building Optimization** component, Dominion Energy will target small nonresidential customers with higher-than-average energy bills or energy using systems that would benefit from operating and maintenance upgrades.

- Through the **Prescriptive Rebates** component, Dominion Energy will target all small nonresidential customers who wish to purchase qualifying equipment or services through program distributors or trade allies.
- Through the **Customer Engagement** component, Dominion Energy will target small business customers with high energy usage.

Table 37 shows the program eligibility parameters by component.

Table 37. Small Business Solutions Program Customer Eligibility Parameters

	Eligible Customers			
	Audit, Direct Install, and Enhanced Rebates	**Prescriptive Rebates**	**Building Optimization**	**Customer Engagement**
Customer Class	Nonresidential customer rate class			
Building Type	Nonresidential facilities			
Building Ownership	Customer must be owner or provide owner's authorization to participate			
Building Vintage	Existing or new construction			Existing construction
Other	Customers whose nonresidential building has not exceeded 100 kilowatts in monthly demand three or more times in the past 12 months			Customers must have occupied their facilities for the prior 12 months

4.3.2.3. Qualifying Measures and Incentives

The Small Business Solutions program will offer prescriptive and performance-based incentives for a wide array of energy saving solutions that are designed to help customers engage with energy efficiency in whatever way best meets their needs. Because small business customers are among the hardest to reach, Dominion Energy will offer substantial program technical support and enhanced rebates when customers participate through the Audit, Direct Install, and Enhanced Rebates component.

The Small Business Solutions program consists of the following measure categories.

Prescriptive Rebates	Audit, Direct Install, and Enhanced Rebates	Building Optimization	Customer Engagement
• Agricultural measures • Midstream HVAC equipment • Commercial cooking and refrigeration equipment • Lighting upgrades and controls	• Walk-through audit (ASHRAE Level 1 or similar) • Direct install measures • Lighting, HVAC, and refrigeration improvements	• End-use scheduling optimization • HVAC temperature setback • Equipment tune-up • HVAC controls	• Electronic report • Paper report

Please see a full list of available program measures, measure qualifications, and customer incentives in *Appendix A*.

4.3.2.4. Implementation Strategy

The Small Business Solutions program bundles existing Dominion Energy programs that have been analyzed to verify their cost-effectiveness and approved by the SCC.[46] Dominion Energy will use an implementation vendor to deliver key elements of each program component such as reviewing and approving rebate applications and processing incentive payments. For each component, the Company will manage the implementation vendor, ensure the data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, and review and approve customer-facing program information and terms and conditions. Because each component has separate implementation strategies, delivery will vary.

Audit, Direct Install, and Enhanced Rebates. The implementation vendor will recruit and train pre-qualified contractors to conduct facility audits, install simple measures while on the site, and develop a proposal with upgrade recommendations and rebate information. Customers may work with their own contractor or access Dominion Energy's trade ally network to install recommended upgrades. The implementation vendor will provide technical support and assist customers with navigating the program and accessing rebates for installed measures. The implementation vendor will verify proper equipment installation of a sample of direct installation measures and will reimburse the trade ally for the full audit cost. The implementation vendor will also answer customer and trade ally questions, cross-promote other Dominion Energy offerings to customers, and track program data.

Building Optimization. The implementation vendor will work directly with trade allies and customers to help identify, develop, and implement building optimization activities. Customers will be able to obtain a retro-commissioning analysis from a participating trade ally or Dominion Energy's implementation vendor to assess building optimization opportunities. Customers who implement measures accounting for 75% or more of the total energy savings identified by the study within 12 months will be reimbursed for up to 75% of the study cost. Incentives are $0.04 per kilowatt-hour first-year savings for installed measures and system improvements.

Prescriptive Rebates. Dominion Energy will offer per-unit incentives for eligible customers who install qualifying equipment in their facilities. The implementation vendor will be responsible for recruiting trade ally participants and managing trade ally relationships, leading program marketing, reviewing and approving rebate applications, and conducting on-site verification for all self-installations and for contractor installations that receive more than $10,000 in incentives.

Customer Engagement. The Company will rely on the implementation vendor to send business energy reports to customers either digitally or via email and to provide customers with access to an online audit or energy advisors. Businesses will be able to opt-out of the component at any time. Tips and recommendations in the business energy reports will focus on HVAC energy reduction, including

[46] Appendix B provides a summary of existing programs comprised in the long-term Plan's proposed comprehensive programs.

adjustments to thermostat setpoints and schedules, low- to no-cost measures that reduce energy consumption, and ways to participate in other Dominion Energy programs.

4.3.2.5. Marketing Strategy

Small business customers are often the hardest to reach and require a targeted marketing approach. Businesses that qualify for this program typically do not have staff dedicated to energy management, so business owners are the primary target contact. An active marketing strategy is required for all components of the Small Business Solutions program to succeed except for Customer Engagement, since participants are automatically entered into the Customer Engagement component. The marketing strategy for the other components of the Small Business Solutions program will predominantly rely on one-on-one outreach through trade ally engagement and direct marketing to target customers, and will be supplemented with targeted and inbound marketing:

Trade Ally Engagement. A robust network of trade allies specializing in small business facility upgrades will be critical to generating leads for the Small Business Solutions program. The implementation vendor will work with Dominion Energy's trade ally network coordinator to actively recruit trade allies and educate them about program offerings, how to sell high-efficiency upgrades to small business owners, and how to participate. Trade allies may include wholesalers, distributors, midstream suppliers, equipment installation contractors, and retailers who deal with qualifying technologies. There are many possible types of engagement activities:

- Direct outreach by mail, phone, email, or in person
- Program, technical, and sales training for trade allies whose business may benefit from promoting program offerings
- Listing qualified or active trade allies on the Company's website with their name, discipline, and contact information
- Recognizing trade allies for high levels of participation and quality with trade ally awards, recognition, press releases, and/or social media content
- Providing co-branding opportunities for participating trade allies in the form of marketing and promotional materials
- Participating in industry organizations and events

Direct Marketing to Target Customers. The implementation vendor will lead direct outreach to small nonresidential customers through several methods:

- Direct mail, phone, and email outreach
- In-person, door-to-door canvasing
- Networking through industry associations and by introducing potential new participants to past program participants

Targeted Marketing. Targeted marketing helps create program awareness among specific program-eligible audiences. Dominion Energy will focus targeted marketing to specific small business segments,

such as restaurants, retail stores, or office buildings, on messaging designed to resonate with those audiences and leverage channels where they are most likely to engage. There are several effective marketing tactics, beyond direct outreach, to reach small nonresidential customers:

- Participating in events and advertising through local chambers of commerce
- Advertising through segment-specific trade and business journals, newsletters, websites, and events
- Cooperative advertising through trade ally newsletters, websites, and customer leave-behind materials (allowing network trade allies to leverage program references and Dominion Energy branding gives them added credibility and rewards them for being active program participants)
- Using targeted and/or local media channels, such as digital or social media, local print, and radio advertising
- Using program-branded trucks to leverage local visibility and word of mouth

Inbound Marketing. Inbound marketing attracts customers by providing valuable resources and content. These tactics will help customers find out about the program as they seek information:

- A user-friendly program webpage that describes the program, available incentives, eligibility criteria, and how to participate
- Downloadable incentive applications with detailed eligibility requirements and incentive information
- Sector-specific fact sheets and case studies of successful projects
- Blog articles and other content that provides tips and information targeted to small businesses
- Press releases about program impacts

4.3.2.6. Impacts

Table 38 and Table 39 outline estimated annual investment requirements and impacts based on gross and net energy savings, respectively. *Appendix A* provides participation estimates by measure.

Table 38. Small Business Solutions Program Estimated Annual Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$13,007,396	$18,258,469	$18,389,019	$18,707,973	$18,907,762	$87,270,619
Electric Savings (MWh)	58,848	101,632	95,777	96,736	96,749	449,741
Peak Demand Reduction (MW)	15	21	21	21	21	N/A
GHG Reductions (mCO2e)	50,465	87,153	82,132	82,955	82,966	385,671

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 39. Small Business Solutions Program Estimated Annual Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$13,007,396	$18,258,469	$18,389,019	$18,707,973	$18,907,762	$87,270,619
Electric Savings (MWh)	53,070	84,470	79,390	80,000	79,840	376,770
Peak Demand Reduction (MW)	14	19	18	18	18	N/A
GHG Reductions (mCO2e)	45,510	72,436	68,080	68,603	68,466	323,095

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

4.3.2.7. Cost-Effectiveness

The Small Business Solutions program is cost-effective from three of four test perspectives, as shown in Table 40.

Table 40. Small Business Solutions Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	1.90
Total Resource Cost Test	1.37
Participant Cost Test	2.88
Ratepayer Impact Measure Test	0.54

4.3.3. Nonresidential New Construction Program

Through the Nonresidential New Construction program, Dominion Energy will provide qualifying facility owners with incentives to install energy-efficient measures in their new construction, addition, or extensive renovation projects. Program engineers will determine which potential energy efficiency upgrades are of interest to the owner and feasible within their budget. They will analyze these measures along with facility design data using building energy simulation models. This analysis will inform an optimized building design and provide an estimate of the resulting energy savings, including from interactive effects of selected measure bundles. The results will be presented to the facility owner to determine which measures(s) are to be installed. Incentives will be based on estimated savings post-construction.

4.3.3.1. Objectives

There are several objectives for the Nonresidential New Construction program:

- Produce long-term nonresidential energy savings through the construction of energy-efficient new buildings.
- Accelerate market transformation in the nonresidential new construction sector by encouraging the construction of highly efficient buildings.
- Promote ongoing engagement with energy management and efficiency through other Dominion Energy programs.
- Achieve high customer and trade ally satisfaction.

4.3.3.2. Customer Targets and Eligibility

The Nonresidential New Construction program will target builders, design firms, building science engineers, or architects on projects that involve new construction, additions, or major renovations, as well as nonresidential customers planning to build new facilities. Dominion Energy will target facilities such as small- and medium-sized offices, stand-alone retail shops, and outpatient health care facilities. To participate in the Nonresidential New Construction program, the facility must be built within Dominion's service territory. Table 41 shows the program eligibility parameters.

Table 41. Nonresidential New Construction Program Customer Eligibility Parameters

	Eligible Customers
Customer Class	Nonresidential customer rate class
Building Type	All
Building Ownership	N/A
Building Vintage	New construction or major renovation
Other	Projects must result in permanent reduction in electrical use compared to the state building code

4.3.3.3. Qualifying Measures and Incentives

Customers will be eligible for building design assistance and incentives of up to $0.10 per kilowatt-hour first-year savings for all approved measures. In addition, the new construction design team will be eligible for incentives up to $0.02 per kilowatt-hour first-year savings. General categories of approved measures will include high-efficiency interior and exterior lighting systems, HVAC equipment, HVAC controls, demand-controlled ventilation, and plug load management systems.

Please see available program measures, measure qualifications, and customer incentives in *Appendix A*.

4.3.3.4. Implementation Strategy

The Nonresidential New Construction program has been analyzed to verify its cost-effectiveness and approved by the SCC.[47] Dominion will use an implementation vendor to deliver key elements of the Nonresidential New Construction program. The Company will manage the implementation vendor, ensure the data tracking system and data collection practices comply with Dominion Energy's tracking and data security requirements, review and approve rebate applications, and review and approve public-facing program information and terms and conditions.

Interested customers will select a qualified design firm and submit an eligibility form to the implementation vendor. Once the implementation vendor confirms customer eligibility, a program representative will work with the design firm and customer to conduct an in-depth, customized analysis during the design phase. This analysis will use building simulation modeling to identify design improvements and specify energy-efficient equipment bundles that will produce energy savings and garner program incentives. Participants will also be able to receive a financial analysis to help guide final

[47] Appendix B provides a summary of existing programs comprised in the long-term Plan's proposed comprehensive programs.

design decisions. Program representatives will provide customers with a Design Documents Review Report detailing eligible measures, energy savings, and rebate funding, which will be based on estimated post-construction savings. The customers' builder or design firm will submit a program application on the customer's behalf, and a program representative will conduct an on-site inspection to verify installed product details and provide a Project Verification Report detailing the final savings and rebate amount.

4.3.3.5. Marketing Strategy

The project architect or project manager typically has the largest decision-making influence about what energy-efficiency measures are included in nonresidential new construction projects. When marketing the Nonresidential New Construction program, Dominion Energy will target both these audiences through a push and pull strategy: the push strategy will encourage builders, architectural firms, construction contractors, building science engineers, and architects to promote the program while the pull strategy will target facility owners to increase their awareness and demand for program-qualifying construction and major renovation projects. Both strategies will emphasize direct outreach.

There are several key *push* marketing tactics to engage trade allies (builders, construction contractors, building science engineers, and architects):

- Direct outreach (mail, email, in-person, and phone outreach) to trade allies
- Program, technical, and sales training for trade allies
- Sales assistance materials and tools for trade allies
- Sponsorship of, promotion through, and participation in nonresidential building construction industry events and organizations
- Program webpage

There are also several key *pull* marketing tactics to influence facility owners:

- Coordination with and introductions to the program by key account managers
- Direct outreach (mail, email, in-person, and phone outreach) to nonresidential customers in growing industries and corporate realtors
- Sponsorship of, promotion through, and participation in events and organizations for key industries
- Program webpage

4.3.3.6. Impacts

Table 42 and Table 43 outline estimated annual investment requirements and impacts based on gross and net energy savings, respectively. *Appendix A* provides participation estimates by measure.

Table 42. Nonresidential New Construction Program Estimated Annual Budget and Gross Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$1,560,733	$2,061,691	$2,506,568	$2,526,427	$1,654,302	$10,309,721
Electric Savings (MWh)	2,589	5,233	7,822	7,822	7,822	31,287
Peak Demand Reduction (MW)	1	2	2	2	2	N/A
GHG Reductions (mCO2e)	2,220	4,488	6,707	6,707	6,707	26,830

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

Table 43. Nonresidential New Construction Program Estimated Annual Budget and Net Impacts

Year	2022	2023	2024	2025	2026	Total [a]
Investment ($)	$1,560,733	$2,061,691	$2,506,568	$2,526,427	$1,654,302	$10,309,721
Electric Savings (MWh)	2,330	4,710	7,040	7,040	7,040	28,160
Peak Demand Reduction (MW)	1	2	2	2	2	N/A
GHG Reductions (mCO2e)	1,998	4,039	6,037	6,037	6,037	24,148

[a] The table totals represent the incremental sum of values that include considerations of attrition from prior installed measures.

4.3.3.7. Cost-Effectiveness

The Nonresidential New Construction program is cost-effective from three of four test perspectives, as shown in Table 44.

Table 44. Nonresidential New Construction Program Cost-Effectiveness Summary

Test	Benefit/Cost Ratio
Utility Cost Test	3.84
Total Resource Cost Test	1.67
Participant Cost Test	2.82
Ratepayer Impact Measure Test	0.71

5. Marketing, Education, and Training

Dominion Energy recognizes that achieving its aggressive VCEA energy savings goals requires a strong commitment to effective marketing, as well as ongoing customer and trade ally education. Building awareness of energy efficiency programs and their benefits increases customers' consideration of efficiency as a home or business improvement and nudges them toward program participation, which in turn drives energy savings.

5.1. Overview

As discussed in section 1.6.1 and in the profiles of each sector in chapter 2 through chapter 4, Dominion Energy customers currently have limited program awareness, with just 39% of residential survey respondents (averaged across residential non-income-qualified and income-qualified customers) and 15% of nonresidential survey respondents reporting having heard of Dominion Energy's programs in the past year. Survey respondents reported even lower program participation (16% residential non-income-qualified, 7% income-qualified, and 13% nonresidential). Furthermore, nonparticipant survey respondents across the three sectors reported that lack of awareness of Dominion Energy's offerings and a belief that their homes and businesses are already energy efficient were key reasons for not participating in Dominion Energy's programs.

Informed by this primary research and the need to reach new aggressive savings targets, the Company plans to develop and execute a comprehensive portfolio-level marketing strategy and energy education initiative to supplement its existing program-level marketing and outreach efforts. In addition, as trade allies and partners are critical to championing programs, the Company will put additional emphasis on expanding and coordinating its trade ally network across programs in the coming years to ensure that customers are able to find qualified contractors and access eligible equipment.

Cadmus referenced benchmarked data to identify typical utility investments into portfolio level marketing. We determined that 2% to 5% of portfolio costs is an appropriate level of investment above and beyond the budget allocated for program level marketing for Dominion Energy's comprehensive marketing strategy. In modeling for this long-term Plan, Cadmus determined an additional 2% investment into portfolio marketing would be sufficient to achieve the VCEA goals with gross savings, while a 3% investment would be needed to meet the VCEA goals with net savings.

This section outlines a framework for an overarching campaign that reflects Cadmus' primary customer research, stakeholder input, and industry best practices for customer marketing, education, and outreach.

5.2. Marketing Strategy

Dominion Energy acknowledges that in order to drive program participation and in turn capture energy savings, it is important to generate and maintain high customer awareness of its energy saving programs and the broad benefits of saving energy. A consistent cadence of marketing and outreach to inform and remind customers of program opportunities at key decision points is a key factor for producing ongoing energy savings. An overarching strategy encompasses general awareness marketing and advertising,

program-specific marketing, and trade ally recruitment and network development. General awareness, supported by portfolio marketing, will help raise Dominion Energy's programs to the forefront of customers' minds as they consider decisions that may impact their energy use, while targeted program marketing will help customers find and participate in Dominion Energy's programs when they are ready.

5.2.1. General Awareness Portfolio Marketing

Portfolio marketing supports general customer awareness of the Company's DSM programs and their broad benefits. Historically, Dominion Energy has relied on its implementation vendors to conduct individual program marketing. However, best practices for supporting a successful DSM portfolio pair an overarching portfolio marketing campaign with targeted program marketing (see chapter 2 through chapter 4 for individual program marketing strategies). By adding a portfolio marketing campaign, Dominion Energy seeks to create several opportunities:

- Increase customer awareness of Dominion Energy DSM programs (making the Company programs top-of-mind for customers)
- Solidify Dominion Energy as a trusted resource for customers regarding energy efficiency information
- Strengthen customers' positive association with saving energy, installing energy-efficient equipment, and taking associated personal actions
- Encourage customers to take energy saving actions within their homes and businesses

Additionally, a unified portfolio marketing campaign provides messaging continuity and cross-program promotion that links the Company's DSM programs, bridging customer awareness of single programs to give them knowledge of the full portfolio.

To achieve these marketing goals, Dominion Energy will issue a request for proposals to solicit bids from marketing and advertising firms to develop and execute a portfolio-level customer marketing strategy. In contrast to program marketing, which is often targeted to very specific customer groups, portfolio marketing reaches a broad audience and creates a memorable positive impression. The overall marketing strategy may include broadcast advertising (TV, radio, print), out of home placements (billboards, transit signage), broadly targeted digital and social advertising, customer newsletters and bill inserts, and promotion on the Company website.

5.2.2. Program Marketing

Program-specific marketing aims to achieve savings by driving participation in individual programs. For each program in its portfolio, Dominion Energy will employ a customized marketing and customer outreach strategy, which it will develop in partnership with implementation vendors, to promote that program to the customers who are most likely to participate and benefit. Not all customers are equally likely to participate in or benefit from all programs, so Dominion Energy will tailor marketing strategies to the programs' eligible customer population, customers with high energy intensity, and specific demographics of the engaged groups. This targeted approach to program marketing supports an efficient use of marketing funds, weighted toward customers who are likely to participate and generate the highest impact.

Additionally, the Company may tailor the messaging strategy toward communicating benefits that will best resonate with targeted customers in terms they will find compelling; this strategy can not only improve participation outcomes, it can also increase customer satisfaction with the Company, since customers are more likely to see communications from programs that are relevant (and therefore potentially more compelling) to them. Dominion Energy and its implementation vendors will use customer insights (such as those identified through customer survey research) in several ways to support successful and cost-efficient program marketing:

- **Tailored messaging** will be informed by customers' identified participation challenges and drivers to resonate with their concerns, values, and motivations, and to help them understand how to overcome perceived barriers.
- **Customer segmentation** will leverage information on customer characteristics, including demographics, geographic distribution, and home/business type, as well as lifestyle attributes, purchasing preferences, and attitudes, which can inform target marketing parameters.
- **Delivery channels** will align with how customers absorb information, where they purchase different products, and their attitude toward energy efficiency. This could include customer touchpoints where marketing can have an impact, from social media to in-store point-of-purchase material, or direct engagement with program representatives.

Implementation vendors are central in developing and executing program marketing strategies; however, the Company is equally critical to providing overarching direction, ensuring consistency with corporate communication standards and branding requirements, and coordinating between program marketing initiatives. Audience targeting for multiple programs frequently overlaps: to preserve a positive customer experience, it is critical for the Company to coordinate program communication in these instances. This is particularly important with direct delivery channels, such as email, bill inserts, targeted social media, direct mail, or other direct outreach, so that customers do not feel bombarded in an unorganized fashion and become disenchanted with the Company's DSM offerings. Coordination also enables program cross-promotion, where the Company can use engagement through one program to promote other programs.

Many of Dominion Energy's DSM programs rely on trade allies to facilitate program delivery. Trade allies can be a key source of customer awareness. However, Cadmus' survey research revealed that among customers who were aware of Dominion Energy's programs, few (8%) had learned about them from a contractor or trade ally, indicating an opportunity to expand program awareness through trade ally outreach. Effective trade ally marketing encourages trade allies to participate by highlighting how the programs can benefit their business through increased sales and customer satisfaction. Strategies may include direct marketing to trade allies (email, mail, phone, and in person) and advertising through trade publications and events.

5.3. Education and Training

Educating customers and trade allies about Dominion Energy's programs and their benefits can provide multiple advantages and serves as an important complement to the Company's marketing activities. Education initiatives help customers understand how to take action to save energy in their home and

business, establishes the Company as a trusted resource, and draws customers to Company materials when they are interested in saving energy. Training trade allies on best practices and encouraging them to participate in programs supports a positive program experience and assists them with recruitment, which is critical to successful delivery of the Company's portfolio.

5.3.1. Customer Education

Educating customers about program benefits, ways to save energy, and resources are key components of providing a robust customer education effort.

- **Benefits.** Articulating the benefits of saving energy helps customers connect their actions to a positive outcome. Research shows that customers across the U.S., including Dominion Energy customers, are motivated by multiple benefits of DSM programs, such as saving money on energy costs (reported by 79% of all Dominion Energy residential survey respondents and 97% of all nonresidential respondents), improving comfort and air quality (34% of residential respondents), increasing equipment durability and property values (29% of residential respondents), reducing GHG emissions and other pollutants (38% of residential respondents and 82% of nonresidential respondents), helping to address social inequities, increasing employee productivity and retention (86% of nonresidential respondents), and contributing to local economic development (79% of nonresidential respondents).
- **Ways to save.** Many surveyed customers said they do not know where to start in order to save energy or they are not confident it will be worth the investment of time or money. Behavioral science studies find that communicating easy actions supports stronger participation than simply telling people why they should do something. Important elements of a general customer education campaign include (1) providing direct, relevant information to help customers identify simple, effective steps they can take, including tips and information about energy-efficient technologies and behavior changes that can help them reduce energy use, (2) offering programs that help them to identify savings opportunities, and (3) offering incentives to reduce the upfront costs.
- **Resources**. In many cases, customers need more than information to take energy efficiency actions. Best practice programs identify the types of support customers require to overcome participation barriers and assist them with the process of selecting and installing energy-efficient technologies that fit their needs. Dominion Energy currently offers resources of this nature, such as the "Find a Contractor" tool, buying guides, an explanation of how to read energy bills, links to energy saving calculators and comparison tools, and detailed program information.

While best practice customer education materials often include information about energy saving programs, program promotion is not the focus of customer education initiatives. Rather, education should aim to help customers understand and think about energy saving equipment and its benefits, without necessarily linking to an immediate action. These initiatives increase the likelihood that customers will consider prioritizing energy savings and take action. Additionally, by being a source of educational resources, the Company will strengthen customers' association of Dominion Energy with energy saving programs that benefit them directly.

Dominion Energy can leverage multiple channels to offer resources and learning opportunities to customers:

- **The Dominion Energy website** is a primary resource for educating customers. Best practice websites enable easy navigation to DSM program pages and resources through menus and on-site search features. They reserve space on core pages, such as the home page and bill pay pages, for DSM program content to aid program discovery. Dominion Energy has already incorporated several educational resources into its site; for example, "Our Stories" includes blog-type writing that offer tips for saving energy and program-specific webpages explain how to participate in programs, as well as links to resources, such as the "Find a Contractor" tool and savings calculators.
- **Program interactions** provide an opportunity to share broader information and materials about saving energy in one-on-one conversations with energy efficiency experts. Touch points such as home and business energy assessments are a significant opportunity to influence customers to install high-efficiency technology options, participate in programs, and adopt energy saving behaviors (both verbally and through energy reports and other leave-behind materials). Having trained and knowledgeable implementation vendors and contractors serving as program ambassadors is critical to capitalizing on these opportunities.
- **Events**, such as home and trade shows and community events, offer opportunities for one-on-one engagements as well as to passively share information through displays and materials.
- **Social channels**, including Facebook, Instagram, LinkedIn, Twitter, and YouTube, are platforms for Dominion Energy to share information and resources about saving energy with broad audiences.

5.3.2. Trade Ally Training, Education, and Recruitment

Through many of its DSM programs, Dominion Energy works with trade allies to facilitate program delivery. Cadmus' research from across the U.S. has shown that residential (income-qualified and non-income-qualified) and nonresidential customers who participate in DSM programs facilitated by trade allies regularly name contractors as one of the top sources of how they heard about the program. When customers must make emergency replacements due to an equipment failure, they seldom have the time or knowledge to independently research utility rebate programs. If these customers do not have strong familiarity with their utility program offerings, their contractor's recommendation may be the only input to their purchase decision. This makes trade ally training, education, and recruitment essential to providing a pipeline of program participants as well as to maintaining the high quality of Dominion Energy's programs and customer satisfaction.

Dominion Energy's program implementation vendors work with a range of trade ally partners including contractors, builders, energy assessors, distributors, and retailers. Many of these trade allies provide services that are supportive of multiple DSM programs offered by the Company. To coordinate trade ally outreach and communications between programs and support trade ally engagement with all applicable programs, Dominion Energy may want to consider creating a centralized trade ally network managed by a coordinator. The coordinator would work closely with the Company's implementation vendors to

manage trade ally relationships across multiple disciplines and would ensure that trade allies are aware of the full breadth of DSM program offerings.

Offering training and education to trade ally partners helps ensure program consistency and quality, supports trade ally and customer satisfaction, and increases program participation. To ensure its programs have adequate trade ally support and continued high-quality implementation, Dominion Energy should consider expanding and strengthening its trade ally training programs and focusing on program-level, sales, and technical training opportunities.

- **Program overview** trainings provide general information about how each program functions and the process for trade allies to participate. This includes customer and trade ally program requirements and timelines, program participation steps, available incentives and qualifying measures, how to submit rebate forms and other required material, and how to work with tracking systems or other platforms used by the program, as appropriate.
- **Sales trainings** offer information, resources, and techniques trade allies can use to promote Dominion Energy's programs and leverage as sales tools to sell their projects.
- **Technical trainings** offer knowledge and skills for trade allies to work with technologies included in Dominion Energy's programs. Supporting (or in some cases requiring) technical training helps to ensure that program partners are qualified to complete the work. DSM programs often support and recognize technical training offered by distributors, manufacturers, and other third parties.

6. Future Considerations for Dominion Energy

The utility industry, spurred by advances in both clean energy technologies and energy policies, is increasingly moving toward a lower carbon future. Several states, including Virginia, have set clean energy or carbon reduction goals. At the same time, utilities across the country experience declining energy savings potential due to the increasing market saturation of energy-efficient technologies and ongoing updates to building codes and equipment standards over the last several decades, which limit the amount of savings that can be claimed. These conditions will impact Dominion Energy's DSM activities in the years beyond the near-term VCEA targets, from 2026 to 2030. This chapter outlines industry trends and policy drivers that the Company should monitor and plan for during the 2026 to 2030 period.

In addition to its aggressive energy savings goals, which are the focus of this Plan, the VCEA has established a mandatory renewable energy portfolio standard of 100% clean energy from Dominion Energy's generation fleet by 2045. Specifically, the VCEA requires Dominion Energy to develop energy efficiency, solar, wind, and energy storage resources to achieve this goal, and mandates the retirement, by 2045, of all generation units that emit carbon dioxide as a byproduct of combustion, unless the retirement of a particular unit would threaten grid reliability and security. Dominion is already moving toward this goal, having announced its intention to develop the nations' first utility owned offshore wind generation facility by 2026. The 2.6 gigawatt Coastal Virginia Offshore Wind project will deliver enough clean, renewable energy to power up to 660,000 homes and avoid approximately 5 million tons of CO_2 emissions annually.

In 2020, Virginia also joined the Regional Greenhouse Gas Initiative, the first binding cap-and-trade program aimed at reducing GHG emissions from the power sector. Furthermore, at the federal level, the Biden administration has announced economy-wide GHG pollution reduction goals of approximately 50% from 2005 levels by 2030, as well as an intention to pass legislation aimed at a carbon pollution–free power sector by 2035.[48] The Biden administration has also tasked each federal agency with developing plans to ensure that their facilities, operations, and supply chain are increasingly resilient to climate change impacts.[49] Regardless of whether these aspirations become law, the market is rapidly moving toward cleaner electricity generation infrastructure. Against this backdrop, Dominion Energy will want to continue its path toward a diverse, cost-effective demand-side strategy that integrates energy efficiency, increased distributed renewable generation, beneficial electrification, advanced demand

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[48] The White House, Briefing Room. April 22, 2021. "FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies."

[49] Because federal facilities in Virginia are non-jurisdictional customers and not subject to DSM provisions, federal agency response plans do not directly impact Dominion Energy's long-term plans. Federal leadership may, however, indirectly affect customer behaviors and provide useful case studies of large customer benefits from participation in energy efficiency initiatives.

management, and distributed energy storage to achieve the emission reduction goals outlined in its corporate objectives and to prepare for potential federal standards.

The push to reduce GHG emissions and expand clean energy creates both opportunities and challenges for utilities. For example, a more diversified and integrated portfolio of programmatic initiatives can create economies of scale by spreading common costs for marketing and program administration across programs with the goal of improving customer satisfaction. At the same time, achieving the aggressive GHG emission reductions required to address the climate challenge will require flexibility, significant investment, new ways of evaluating opportunities, and a diversified approach. As its energy efficiency programs evolve and the Company pursues achievement of the VCEA goals in the near and medium terms, Dominion Energy can benefit from considering industry and market trends such as those presented below.

Utility and Grid Management. Energy efficiency can provide financial and capacity benefits in utility resource planning. It can reduce the amount of utility-scale and distributed renewable energy resources needed to replace Dominion Energy's fossil fuel resources, which in turn may lower the Company's cost to serve customers. Some stakeholders expressed concern during the long-term planning process that energy efficiency could also reduce peak demand and thus the potential load that could be shifted or reduced with demand response. However, energy efficiency and demand response can complement each other and lead to greater peak load reduction than either resource in isolation, and can lead to lower costs for customers, greater grid flexibility and resilience, and additional innovation in the electric power industry. For example, Dominion Energy may be able to leverage the locational value of each resource and reduce the need for distribution upgrades through energy efficiency and demand response initiatives targeting customers within a constrained distribution network. Dominion Energy may also be able to capture the time value of energy efficiency by promoting measures with savings that coincide with peak demand and that can, when appropriately balanced against the risk, also serve as capacity resources in wholesale markets pursuant to FERC Order 2222.[50]

Customer Experience Management. A streamlined customer delivery experience increases program participation across portfolio offerings, as well as customer satisfaction, while creating economies of scale through consolidated marketing and delivery that reduces costs. Dominion Energy is already taking steps to integrate its offerings by cross-promoting demand response programs and energy efficiency incentives to customers who purchase smart thermostats and electric vehicles. As outlined in this Plan, and as another step toward an improved customer experience, Dominion Energy plans to streamline its DSM portfolio, while providing customers with more opportunities to engage with energy efficiency and achieve deeper savings through home and building upgrades. In addition, the Company is currently considering how best to integrate energy efficiency, renewables, and demand response opportunities. For example, starting in 2022, Dominion Energy will offer solar energy incentives to income qualified customers who have installed measures that reduce their heating and cooling costs through a DSM

[50] Federal Energy Regulatory Commission. September 17, 2020. "FERC Order No. 2222: Fact Sheet." https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet

program. As the Company adds distributed energy resource offerings to its integrated portfolio, it may want to consider opportunities to facilitate diverse customer solutions to demand management, such as by expanding the scope of energy assessments to consider energy efficiency, demand response, battery storage, and solar energy in aggregate, and by promoting and facilitating net zero energy in programs that encourage whole-building solutions.

Expanding Advanced Metering Infrastructure (AMI). AMI is a valuable tool for helping customers to better understand how they use, produce, and store energy and for helping utilities to manage distributed resources. Presently, about 40% of Dominion Energy's service territory has AMI compared to the utility industry average of 56%.[51] The SCC recently approved a time-of-use pilot that relies on AMI. Dominion Energy can leverage the pilot results and findings to demonstrate the importance of AMI for the future to ensure that distributed energy resources are more integrated and provide valuable benefits to both customers and the grid via through-the-meter communications. Giving customers more granular feedback on their real-time coincident/non-coincident energy consumption, renewable energy generation, and storage capacity, coupled with tools to manage all three, is key to an integrated energy efficiency and distributed energy resource portfolio. Using AMI data with dynamic pricing rate designs to inform optimal energy consumption, production, and storage patterns that Dominion Energy can adjust through program inducements can help the Company to increase grid reliability and reduce costs over time. In addition, some utilities analyze AMI data to assess customer load shapes and end-use energy consumption and identify customers who could benefit the most from various distributed energy offerings. As Dominion Energy's AMI deployment advances[52] and the Company gains more experience with the time-of-use pilot, it can continue to explore ways to leverage AMI data to manage a more diversified electricity distribution network. A robust AMI infrastructure facilitates this type of integrated approach.

Expanded Performance Metrics. As the federal government, states, and utilities move to adopt stronger sustainability goals centered on GHG reductions and utilities seek to comply with these goals using a broader range of program offerings, some industry experts anticipate that GHG reductions could become the common denominator for measuring progress and a key input to calculating the cost-effectiveness of these efforts. At least 16 states have enacted legislation aimed at reducing GHG emissions. Several states have also implemented carbon pricing policies, including some that participate in the Regional Greenhouse Gas Initiative. Several states with binding statutory requirements, including Virginia, require measurement and reporting of GHG impacts to demonstrate compliance. Figure 10 outlines states with statutory GHG emission reduction, management, and reporting requirements.

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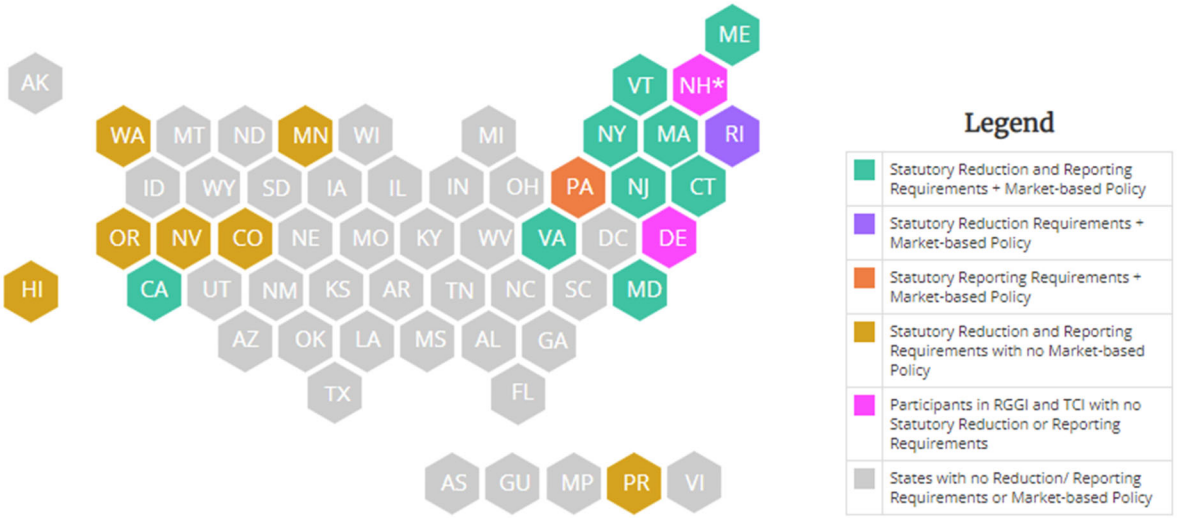
[51] Federal Energy Regulatory Commission. December 2020. "2020 Assessment of Demand Response and Advanced Metering." https://www.ferc.gov/sites/default/files/2020-12/2020%20Assessment%20of%20Demand%20Response%20and%20Advanced%20Metering_December%202020.pdf

[52] As requested in Dominion Energy's Grid Modernization Case No. PUR-2019-00154.

Figure 10. States with Comprehensive Greenhouse Gas Reduction Policies



Source: National Conference of State Legislatures. September 2, 2021. "Greenhouse Gas Emission Reduction Targets and Market-Based Policies." https://www.ncsl.org/research/energy/greenhouse-gas-emissions-reduction-targets-and-market-based-policies.aspx

Virginia enacted legislation in 2020 that establishes GHG emission reduction goals necessary to achieve a net-zero economy by 2045, and in 2021 passed legislation requiring state regulators to conduct a statewide GHG inventory every four years. Accordingly, Dominion Energy has already begun to measure and report the GHG reduction impacts—along with energy savings and demand reduction—of its energy efficiency programs through its evaluation, measurement, and reporting process. As its DSM programs mature and markets advance, Dominion Energy may wish to consider how to best structure and design programs to focus not just on mandated electricity savings, but also to maximize GHG reductions. By exploring how GHG reductions may be used to measure and validate the impacts of clean energy initiatives over time, Dominion Energy may be better prepared for changes to related legislative and regulatory provisions.

Beneficial Electrification. Beneficial electrification—defined as accelerated system-wide replacement of equipment fueled by natural gas (or delivered fuels such as propane, oil, and wood) with electricity-consuming equipment that can be supplied with zero or low carbon energy resources—offers both opportunities and challenges for Dominion Energy. While programs that promote or accelerate fuel switching have been slow to gain traction in state policy and many barriers remain, energy efficiency and environmental advocacy organizations are beginning to push for a more rapid shift away from natural gas use. As part of future considerations, the Company is carefully monitoring the increased focus on and adoption of beneficial electrification for both heating technologies and vehicle fleets as one solution to address climate change across the state of Virginia and throughout the country. As this trend evolves and electrically fueled technologies gain market share, electric utilities like Dominion Energy will experience greater demand, higher sales, and increased revenue. However, this increase in

electric demand will occur as energy efficiency potential declines. Newer electric technologies like heat pumps and electric vehicles are inherently more efficient than traditional alternatives yet may not compensate for declining end-use energy efficiency potential. As the SCC considers new targets beyond 2025, as required by the VCEA, beneficial electrification could change the baseline against which savings targets are calculated. Specifically, while the VCEA's 2022 through 2025 targets use 2019 electric sales as the baseline, future energy efficiency targets may be based on a future year's higher retail sales (due to increasing adoption of beneficial electrification) while energy efficiency potential is declining, making it even more challenging for Dominion Energy to achieve those targets. It will be important for DSM stakeholders to monitor developments in this area to ensure that the effects of beneficial electrification are appropriately addressed in future legislation and regulatory actions so that the establishment of future energy savings goals anticipate and appropriately consider rapid changes to end-use technology saturations and consumption patterns.

7. Next Steps

This long-term Plan is intended to outline a dynamic, strategic roadmap for Dominion Energy to achieve its energy savings goals as set forth in the VCEA. This chapter provides recommendations to help the Company operationalize the short- and medium-term program design and delivery adjustments outlined in this Plan and to prepare for a longer-term future in which it becomes increasingly important to have a greater focus on grid stabilization and resiliency, as well as integrated DSM, and to address the climate policy goals of the Commonwealth.

As outlined in Chapter 1, restructuring Dominion Energy's program portfolio into a more streamlined structure is a key strategy for facilitating greater program engagement, enabling a more proactive and strategic program development process, and creating budget flexibility and stability. However, doing so creates three timing-related challenges for Dominion Energy.

- First, it will be important for the Company to present a streamlined program structure to its customers as quickly as possible to increase participation and savings enough to achieve the VCEA targets.
- Second, the precedent established by the historical regulatory filing cycle has resulted in a large number of existing programs being offered with varying phase timelines; realigning the filing cycles would likely need to take place over an intermediate timeframe to allow for the appropriate incorporation of stakeholder inputs in developing SCC guidance.
- Third, the Company's existing vendor contracts entail periods of performance that map to the current program phases and cannot readily be restructured to match a streamlined portfolio. Aligning the program phases and vendor contract timelines with a streamlined portfolio strategy will require careful planning over several years to avoid disrupting existing program offerings.

Dominion Energy has already achieved significant energy savings and other benefits through its implementation of Phase I through Phase VIII customer programs (outlined in section 1.5). Since the adoption of the VCEA, the Company has accelerated its focus on achieving additional and significant energy savings targets by initiating the development of a portfolio-level awareness and outreach strategy and by pursuing the development of this long-term Plan, which articulates a path for pursuing these aggressive policy goals. The recommendations outlined in this chapter build on those activities and outline a path for overcoming the identified challenges. The suggestions below are designed to be executed beginning in 2022 and over the following 10 years, and to be reviewed and revisited annually to accommodate changing market and regulatory conditions. This will help the Company prepare for providing an updated five-year DSM plan in Phase XI, for managing its DSM programs throughout the phase, and for developing future DSM filings and assessing industry changes. Figure 11 outlines Cadmus' anticipated timeline for DSM planning phases through 2029.

Figure 11. Proposed Phase Timeline

This Plan should act as a living document that can be reviewed and updated annually to help Dominion Energy react to changing conditions, such as new laws and regulations, changing market trends, or emerging technologies.

7.1. Recommendations for Achieving Objectives

To achieve the energy savings targets in the VCEA, Cadmus recommends that the Company transition its existing comprehensive portfolio of energy efficiency programs into a consolidated program framework, expand its efforts to increase program awareness, and foster a culture of continuous improvement. By optimizing its program design and delivery, Dominion Energy will be able to increase participation and better support its customers across its portfolio and service territory. The sections below include recommendations to help Dominion Energy achieve its short-, medium-, and long-term objectives.

7.1.1. Short-Term Recommendations (2021 to 2023)

Continue as planned to develop an overarching portfolio marketing strategy that complements program-specific targeted marketing.

- Continue to pursue the selection of an experienced DSM marketing and advertising firm to develop and execute a portfolio-level strategy that can reach a broad audience of customers using varied and targeted messaging, touch points, and channels, which will increase broad customer awareness of and participation in program offerings.
- Align customer-facing materials and communications with new marketing strategies as they are developed and implemented.
- Incorporate customer insights from Cadmus' research—such as motivations and participation barriers—to develop compelling messaging in program marketing materials.
- Initiate additional market research, such as a customer segmentation analysis and customer journey mapping, to inform and optimize targeted marketing and outreach strategies.
- Create centralized access points that direct customers to the solution that fits their needs, such as a user-friendly portfolio website and call center representatives who are trained to provide solutions-oriented direction and holistic program information.

- Coordinate with implementation vendors to ensure they strategically cross-promote programs during customer engagements.

Prepare to launch the streamlined DSM portfolio structure in customer-facing communications as soon as possible. Seek to simplify the customer experience by consolidating program offerings into the seven programs outlined in this Plan.

- Work with the new portfolio marketing team to develop compelling customer-facing materials, implementation vendor and trade ally communication and tools, information and training materials for call center staff, and supporting documentation needed to present customers with a unified program portfolio.
- Provide training for and set expectations with implementation vendors regarding program cross-promotion so they understand the importance of informing customers about the range of available energy efficiency options in every interaction.

In 2022 begin planning for the development of a custom program offering for large nonresidential customers.

- Develop program design parameters that articulate a cost-effective program delivery approach as outlined in the long-term Plan.
- Solicit bids from potential custom program implementation vendors. Outline a scope of work that aligns with the established program design parameters.

With the 2021 DSM filing, pursue options to increase programmatic, budgetary, and filing flexibility and prepare for a 2022 (Phase XI) filing that facilitates the transition to a streamlined portfolio and adheres to SCC guidance.

- Request approval in the 2021 DSM filing to offer customers the streamlined program approach while continuing to administer and track each existing program independently.
- In the 2022 DSM filing, propose a framework that would allow flexibility for funds to be shifted between components and pathways within the seven consolidated programs, such that the budget can be efficiently directed toward programs that are performing above expectations.
- Request approval to make program design adjustments that address changing market dynamics (such as adjustments to the measure mix or incentive levels)—within approved budget caps and with appropriate stakeholder and regulatory oversight—using an administrative process such as an explanatory letter or other filing.[53] Such a process could be conducted outside the annual DSM filing but retain sufficient protocols to ensure appropriate regulatory oversight.

[53] Other jurisdictions have adopted a formal Advice Letter or other processes that allow utilities to request regulatory approval, authorization, or other relief to furnish services, subject to conditions that may include, in this context (for example), appropriate boundaries on the magnitude of funding shifts or other considerations that remain within the regulator's jurisdictional authority.

- In the 2022 filing, propose a streamlined Large Business program that includes a new custom rebate component with multiple pathways as outlined in this Plan and reflecting regulatory feedback and approval following the 2021 DSM filing.

Begin to outline a plan and schedule to bring implementation vendor contracts with different periods of performance into alignment as they expire.

- Assess implementation vendor contracts for each existing program (through Phase X) encompassed in the revised structure.
- Develop a timeline and plan to align existing contracts, where possible and where consistent with appropriate cost control measures, in a way that parallels the seven recommended comprehensive programs as contracts naturally expire.
- Explore available mechanisms to extend, amend, or bridge expiring vendor contracts that will enable programs to continue uninterrupted.
- Reconsider the process and schedule for designing programs and soliciting vendor bids to shorten the timeline from program ideation to program launch and to give potential bidders greater clarity on program savings and cost expectations.

Review the trade ally networks managed by program implementers and explore opportunities to expand trade ally representation through increased marketing, outreach, education, and training.

- For all program offerings and customer sectors where trade allies are used, assess gaps in trade ally representation.
- In consultation with implementation vendors, create a recruitment plan to identify and solicit trade ally network partners who can fill gaps and expand trade ally representation.
- Establish participation goals for expanded trade ally network members and community organization partnerships to create an external program sales force.
- Identify possible trade ally offerings that provide value and encourage program engagement, such as training focused on program processes, using Dominion Energy programs as a sales technique, and technical skills for working with the technologies promoted through Dominion Energy programs.
- Look for opportunities to enhance and clarify network partner expectations and performance standards, as well as to create recognition programs for those who achieve the highest quality, generate the strongest customer satisfaction, and engender the highest participation.

Initiate targeted process evaluations to assess the market performance of priority programs and provide insights and actionable recommendations for improvement.

- Prioritize programs for process evaluation according to program impacts, savings uncertainty, and customer effects.
- Engage a qualified third party to conduct independent program optimization reviews of priority programs.

- Work with process evaluators to identify research objectives tied to achieving VCEA targets and other regulatory and corporate objectives, such as customer and trade ally awareness, engagement, and participant satisfaction.
- Track and implement process evaluation recommendations to optimize program performance.

Continue to coordinate with stakeholders to optimize the effectiveness and reach of the energy efficiency programs.

- Update and solicit feedback from stakeholders annually on Dominion Energy's progress toward its savings targets and program goals.

7.1.2. Medium-Term Recommendations (2024 and 2025)

Contingent on approval by the SCC of a framework that allows flexibility to restructure the program portfolio (for the purposes of more effective customer engagement and delivery) and shift funds within the consolidated programs using an abbreviated administrative approval process, address the need to modify programs as needed to optimize performance within the regulatory and contractual framework and with appropriate stakeholder and regulatory oversight.

- Submit requests for administrative approval when necessary to add new technologies to existing programs or to address program design modifications that require SCC approval, including those that might require budget reallocations.[54]

Begin to bridge expiring implementation vendor contracts as they naturally expire. Given current program phase timelines, it is anticipated that many current vendor contracts will require interim contractual remedies to ensure continuity through the end of Phase X.

- For programs where one implementation vendor oversees or delivers all components and pathways, consider folding expiring vendor agreements into longer-term contracts to reflect the new bundled program approach and timeline, consistent with existing agreements and procurement policies.
- For programs where multiple implementation vendors deliver different components and pathways, leverage alternative contracting approaches to ensure program continuity. For example, extend or amend implementer contracts to continue their period of performance until a unified end date can be reached or conduct a competitive bidding process to create short-term bridge contracts for new vendors that ensure continuity through the end of the program phase. Align all implementer contracts for a single program so they expire at the same time, where practical and consistent with the Company's supply chain and procurement policies.

[54] Budget variances that comprise significant reallocations would be subject to SCC consideration, with stakeholder input. Options could include tolerances (such as percentage terms) for shifts between portfolio programs and allowable increases or decreases in total portfolio spending associated with market circumstances.

- As new contracts are developed, include additional KPIs that aim to boost program performance and encourage cross-promotional activities.
- Look for opportunities to enhance implementation vendor performance standards associated with high-quality program delivery and achievement of energy savings goals.

Continue conducting targeted process evaluations, as outlined in the short-term recommendations, to identify and implement opportunities for program improvement through the life of the DSM portfolio.

- Implement feasible evaluation recommendations and track the adoption of recommendations and outcomes.
- Track program and portfolio performance associated with established KPIs.
- Track trade ally program participation and explore ways to expand the network by offering benefits that trade allies find compelling and valuable and that reduce performance risks through standardized qualification and orientations.
- Assess the effectiveness of enhanced customer awareness efforts based on how they correlate to awareness levels and program participation to identify the most effective messaging strategies and outreach channels at a segment level.
- Track the effectiveness of program delivery to determine whether program design modifications are required to optimize program outcomes.

Continue to evaluate and pursue opportunities to offer integrated clean energy programs.

- Monitor industry trends and leverage stakeholder input to identify emerging technologies and innovative delivery methods.
- Explore and propose pilot programs that integrate the delivery of distributed energy resources across energy efficiency, renewable energy, demand response, electric vehicles, and battery storage. Evaluate pilot program impacts and seek to transition successful pilots into the overall program structure within two to four years of the pilot launch.
- Continue to examine opportunities to use information from the expanding AMI network and other connected devices, so that customers across sectors and throughout Dominion Energy's service territory can benefit from tailored product recommendations and marketing, detailed energy management feedback, and the ability to participate in time-varying rate structures and demand response offerings.

Begin preparing for a new DSM plan filing that will extend the comprehensive, streamlined program structure.

- Continue to contract with an external vendor to complete a potential study that informs SCC and stakeholder considerations of achievable energy efficiency potential in the next phase of VCEA target-setting.
- Continue to monitor the market for emerging technologies and delivery methods that can be used to expand the portfolio and provide new sources of energy savings.

- Assess emerging technologies and successful pilot programs to determine how they fit into the existing program structure or whether they warrant the introduction of a new stand-alone program.
- Explore the feasibility and potential benefits of further integrating energy efficiency programs with demand response, beneficial electrification, distributed energy resources, and/or electric vehicle programs to leverage their consolidated benefits for customers and the Company.
- Continue to engage with stakeholders on opportunities and challenges to achieving targets.

7.1.3. Long-Term Recommendations (2026 and beyond)

When planning for Phase XII programs, issue requests for proposals that align with the seven comprehensive programs outlined in this Plan.

- As the Company nears the end of its efforts to align implementer vendor contract expiration dates, prepare to launch a competitive bidding process in which bidders are tasked with achieving each program's modeled energy efficiency targets within the construct of the established program structure.
- Continue to encourage implementers to create teams that can deliver each program in its entirety under the management and oversight of a single prime contractor.

File a Phase XII DSM portfolio in 2027 that aligns with the comprehensive program structure outlined in this Plan to the extent practical.

- Propose program modifications such as adjusting measures, incentive levels, and implementation based on achievable potential and market intelligence from program implementers.
- Continue to solicit ideas from stakeholders and partners for measures or delivery methods that could be folded into Dominion Energy's existing program structure.
- Evaluate opportunities to integrate customer-facing DSM offerings and streamline utility staff functions and funding resources across Dominion Energy's distributed energy resource portfolio offerings, including energy efficiency, demand response, beneficial electrification, distributed clean energy generation, and battery storage.
- Build energy efficiency requirements into offerings that promote other distributed energy resources (such as solar with battery storage) so that customers benefit from comprehensive solutions that reduce costs.

Capture the full value of energy efficiency by deploying it as a capacity resource.

- Consider targeting energy efficiency as a non-wires solution to load constrained areas of the distribution grid and reduce the need for upgrades.
- Periodically review the use of energy efficiency as a resource in the PJM capacity market to ensure that the DSM portfolio is used in a way that maximizes the benefit in the PJM market balanced against the risk.

7.2. Progress Metrics for Long-Term Plan

To support Dominion Energy's efforts to successfully implement the recommendations listed above and achieve its portfolio objectives, Table 45 provides progress metrics associated with the overarching strategies outlined herein. Dominion Energy can use these metrics to monitor its progress.

Table 45. Strategic Objectives and Progress Metrics

Objective	Short Term (2022 and 2023)	Medium Term (2024 and 2025)	Long Term (2026 and beyond)
Optimize program delivery and customer satisfaction	• Phase XI DSM Plan reflecting bundled programs by sector filed, approved, and operational • Plan in place for transitioning implementation vendor contracts • Pilot program ideation process developed • Framework proposed to the SCC that enables administrative approval for program modifications and budget flexibility	• Streamlined program portfolio is in place and operational • Mid-phase program updates submitted as necessary through Advice Letter filings • Increased customer participation throughout the service territory and across the portfolio • Energy savings achieve annual goals outlined in this Plan and cumulative VCEA savings targets • Progressive alignment of implementation vendor contracts with program phases in place • Ongoing research and development process in place to test innovative pilots • Potential study update initiated and executed to inform Phase XII • Programs modified through administrative approval process as needed	• Phase XII Plan filing reflects updates to consolidated program structure and adds emerging technologies and delivery methods • Refined portfolio integrates DSM, demand response, and renewable energy opportunities as appropriate
Expand efforts to improve general awareness of the Company's energy efficiency programs and the benefits of energy efficiency	• Experienced DSM marketing firm under contract • Consolidated customer-facing program materials and communications strategies developed and in use • Enhanced and expanded marketing and outreach initiatives to increase program awareness underway • Expanded trade ally offerings and recruitment plan in place	• Marketing strategy aligned with comprehensive program portfolio • Documentation of increased program awareness, engagement, and satisfaction	• Sustained high levels of customer awareness of and engagement with portfolio offerings • Long-term customer and trade ally relationships maintained
Enhance and maintain a	• Process evaluation vendor in place	• Process evaluation recommendations tracked and	• Tools, processes, and protocols in

Objective	Short Term (2022 and 2023)	Medium Term (2024 and 2025)	Long Term (2026 and beyond)
framework for assessing, improving, and tracking program operations	• Additional process-oriented program KPIs established (such as for awareness, engagement, satisfaction, and trade ally participation) • Process evaluations of priority programs underway • Regular updates provided to stakeholders and feedback requested	implemented as appropriate and feasible • Increased trade ally participation and local organizational partnerships documented	place to ensure a culture of continuous program improvement

Appendix A. Measure Level Savings, Participation, and Incentive Levels

Please see attached document: *Appendix A. Table A-1. Measure Level Savings, Participation and Incentive Levels.*

Appendix B. Proposed Program Bundles

To allow for programmatic and implementation vendor continuity, the bundled programs presented in this Plan are constructed of Dominion Energy's existing programs. The tables below show how the Company's existing and planned customer-facing programs map to the programs outlined in this plan for the residential, income-qualified, and nonresidential sectors, respectively. In addition to the customer-facing programs outlined, Dominion Energy will propose a Voltage Optimization program in its Phase X DSM filing as part of its strategy to achieve VCEA goals.

Table B-1. Residential Sector Program Bundles

Plan Program	Plan Component	Existing Programs
Residential Energy Services Program	Home assessment and Direct Install	Home Energy Assessment Home Retrofit Residential Virtual Audit Manufactured Housing Multifamily
	Customer Engagement	Customer Engagement
	Appliance Recycling	Appliance Recycling
Residential Efficient Products Program	Efficient Products	Energy Efficient Products Efficient Products Marketplace Electric Vehicles Water Savings Smart Thermostat Purchase and Optimization
	Energy Efficient Kits	Smart Home Energy Efficient Welcome Kits
Residential New Construction Program	NA	Residential New Construction

Table B-2. Income and Age Qualified Sector Program Bundles

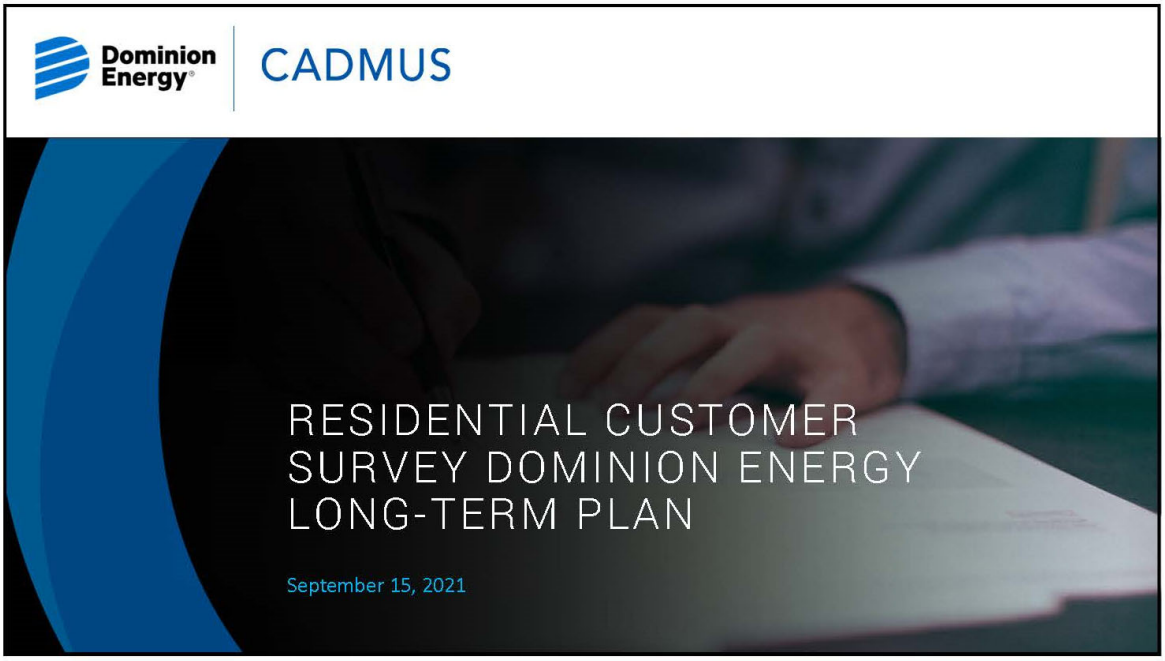
Plan Program	Plan Component	Existing Programs
Income and Age Qualified Program	Home assessment and Direct Install	Income and Age Qualifying Home Improvements Residential IAQ Enhancements HB2789 (Heating and Cooling/Health and Safety) HB2789 (Solar)
	Nonresidential Facilities	Nonresidential IAQ Healthcare and Rental Property Owners
	Customer Engagement	Residential IAQ Home Energy Report

Table B-3. Nonresidential Sector Program Bundles

Plan Program	Plan Component	Existing Programs
Large Business Solutions Program	Custom Rebates	Building Optimization Office Management System Efficiency Nonresidential Engagement Building Optimization
	Facility Audit	Office Management System Efficiency Manufacturing and Air System Efficiency

Plan Program	Plan Component	Existing Programs
	Prescriptive Rebates	Lighting Systems and Controls Heating and Cooling Efficiency Agriculture Data Center Hotel and Lodging Healthcare Multifamily Window Film Building Automation Manufacturing and Air System Efficiency
Small Business Solutions Program	Prescriptive Rebates	Lighting Systems and Controls Heating and Cooling Efficiency Agriculture Multifamily Window Film Building Automation Small Manufacturing and Air System Efficiency
	Audit, Direct Install and Enhanced Rebates	Small Business Improvement Enhanced
	Building Optimization	Office Management System Efficiency Building Optimization
	Customer Engagement	Small Business Behavioral
Nonresidential New Construction Program	NA	Nonresidential New Construction

Appendix C. Residential Survey Report



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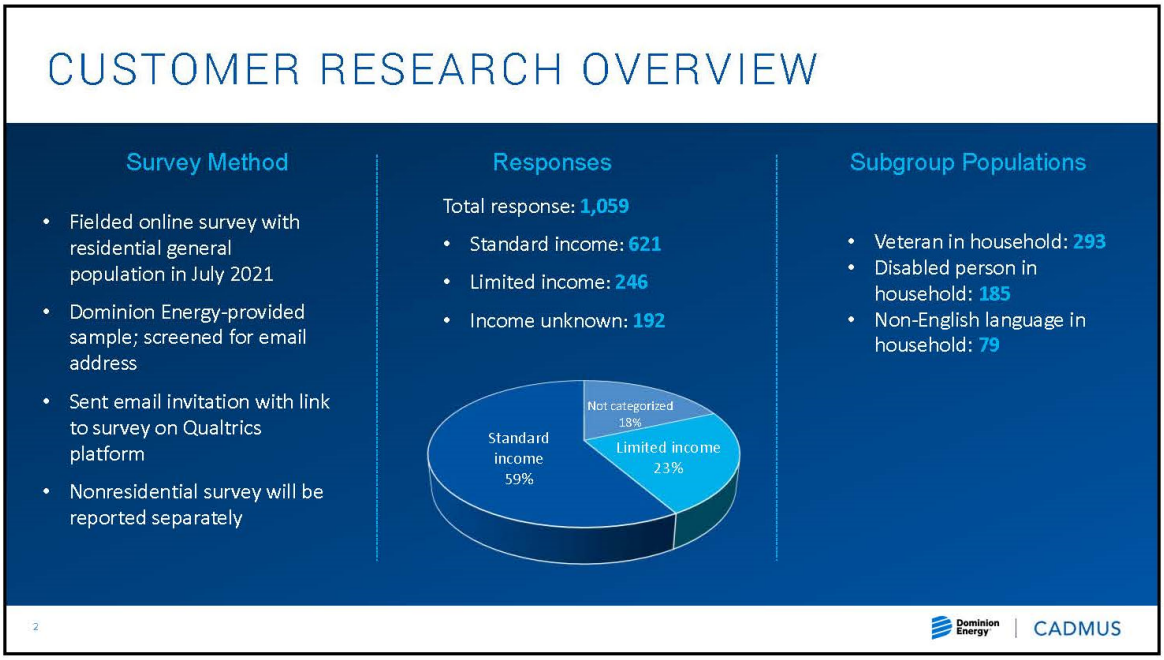

2


CUSTOMER RESEARCH OBJECTIVES
Objectives
Research Questions
Identify effective outreach and education opportunities
What are current awareness levels for existing programs, new technologies, program concepts?
What is the best way to reach customers?
Assess customer drivers and barriers
What emerging programs/service concepts are customers interested in?
What barriers keep customers from participating?
What are participation motivators?
Identify opportunities to engage customers in deeper savings, new technologies and programs
What types of home energy improvements are customers planning on?
What new technologies or program concepts appeal to customers?
What is customers' willingness to adopt specific technologies and at what price points?
Develop inputs to the long-term plan
3
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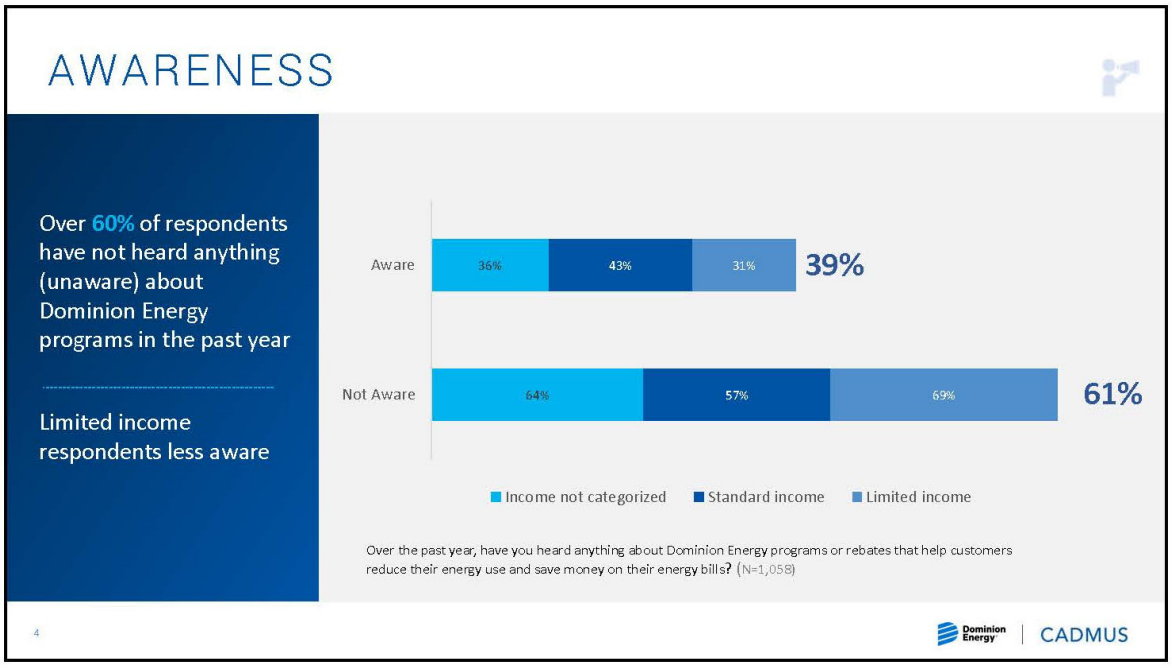
AWARENESS
Over 60% of respondents have not heard anything (unaware) about Dominion Energy programs in the past year
Limited income respondents less aware
Aware
36%
43%
31%
39%
Not Aware
64%
57%
69%
61%
Income not categorized
Standard income
Limited income
Over the past year, have you heard anything about Dominion Energy programs or rebates that help customers reduce their energy use and save money on their energy bills? (N=1,058)
4
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4

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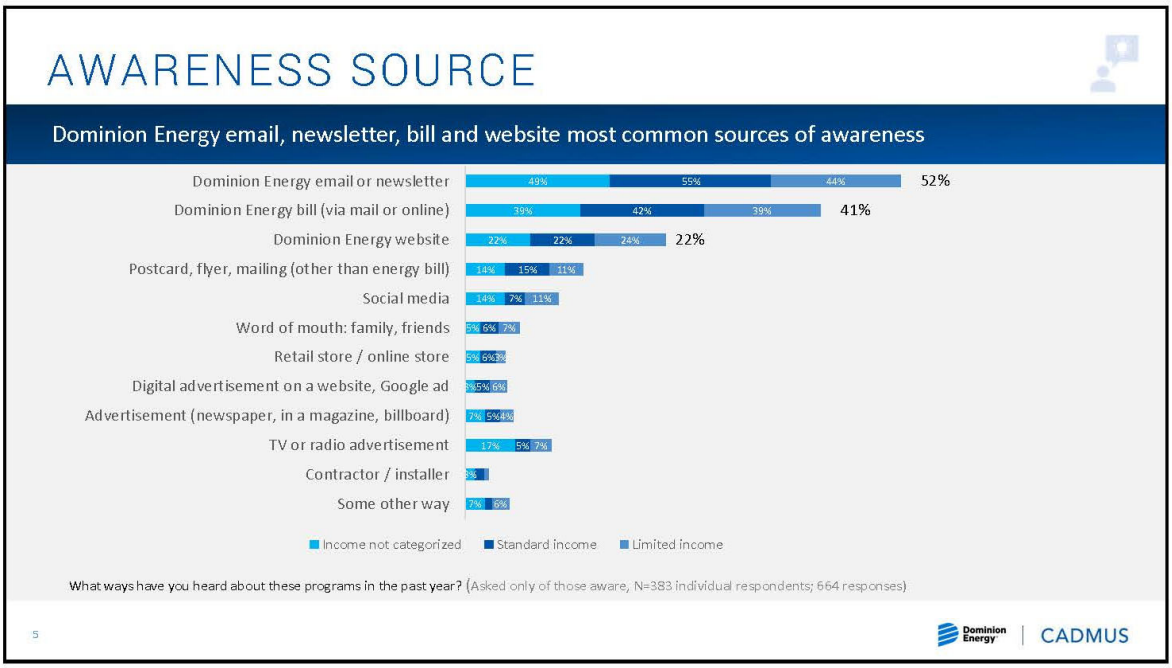
AWARENESS SOURCE
Dominion Energy email, newsletter, bill and website most common sources of awareness
Dominion Energy email or newsletter
49%
55%
44%
52%
Dominion Energy bill (via mail or online)
39%
42%
39%
41%
Dominion Energy website
22%
22%
24%
22%
Postcard, flyer, mailing (other than energy bill)
14%
15%
11%
Social media
14%
7%
11%
Word of mouth: family, friends
5%
6%
7%
Retail store / online store
5%
6%
3%
Digital advertisement on a website, Google ad
3%
5%
6%
Advertisement (newspaper, in a magazine, billboard)
7%
5%
4%
TV or radio advertisement
17%
5%
7%
Contractor / installer
3%
Some other way
7%
6%
Income not categorized
Standard income
Limited income
What ways have you heard about these programs in the past year? (Asked only of those aware, N=383 individual respondents; 664 responses)
5
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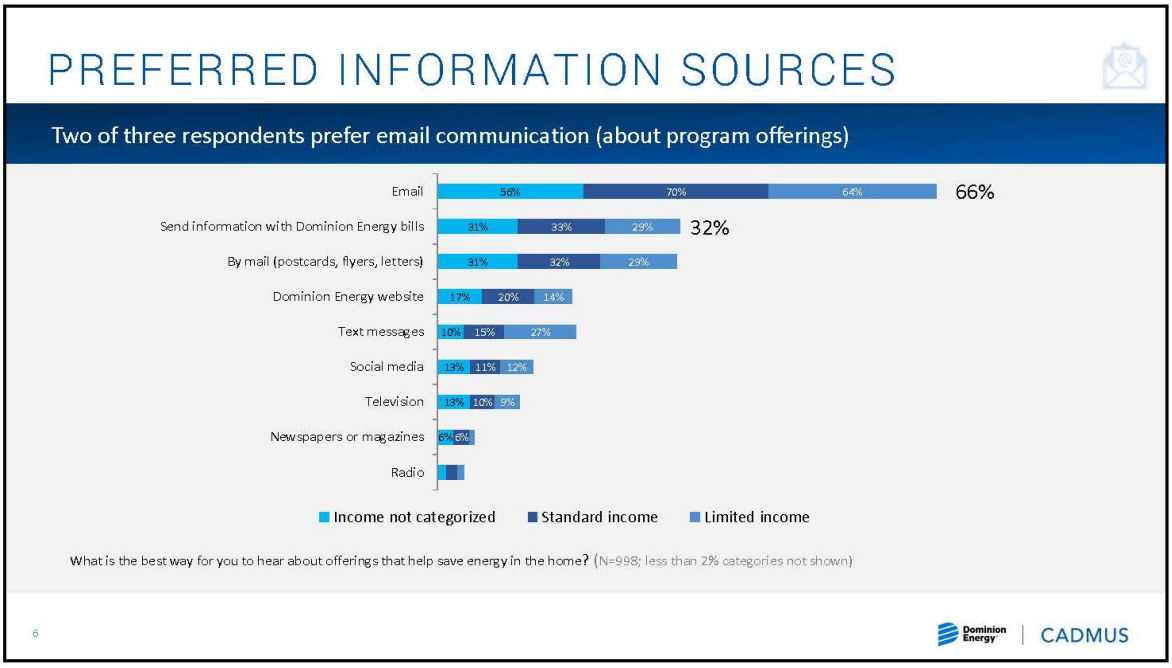
5


PREFERRED INFORMATION SOURCES
Two of three respondents prefer email communication (about program offerings)
Email
56%
70%
64%
66%
Send information with Dominion Energy bills
31%
33%
29%
32%
By mail (postcards, flyers, letters)
31%
32%
29%
Dominion Energy website
17%
20%
14%
Text messages
10%
15%
27%
Social media
13%
11%
12%
Television
13%
10%
9%
Newspapers or magazines
6%
6%
Radio
Income not categorized
Standard income
Limited income
What is the best way for you to hear about offerings that help save energy in the home? (N=998; less than 2% categories not shown)
6
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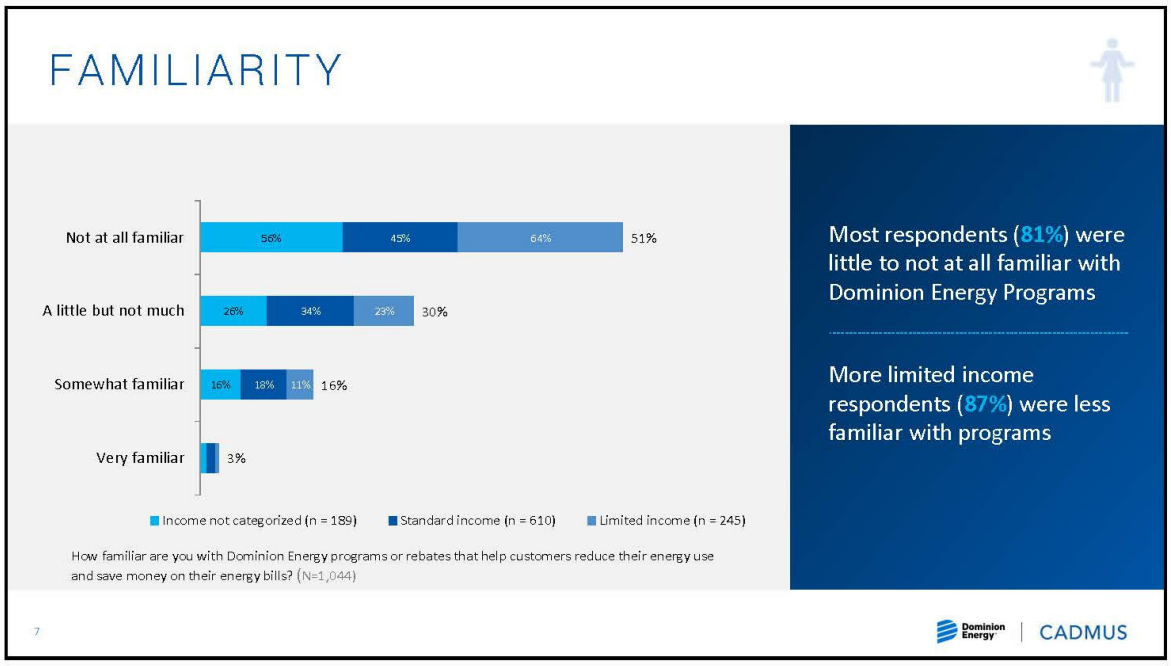
FAMILIARITY
Not at all familiar
56%
45%
64%
51%
A little but not much
26%
34%
23%
30%
Somewhat familiar
16%
18%
11%
16%
Very familiar
3%
Income not categorized (n = 189)
Standard income (n = 610)
Limited income (n = 245)
How familiar are you with Dominion Energy programs or rebates that help customers reduce their energy use and save money on their energy bills? (N=1,044)
Most respondents (81%) were little to not at all familiar with Dominion Energy Programs
More limited income respondents (87%) were less familiar with programs
7
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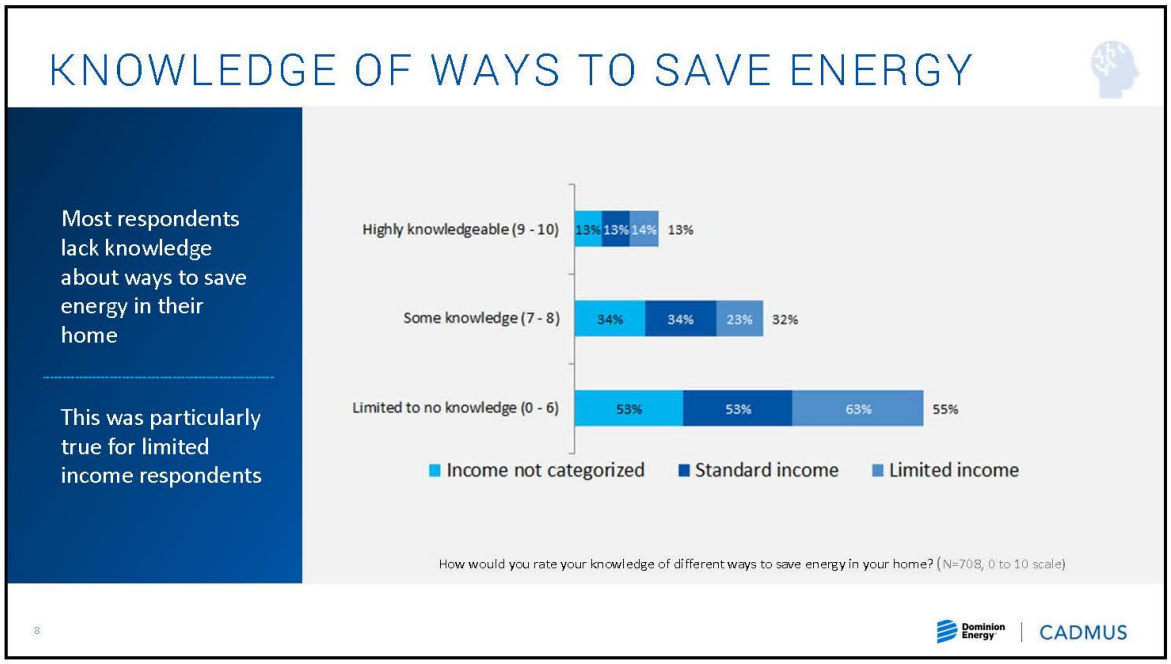
7


KNOWLEDGE OF WAYS TO SAVE ENERGY
Most respondents lack knowledge about ways to save energy in their home
This was particularly true for limited income respondents
Highly knowledgeable (9 - 10)
13%
13%
14%
13%
Some knowledge (7 - 8)
34%
34%
23%
32%
Limited to no knowledge (0 - 6)
53%
53%
63%
55%
Income not categorized
Standard income
Limited income
How would you rate your knowledge of different ways to save energy in your home? (N=708, 0 to 10 scale)
8
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8

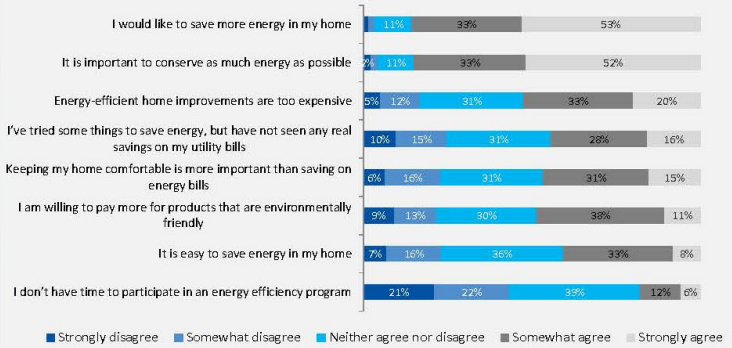
ATTITUDES

Respondents want to **save more energy** in their homes (86%)

Saving energy is **important** (85%)

Just over half (53%) say energy efficiency home improvements are too **expensive**

More disagree (43%) that they don't have **time** to participate (versus 18% who agree)



D2. Please select how much you agree or disagree with each of the following statements. (N=657)

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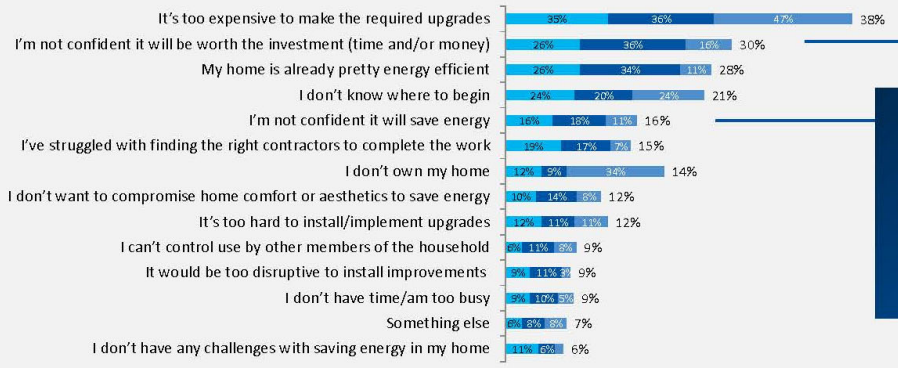
9

CHALLENGES TO SAVING ENERGY



Customers need convincing that energy efficiency investments will translate to energy savings

What challenges, if any, do you face in saving energy in your home? (N=634)

10

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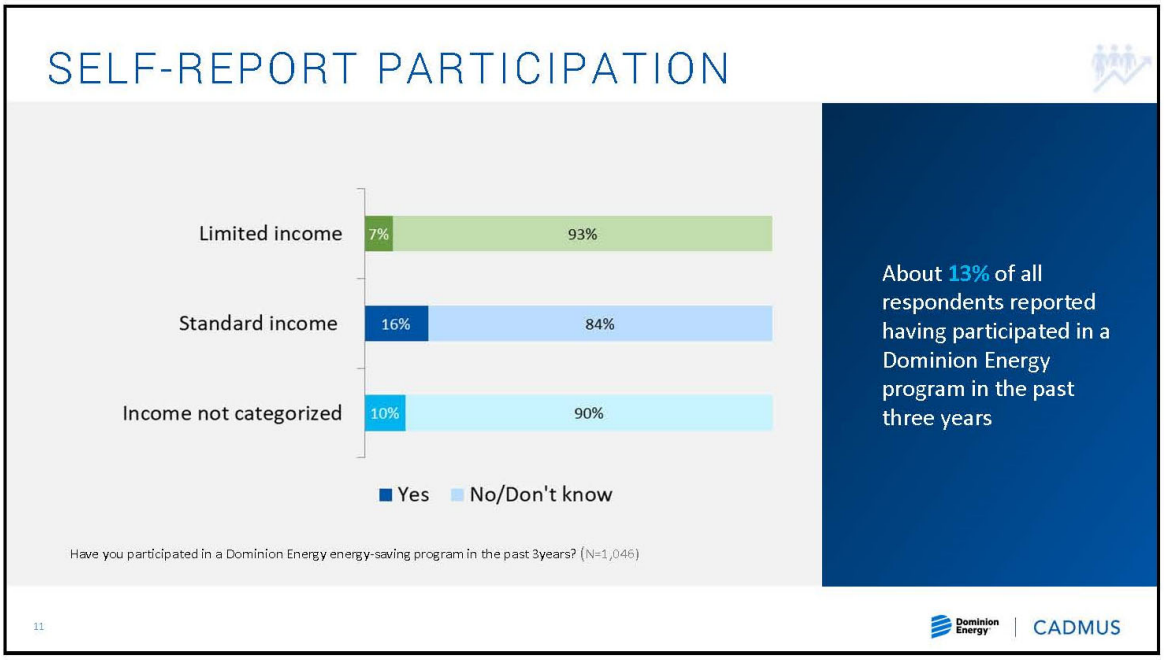
10


SELF-REPORT PARTICIPATION
Limited income
7%
93%
Standard income
16%
84%
Income not categorized
10%
90%
Yes
No/Don't know
Have you participated in a Dominion Energy energy-saving program in the past 3years? (N=1,046)
About 13% of all respondents reported having participated in a Dominion Energy program in the past three years
11
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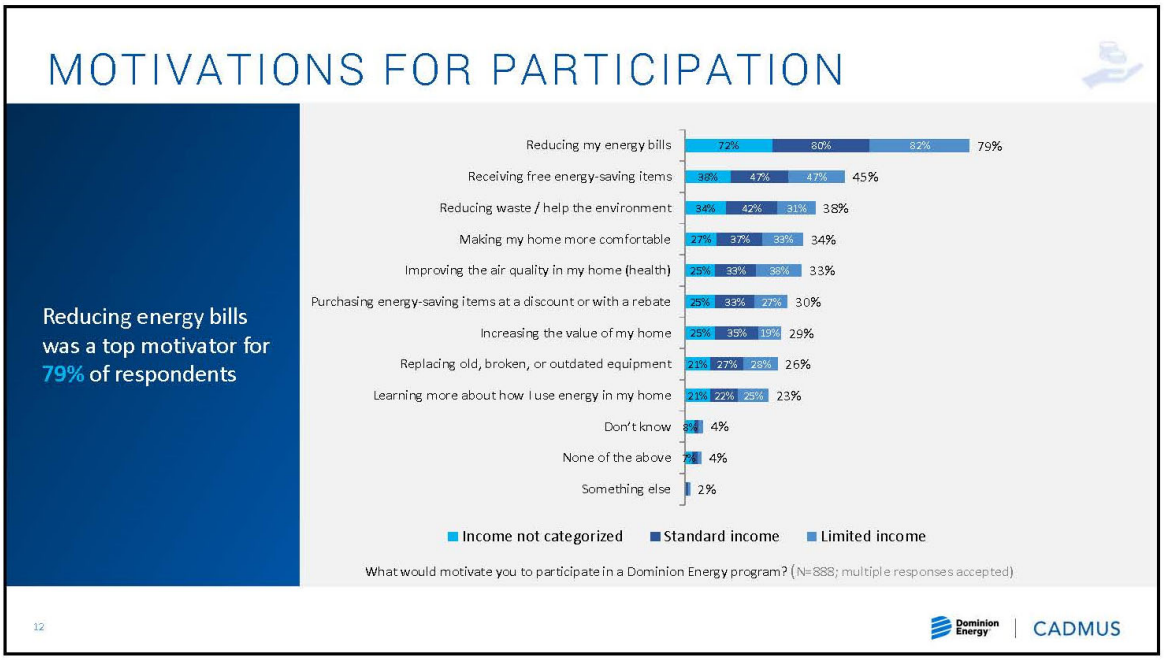
11


MOTIVATIONS FOR PARTICIPATION
Reducing energy bills was a top motivator for 79% of respondents
Reducing my energy bills 72% 80% 82% 79%
Receiving free energy-saving items 38% 47% 47% 45%
Reducing waste / help the environment 34% 42% 31% 38%
Making my home more comfortable 27% 37% 33% 34%
Improving the air quality in my home (health) 25% 33% 38% 33%
Purchasing energy-saving items at a discount or with a rebate 25% 33% 27% 30%
Increasing the value of my home 25% 35% 19% 29%
Replacing old, broken, or outdated equipment 21% 27% 28% 26%
Learning more about how I use energy in my home 21% 22% 25% 23%
Don't know 4%
None of the above 4%
Something else 2%
Income not categorized
Standard income
Limited income
What would motivate you to participate in a Dominion Energy program? (N=888; multiple responses accepted)
12
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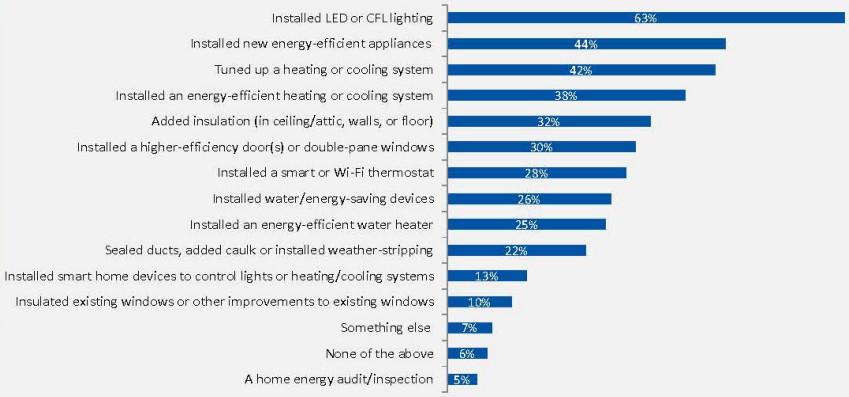
12

SELF-REPORTED HOME IMPROVEMENTS

Respondents' reported home improvements align with their interest in programs



Aside from the Dominion Energy programs you have participated in, have you ever invested in any of these energy efficiency improvements or services? (N=128, multiple responses accepted)

13

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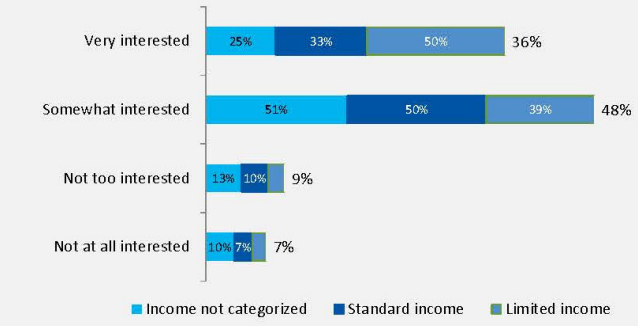
13

PARTICIPATION INTEREST



How interested are you in participating in a Dominion Energy energy-saving program in the future? (N=828)

Most respondents (84%) expressed interest in participating in the future, with limited income respondents expressing strong interest

14

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14

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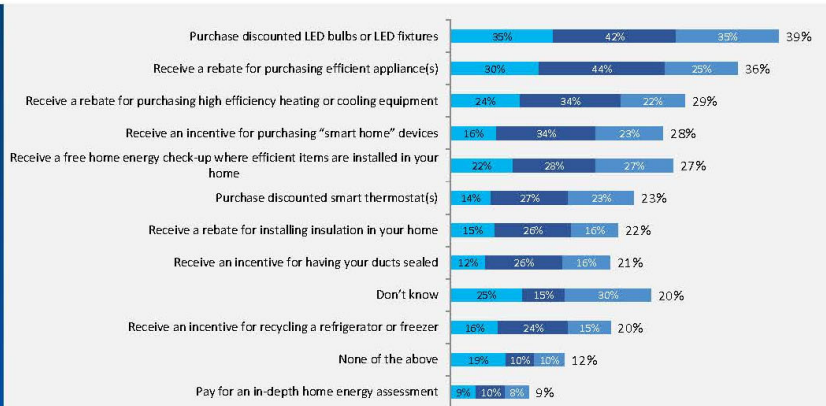
EXISTING PROGRAM INTEREST

Lighting (39%) and appliances (36%) garnered the strongest interest

Most (91%) do not recognize the value of an in-depth home energy assessment



Which of these energy-saving programs are you interested in? (N=858; check all that apply)

15

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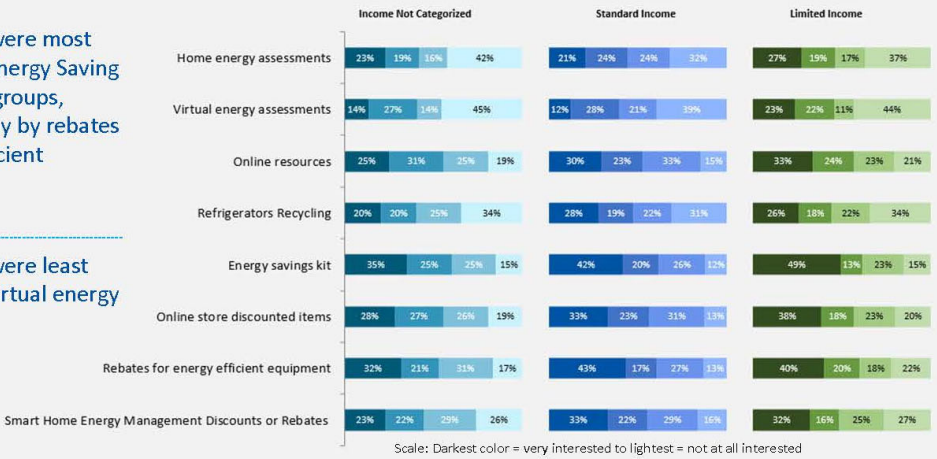
15

PROGRAM INTEREST

Respondents were most interested in Energy Saving Kits across all groups, followed closely by rebates for energy-efficient equipment

Respondents were least interested in virtual energy assessments



Scale: Darkest color = very interested to lightest = not at all interested

How interested are you in the following ways Dominion Energy could help you manage our energy use? (N = 487 – 530, interest scale very interested to not at all interested)

16

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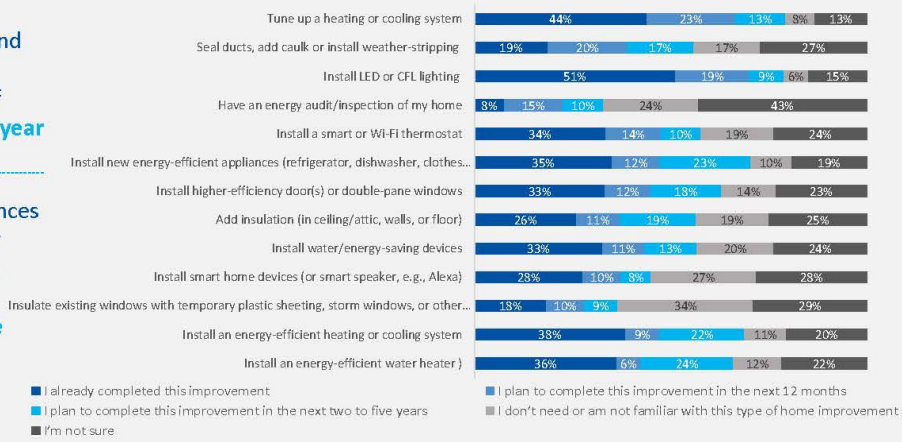
16

EFFICIENCY PLANS

HVAC tune-ups and weather sealing topped the list of plans in the next year

Many had appliances and water heater replacements on the horizon for next three to five years



From the following actions, please select the option that best describes your plans over the next three to five years (N=497, percent selecting)

17

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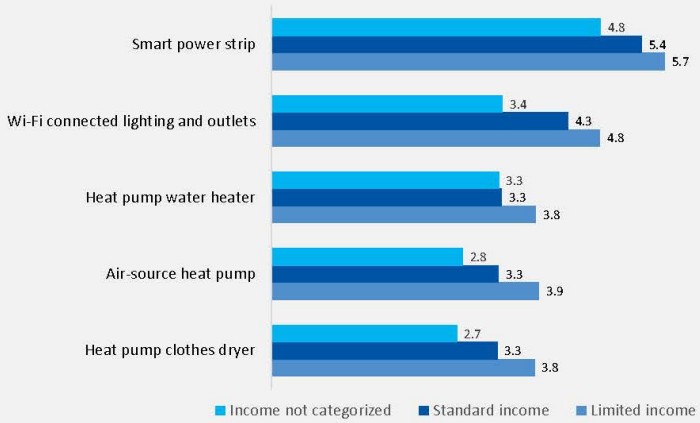
17

TECHNOLOGY INTEREST



How interested would you be in the following types of technologies for your home? (N=485 – 564; 0-10 scale 0=not at all interested, 10=very interested)

Respondents were most interested in smart power strips followed by Wi-Fi connected lighting and outlets

18

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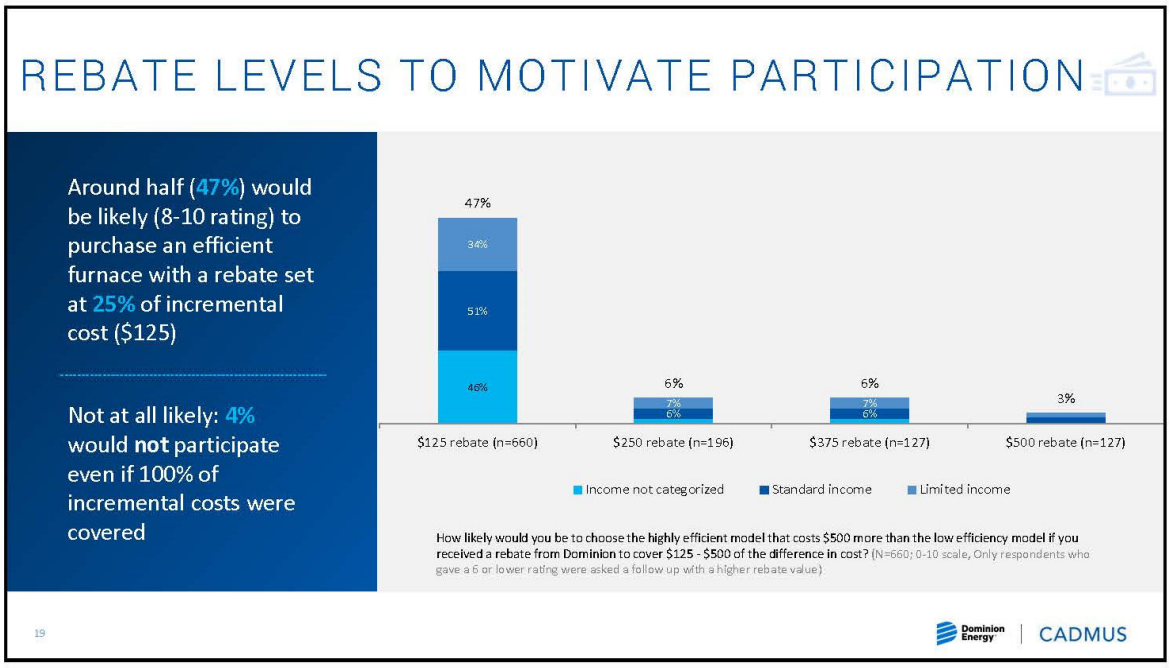
18


REBATE LEVELS TO MOTIVATE PARTICIPATION
Around half (47%) would be likely (8-10 rating) to purchase an efficient furnace with a rebate set at 25% of incremental cost ($125)
Not at all likely: 4% would not participate even if 100% of incremental costs were covered
47%
34%
51%
46%
6%
7%
6%
6%
7%
6%
3%
$125 rebate (n=660)
$250 rebate (n=196)
$375 rebate (n=127)
$500 rebate (n=127)
Income not categorized
Standard income
Limited income
How likely would you be to choose the highly efficient model that costs $500 more than the low efficiency model if you received a rebate from Dominion to cover $125 - $500 of the difference in cost? (N=660; 0-10 scale, Only respondents who gave a 6 or lower rating were asked a follow up with a higher rebate value)
19
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19


HOME & PERSONAL CHARACTERISTICS
20
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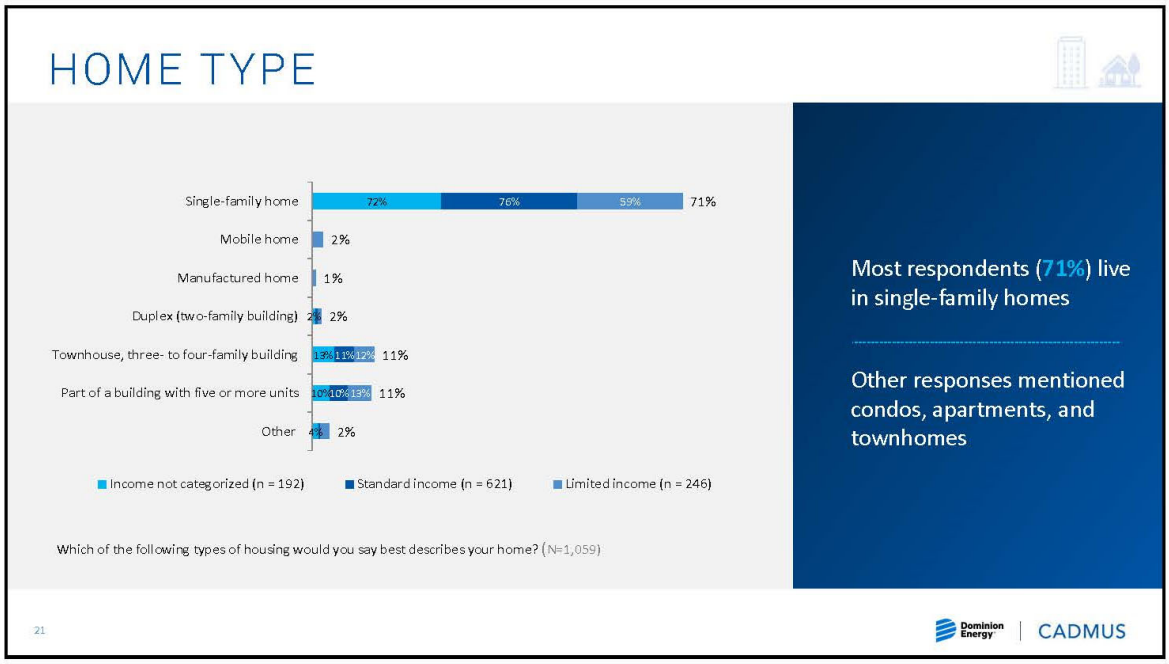
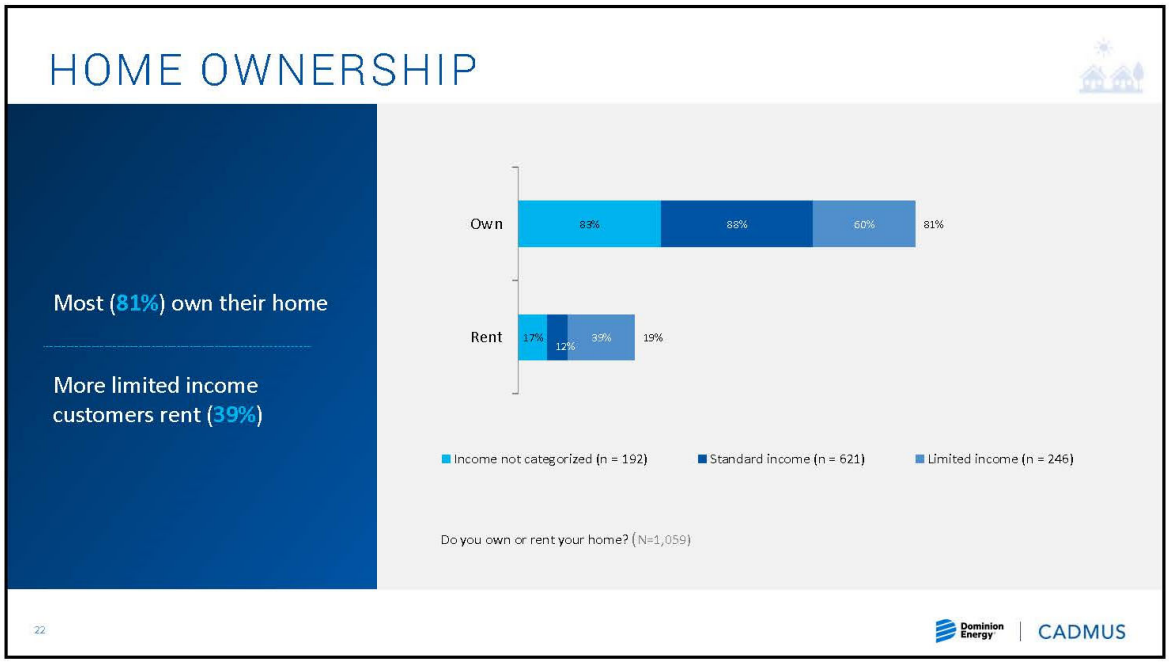

HOME TYPE
Single-family home
72%
76%
59%
71%
Mobile home
2%
Manufactured home
1%
Duplex (two-family building)
2%
Townhouse, three- to four-family building
11%
Part of a building with five or more units
11%
Other
2%
Income not categorized (n = 192)
Standard income (n = 621)
Limited income (n = 246)
Which of the following types of housing would you say best describes your home? (N=1,059)
Most respondents (71%) live in single-family homes
Other responses mentioned condos, apartments, and townhomes
21
Dominion Energy
CADMUS

21


HOME OWNERSHIP
Most (81%) own their home
More limited income customers rent (39%)
Own
83%
88%
60%
81%
Rent
17%
12%
39%
19%
Income not categorized (n = 192)
Standard income (n = 621)
Limited income (n = 246)
Do you own or rent your home? (N=1,059)
22
Dominion Energy
CADMUS

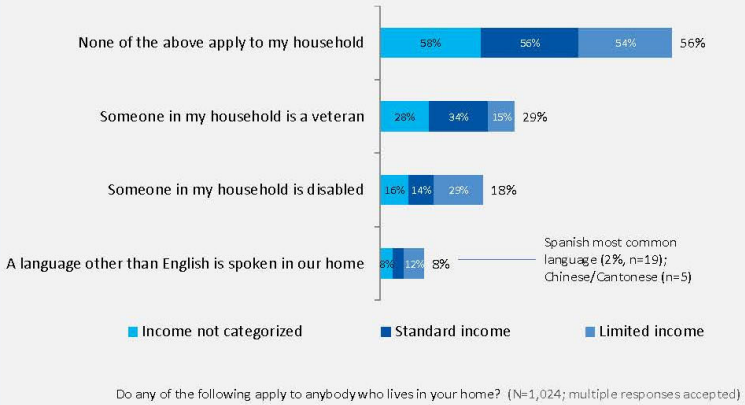
22

SPECIAL CATEGORIES

More standard income reported having a veteran in the household (34%)

More limited income reported having with a disabled household member (29%)

More than half (56%) said none of the statuses applied



Do any of the following apply to anybody who lives in your home? (N=1,024; multiple responses accepted)

23

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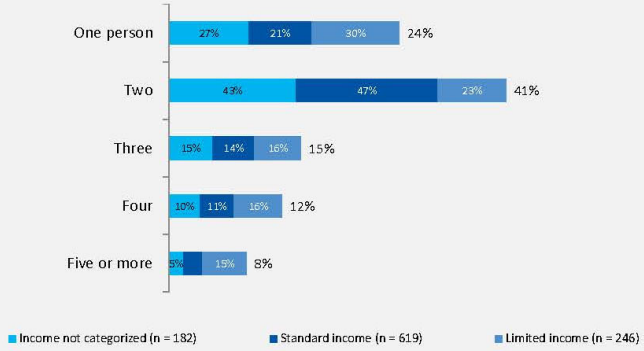
23

HOUSEHOLD SIZE

Two-thirds (65%) live in one- or two-person households

Limited income more likely to have larger families and slightly more single-person households



Including yourself, how many people usually live in your household on a full-time basis? (N=1,047)

24

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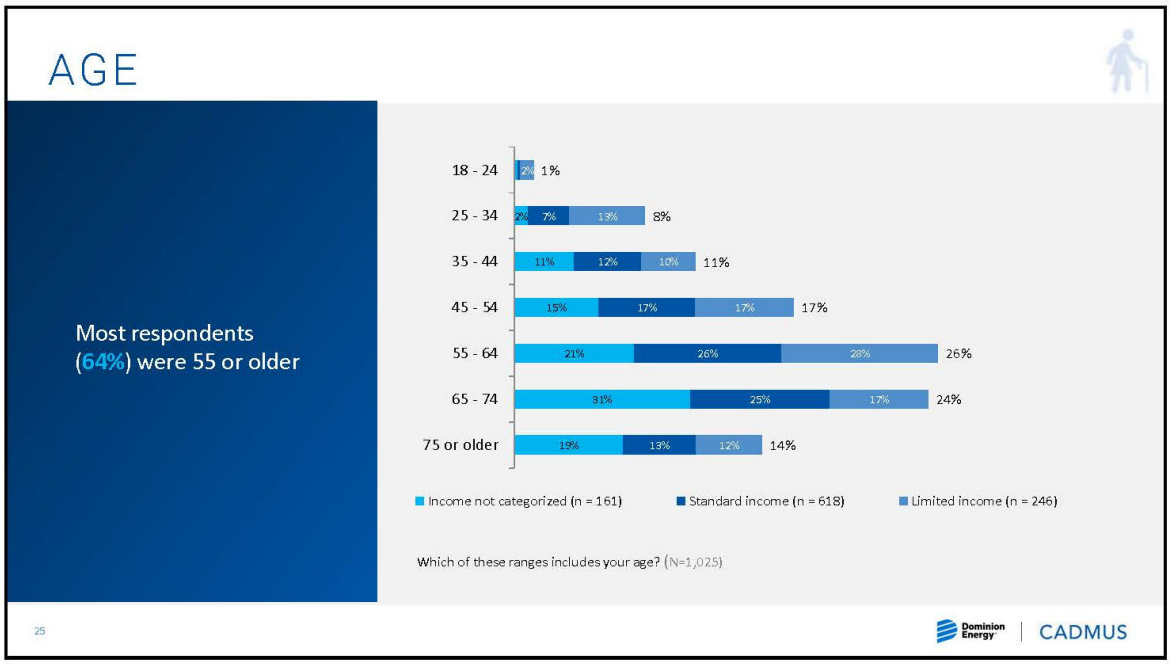
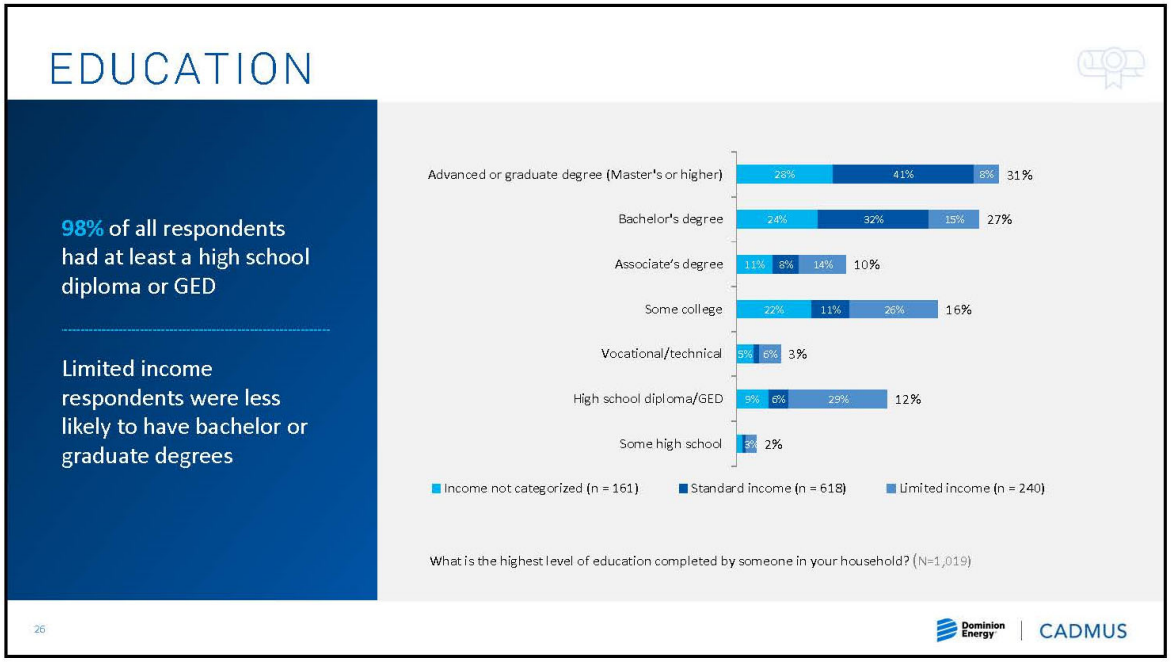
24


AGE
Most respondents (64%) were 55 or older
18 - 24
25 - 34
35 - 44
45 - 54
55 - 64
65 - 74
75 or older
Income not categorized (n = 161)
Standard income (n = 618)
Limited income (n = 246)
Which of these ranges includes your age? (N=1,025)
25
Dominion Energy | CADMUS

25


EDUCATION
98% of all respondents had at least a high school diploma or GED
Limited income respondents were less likely to have bachelor or graduate degrees
Advanced or graduate degree (Master's or higher)
Bachelor's degree
Associate's degree
Some college
Vocational/technical
High school diploma/GED
Some high school
Income not categorized (n = 161)
Standard income (n = 618)
Limited income (n = 240)
What is the highest level of education completed by someone in your household? (N=1,019)
26
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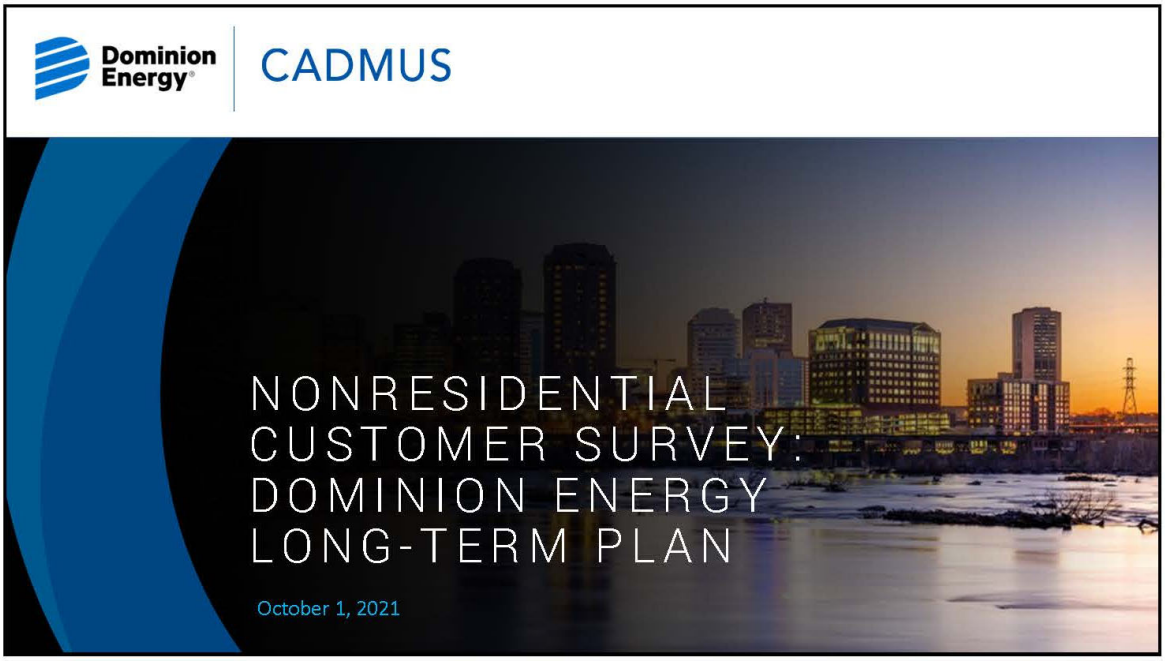
26

Appendix D. Nonresidential Survey Report



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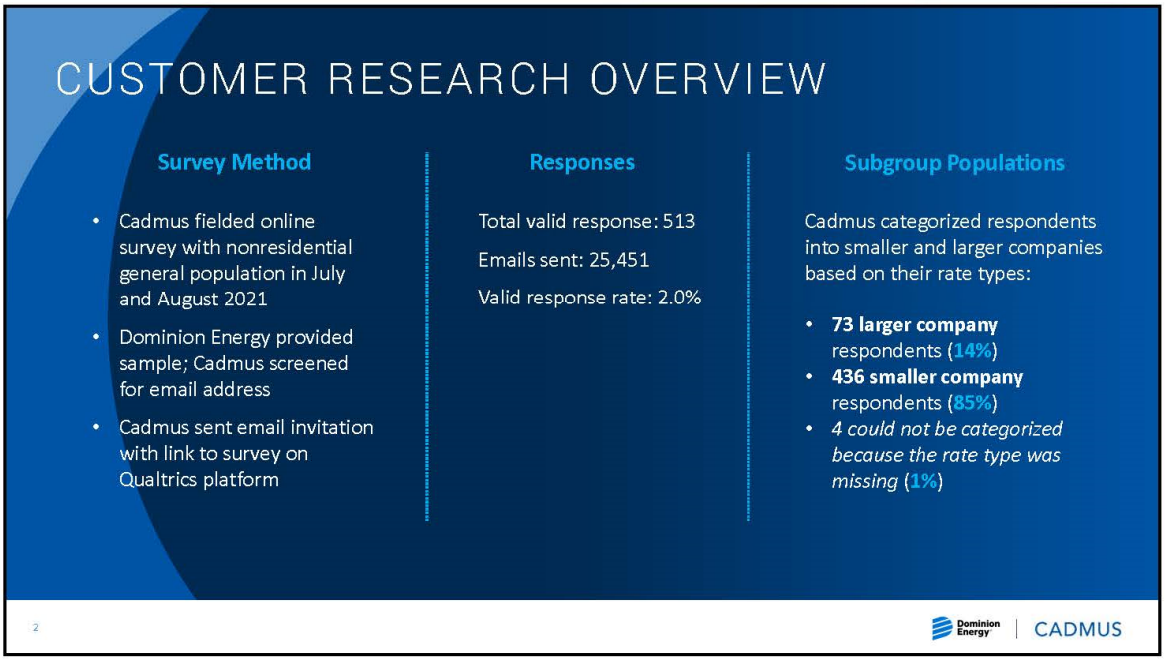

2

CUSTOMER RESEARCH OBJECTIVES

Objectives	Research Questions
Identify effective outreach and education opportunities	What are current awareness levels of existing programs, new technologies, and program concepts?
	What is the best way to reach customers?
Assess customer drivers and barriers	What emerging programs and service concepts do customers find interesting?
	What barriers keep customers from participating?
	What motivates customers to participate?
Identify opportunities to engage customers in deeper savings and new technologies and programs	What types of energy improvements do customers plan on making?
	What new technologies or program concepts appeal to customers?
	What is customers' willingness to adopt specific technologies and at what price points?
Develop inputs to the long-term plan	

3

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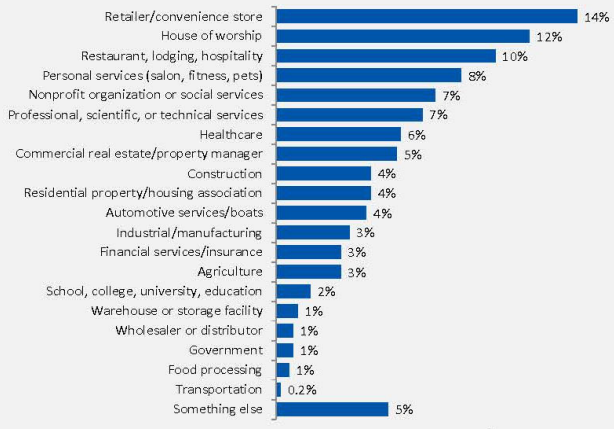
3

INDUSTRY REPRESENTATION

Survey respondents represented a broad range of industries

The most common industries were:

- Retailers (14%)
- Houses of worship (12%)
- Restaurants, lodging, and hospitality (10%)
- Personal services (8%)



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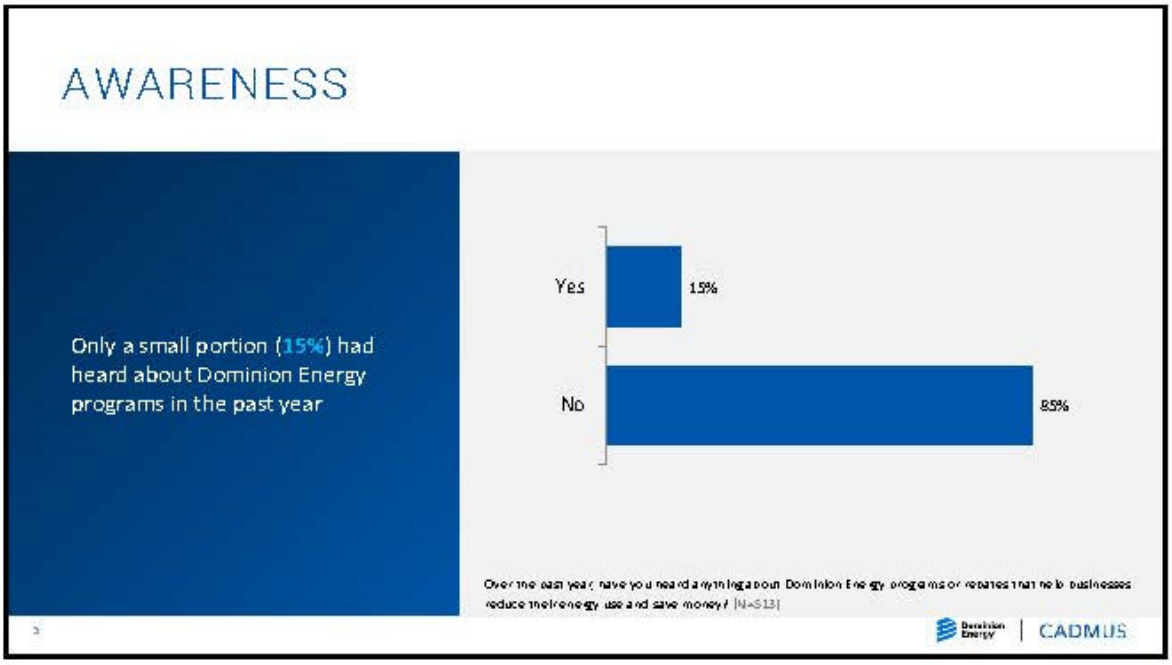
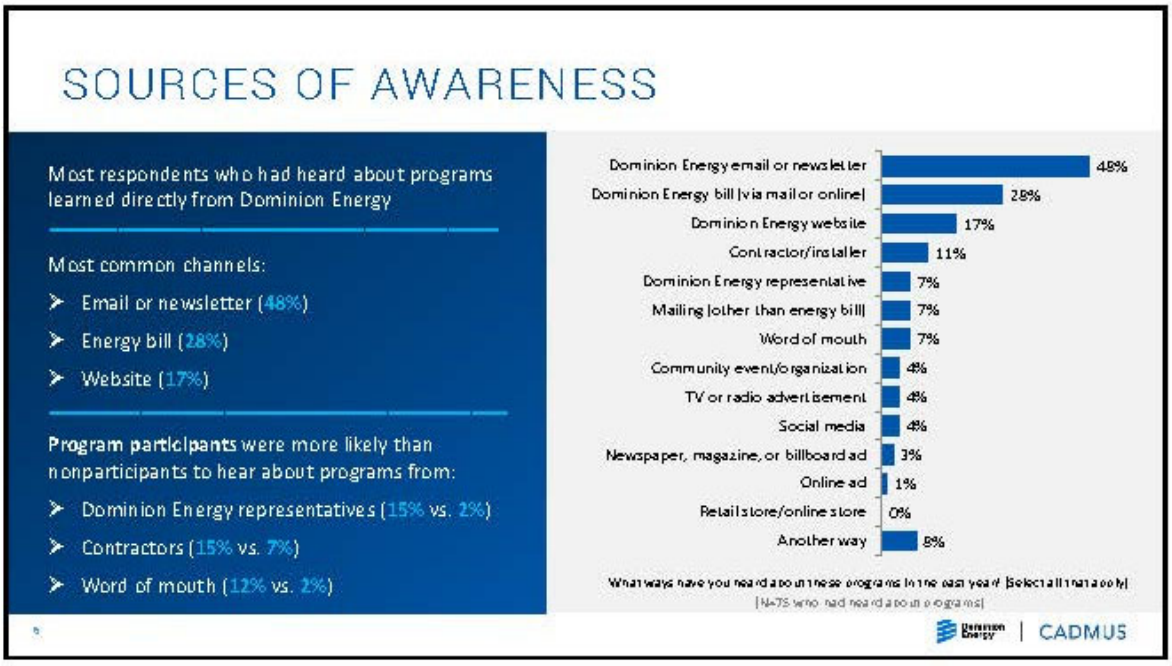
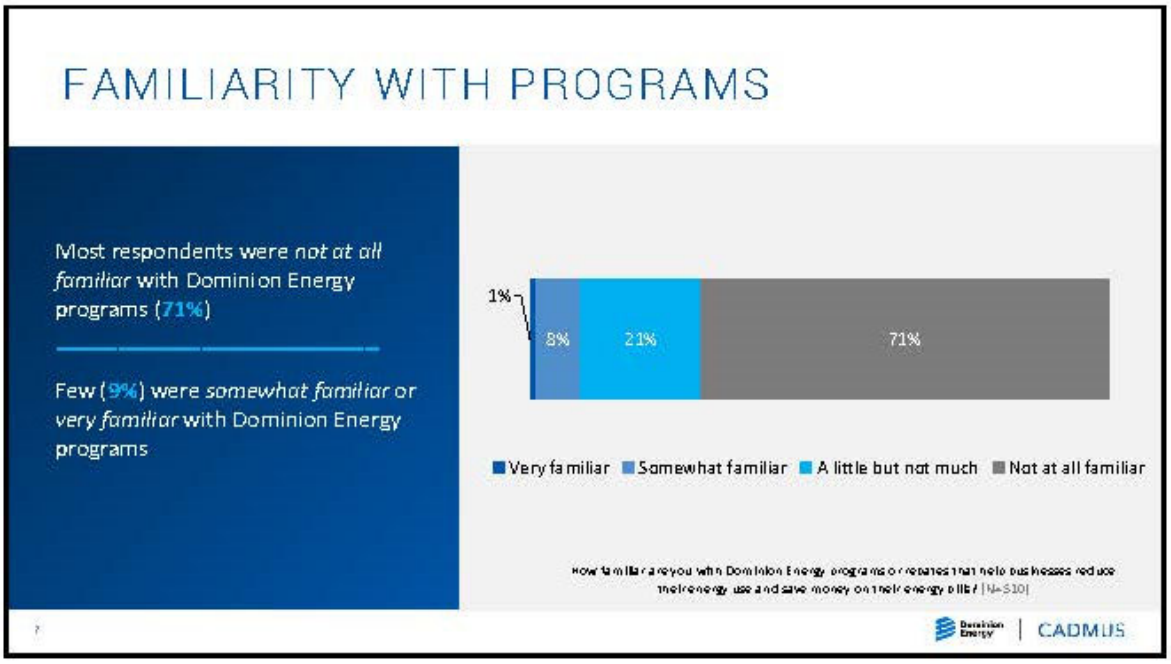

AWARENESS
Only a small portion (15%) had heard about Dominion Energy programs in the past year
Yes
15%
No
85%
Over the last year, have you heard anything about Dominion Energy programs or rebates that help businesses reduce their energy use and save money? (N=513)
CADMUS

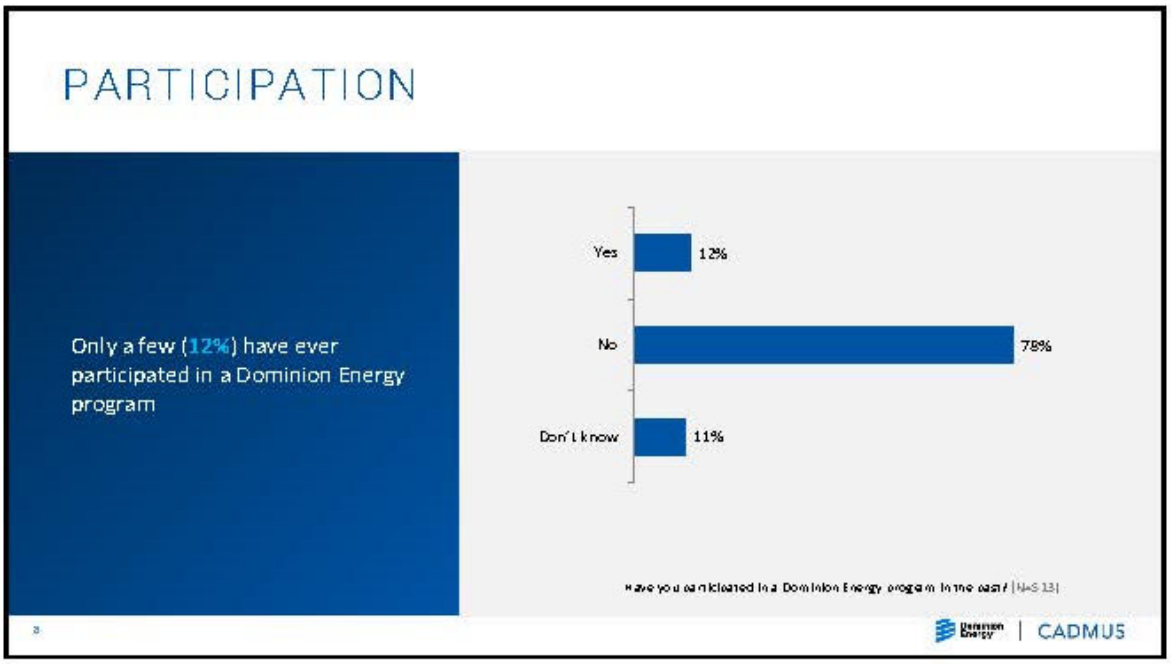
5


SOURCES OF AWARENESS
Most respondents who had heard about programs learned directly from Dominion Energy
Most common channels:
Email or newsletter (48%)
Energy bill (28%)
Website (17%)
Program participants were more likely than nonparticipants to hear about programs from:
Dominion Energy representatives (15% vs. 2%)
Contractors (15% vs. 7%)
Word of mouth (12% vs. 2%)
Dominion Energy email or newsletter 48%
Dominion Energy bill (via mail or online) 28%
Dominion Energy website 17%
Contractor/installer 11%
Dominion Energy representative 7%
Mailing (other than energy bill) 7%
Word of mouth 7%
Community event/organization 4%
TV or radio advertisement 4%
Social media 4%
Newspaper, magazine, or billboard ad 3%
Online ad 1%
Retail store/online store 0%
Another way 8%
What ways have you heard about these programs in the last year? (Select all that apply)
(N=75 who had heard about programs)
CADMUS

6


FAMILIARITY WITH PROGRAMS
Most respondents were *not at all familiar* with Dominion Energy programs (71%)
Few (9%) were *somewhat familiar* or *very familiar* with Dominion Energy programs
1%
8%
21%
71%
Very familiar
Somewhat familiar
A little but not much
Not at all familiar
CADMUS

7

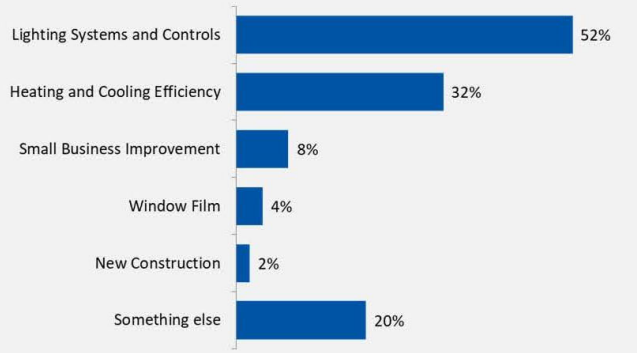

PARTICIPATION
Only a few (12%) have ever participated in a Dominion Energy program
Yes
12%
No
78%
Don't know
11%
CADMUS

8

CADMUS

PROGRAM PARTICIPATION

Respondents who had participated were most likely to have participated in Lighting Systems and Controls (52%) or Heating and Cooling Efficiency (32%) measures



Which of these Dominion Energy programs did you participate in? (Select all that apply) (N=50 participants)

9

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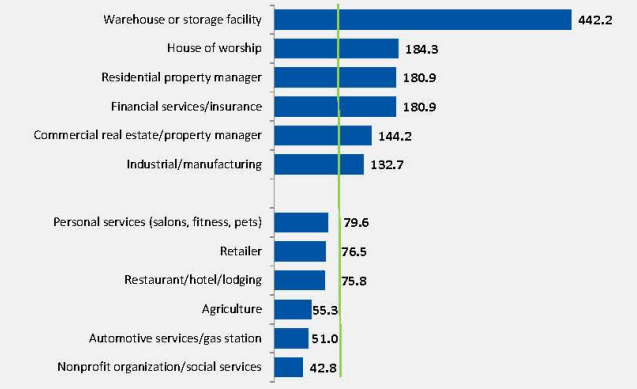
9

PARTICIPATION BY INDUSTRY

Warehouses, houses of worship, property management companies, and financial services organizations were **more likely to have participated** in Dominion Energy programs

Nonprofits, automotive services, agricultural companies, retailers, personal services organizations, and restaurant and lodging businesses were **less likely to have participated**



Index scores for industry participation (industry specific percentage of participants divided by percentage of nonparticipants): scores over 100 (represented by the green line) indicate that the industry has above-average participation rates, while scores under 100 indicate lower-than-average participation.

10

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10

REASONS FOR PARTICIPATING

Reducing energy costs (68%) was the main reason most respondents participated in Dominion Energy programs

For some respondents, replacing old equipment (25%), achieving organizational sustainability goals (20%), and improving employee comfort and safety (14%) were important factors for participating

What were the reasons why you decided to participate in the program(s)? (Select all that apply) (N=56 participants)

11

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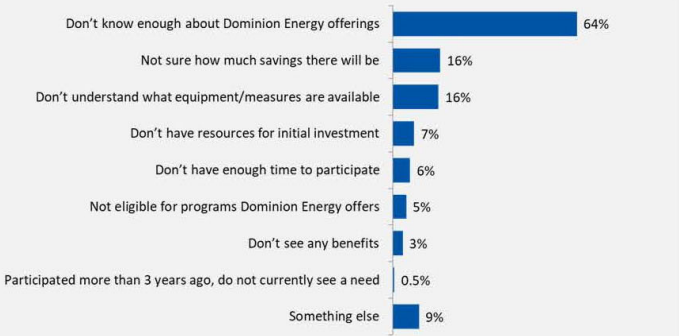
11

REASONS FOR NOT PARTICIPATING

Most nonparticipants (64%) reported that not knowing enough about Dominion Energy offerings was a barrier to participation

No other barriers were cited by more than a few respondents each: uncertainty about savings (16%) and not knowing what equipment is available (16%) were the most frequently mentioned



What factors have prevented you from participating in a Dominion Energy offering in the past three years? (N=412 nonparticipants)

12

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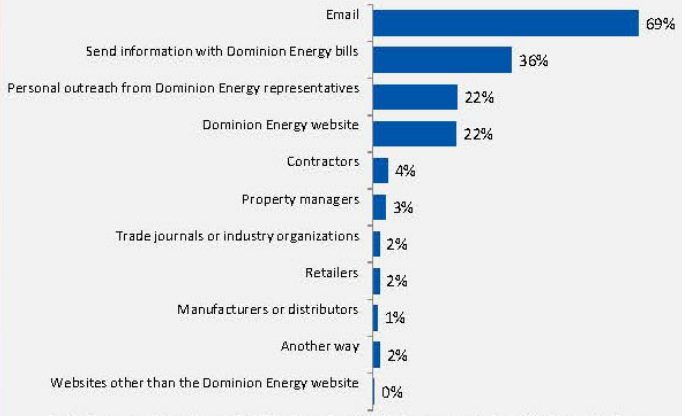
12

PREFERRED COMMUNICATIONS

Most respondents (69%) said email is the best way for them to hear about Dominion Energy offerings

Sending information with utility bills (36%), personal outreach from Dominion Energy representatives (22%), and the Dominion Energy website (22%) were also mentioned frequently



In what ways would you be most likely to hear about Dominion Energy offerings to help your business save energy? (Select all that apply) (N=487)

13

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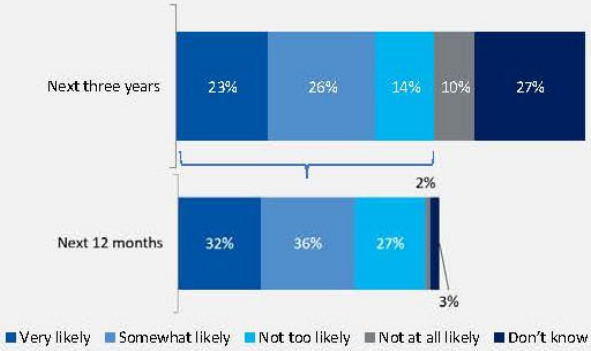
13

INTENTION TO PARTICIPATE

About half of respondents (49%) said they were *very likely* or *somewhat likely* to participate in a Dominion Energy program in the next three years

Among respondents with some likelihood of participating in a program over the next three years, most said they were *very likely* or *somewhat likely* (68%) to participate in the next 12 months



How likely is it that your business will request an incentive from Dominion Energy for an energy efficiency project within the next three years? (N=513) How likely is it that your business will request an incentive from Dominion Energy for an energy efficiency project within the next 12 months? (N=317)

14

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14

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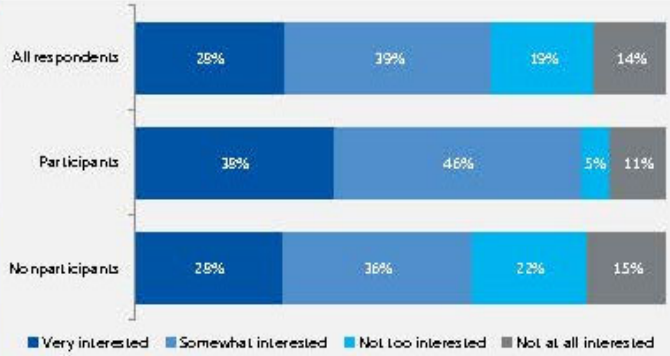
INTEREST IN TRAINING

Most respondents (67%) said they were *very interested* or *somewhat interested* in receiving training from Dominion Energy

Participants (84%) were more interested than nonparticipants (63%) in training from Dominion Energy



To what extent would you be interested in receiving training from Dominion Energy [such as how to operate buildings more efficiently or details about HVAC applications, commercial air conditioners and other systems, industrial ventilation, building management systems, or other items]? [N=511 all respondents; N=60 participants; N=386 nonparticipants; 55 did not know if their company participated]

15 | Dominion Energy | CADMUS

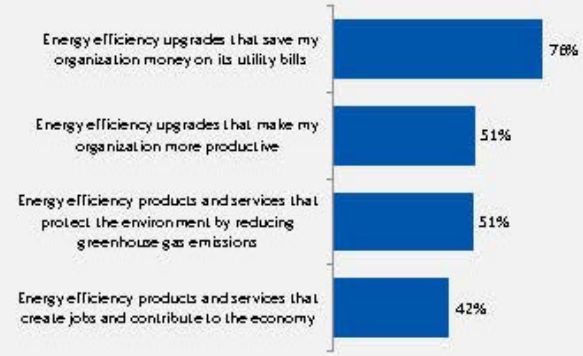
16

MOTIVATIONS

Most respondents said saving money on utility bills (76%) was *very important* in deciding to make energy efficiency improvements

About half of respondents also said that productivity (51%) and reducing emissions (51%) were *very important*

Jobs and the economy were also very *important* factors for 42% of respondents



The following is a list of statements about energy efficiency. Please select a response to each to indicate how important these statements are to you when deciding whether to make energy-efficient improvements to your facility. [Percentage rating *very important*, N=462 to 486]

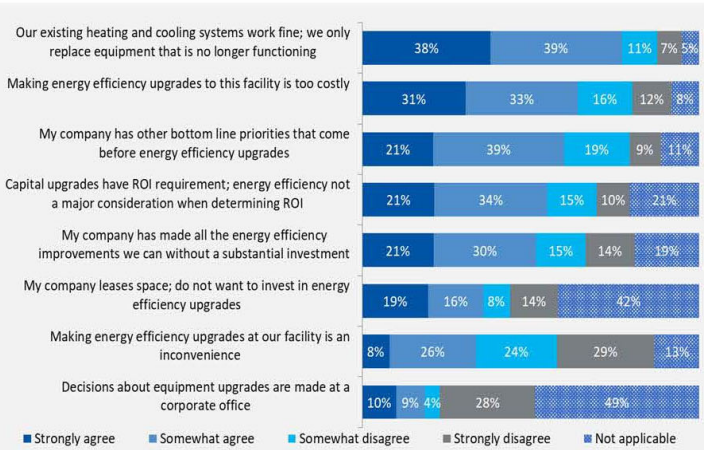
16 | Dominion Energy | CADMUS

BARRIERS

Most respondents *strongly agree* or *somewhat agree* that they only replace equipment on failure (77%) and that upgrades are too costly (64%)

Not wanting to invest in leased space was a challenge for most facilities that lease (35%), but for many this issue was not relevant (42%)

Corporate decision-making was not relevant for many (49%) and only a few agreed it was important (19%)



Below is a list of challenges that companies may experience when purchasing new equipment or considering energy efficiency improvements. Please select a response for each to indicate to what extent you agree or disagree with these statements. (N=291 to 369)

17

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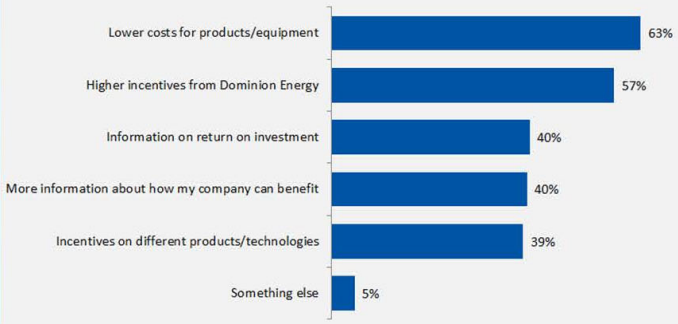
17

OVERCOMING BARRIERS

Most respondents said lower equipment costs (63%) and higher incentives (57%) would make them more likely to prioritize energy efficiency when upgrading equipment

Information on the return on investment (40%) and benefits to the company (40%) were also motivating for many

Respondents who wanted more information on benefits (40%, n=123) said Dominion Energy would be the best source (83%)



What would make your business more likely to prioritize energy efficiency when purchasing new or upgrading current equipment? (Select all that apply) (N=403)

18

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18

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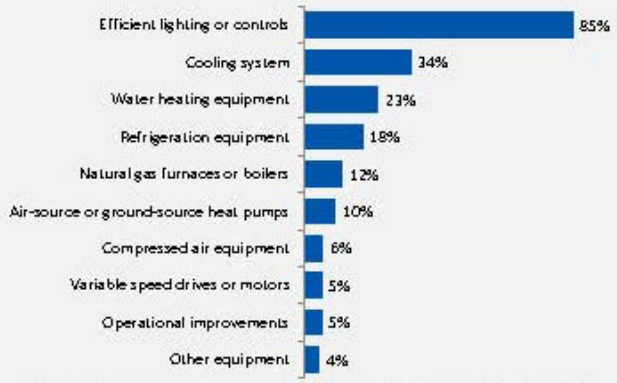
ENERGY EFFICIENCY ENGAGEMENT

Most respondents said they have installed energy-efficient equipment in the past without receiving incentives from Dominion Energy or another organization (58%, n=423)

Most respondents who installed efficient equipment have installed lighting (85%)

Cooling (34%), water heating (23%), and refrigeration (18%) equipment were also common



What were the energy-efficient products that you installed in the past without getting an incentive? (N=223 who installed equipment)

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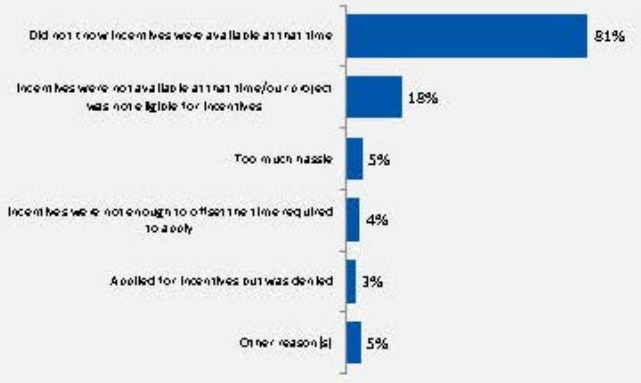
19

LOST OPPORTUNITIES

Overwhelmingly, respondents did not apply for incentives for their equipment because they did not know incentives were available (81%)

Some respondents said their projects were not eligible for incentives (18%) or their application was denied (3%)

Very few said it was too much hassle (5%) or the amount was not worth the time to apply (4%)



Why did you not get an incentive for these upgrades? (Select all that apply) (N=213 who installed equipment)

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20

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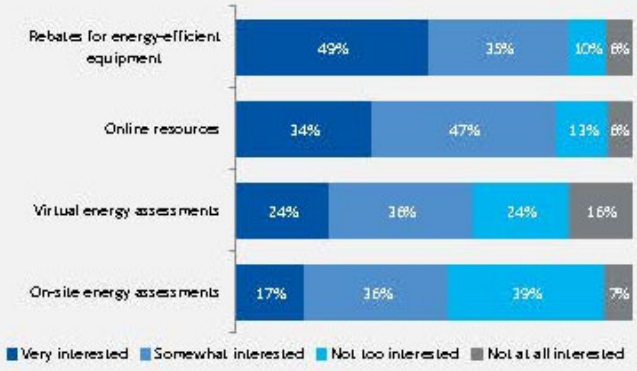
INTEREST IN OFFERINGS

Most respondents were *very interested* or *somewhat interested* in rebates for efficient equipment (84%) and access to online resources (81%)

A little more than half were interested in virtual energy assessments (60%) and on-site energy assessments (54%)



How interested are you in the following ways Dominion Energy could help you manage your energy use? (N=324 to 340)

21

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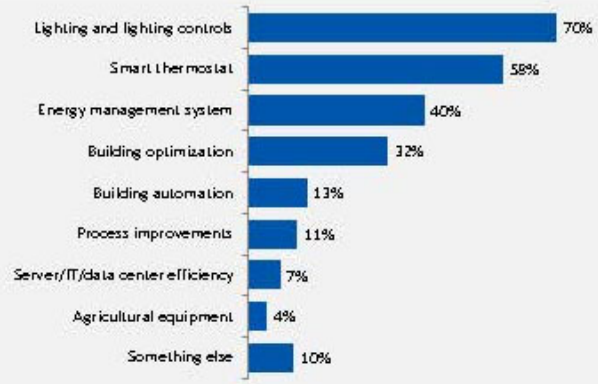
21

INTEREST IN UPGRADES

Respondents who said they were interested in rebates were asked what equipment they were considering for upgrades

Most were interested in lighting and lighting controls (70%) and smart thermostats (58%)

There was also substantial interest in energy management systems (40%) and building optimization (32%)



Which equipment or processes are you interested in upgrading to improve efficiency? (Select all that apply) (N=228)

22

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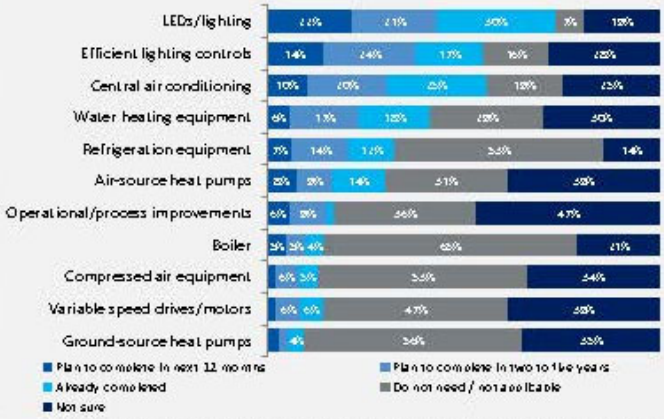
22

CADMUS

PLANNED UPGRADES

The most common upgrades planned by respondents over the next five years are **efficient lighting** (43%), **lighting controls** (38%), **central air conditioning** (31%), and **water heating** (23%) – these are also the upgrades respondents were most likely to have already completed

Fewer than 10% have current plans to upgrade **boilers, compressed air equipment, variable speed drives and motors,** or **ground-source heat pumps** – more than 85% said these were not applicable or they were not sure



For the following types of upgrades, please select the option that best describes your organization's plans over the next three to five years. [N=248 to 279]

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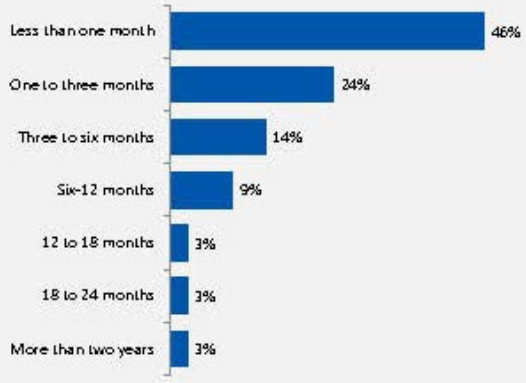
23

APPROVAL TIMING

Almost half of respondents said their organization usually approves energy efficiency upgrades in less than one month (46%)

Only a few respondents said approval usually takes six months or longer (17%)



How long does your organization usually take to approve proposed energy efficiency upgrades? [N=274]

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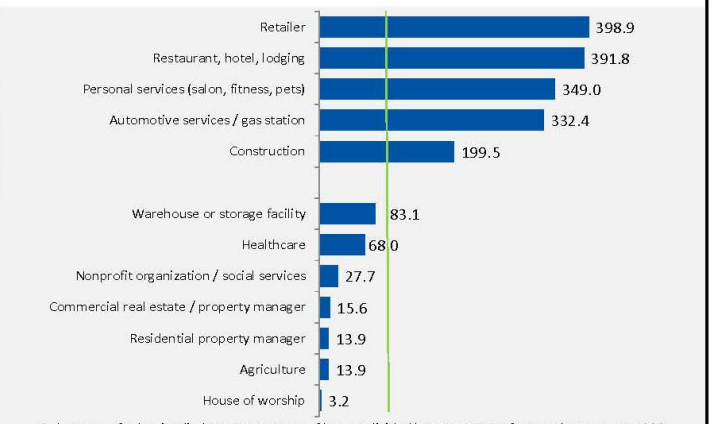
24

CADMUS

LEASING SPACE BY INDUSTRY

Retailers, restaurants, personal services, and auto services companies were **more likely to lease space for their facilities**

Houses of worship, agricultural companies, property management companies, and nonprofits were **more likely to own their facilities**



Index scores for leasing (industry percentage of leasers divided by percentage of owners): scores over 100 (represented by the green line) indicate that the industry has above-average rates of leasing space, while scores under 100 indicate above-average rates of owning space.

25

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25

SEGMENTATION BY COMPANY SIZE

Method

- Cadmus used "rate type" codes from customer data to categorize companies into "**smaller**" and "**larger**"
- **Rate types do not directly correspond to company size, but are used as a proxy**
- Rate types where most customers had **above average KW load ranges** were categorized as "larger" and the rest were categorized as "smaller"

Categories

- **73 larger company** respondents (**14%**)
- **436 smaller company** respondents (**85%**)
- 4 respondents could not be categorized because the rate type was missing (**1%**)

Validation

Cadmus compared survey-reported facility conditioned space square footage to our rate-based categories:

- **Larger company** respondents' facilities averaged about 38,500 square feet
- **Smaller company** respondents' facilities averaged about 8,750 square feet

26

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26

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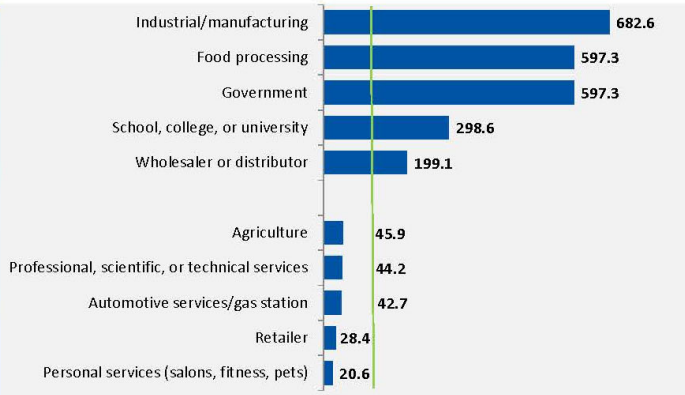
COMPANY SIZE BY INDUSTRY

Companies categorizes as **larger** were more likely to be **manufacturers, food processors, government, schools, and wholesalers or distributors**

Service-based businesses, retailers, and agriculture were mostly categorized as **smaller** companies



Index scores for industry participation (industry percentage of larger companies divided by percentage of smaller companies): scores over 100 (represented by the green line) indicate that the industry has above-average representation among larger companies, while scores under 100 indicate lower-than-average representation.

27

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27

AWARENESS AND PARTICIPATION BY COMPANY SIZE

PROGRAM AWARENESS

- Larger companies (**16%**) and smaller companies (**15%**) were equally likely to have **heard about Dominion Energy programs in the last year**
- Smaller companies were more likely to hear about programs from **Dominion Energy emails and newsletters** (**54%**) compared to larger companies (**18%**)
- More larger companies had some **familiarity with Dominion Energy programs** (**16%** *very* or *somewhat familiar*) compared to smaller companies (**8%**)

PROGRAM PARTICIPATION

- Larger companies were more likely to have **participated in a Dominion Energy program** in the past (**22%**) compared to smaller companies (**10%**)
- Larger companies were more likely to say they will **request an incentive from Dominion Energy in the next three years** (**77%** *very* or *somewhat likely*) compared to smaller companies (**65%**)
- Larger companies (**58%**) and smaller companies (**57%**) were equally likely to have **made upgrades in the past without receiving incentives**

28

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28


MOTIVATIONS AND CHALLENGES BY COMPANY SIZE
MOTIVATIONS
Smaller companies were more likely to say that lower costs for equipment (65%) and information about benefits to their company (42%) would make them more likely to prioritize energy efficiency when purchasing equipment compared to larger companies (53% and 28%, respectively)
Larger companies were more likely to have plans to install every type of equipment surveyed, except for water heating which smaller companies were more interested in (25% plan to upgrade in next five years compared to 18% of larger companies)
CHALLENGES
Smaller companies were more likely to agree that leasing space is a barrier to making improvements (36% strongly or somewhat agree) compared to larger companies (26%)
Smaller companies were more likely to say they have made all the improvements they can without substantial investment (20% strongly agree) compared to larger companies (9%)
Larger companies were less likely to say their organization usually takes less than a month to approve upgrades (32%) compared to smaller companies (48%)
29
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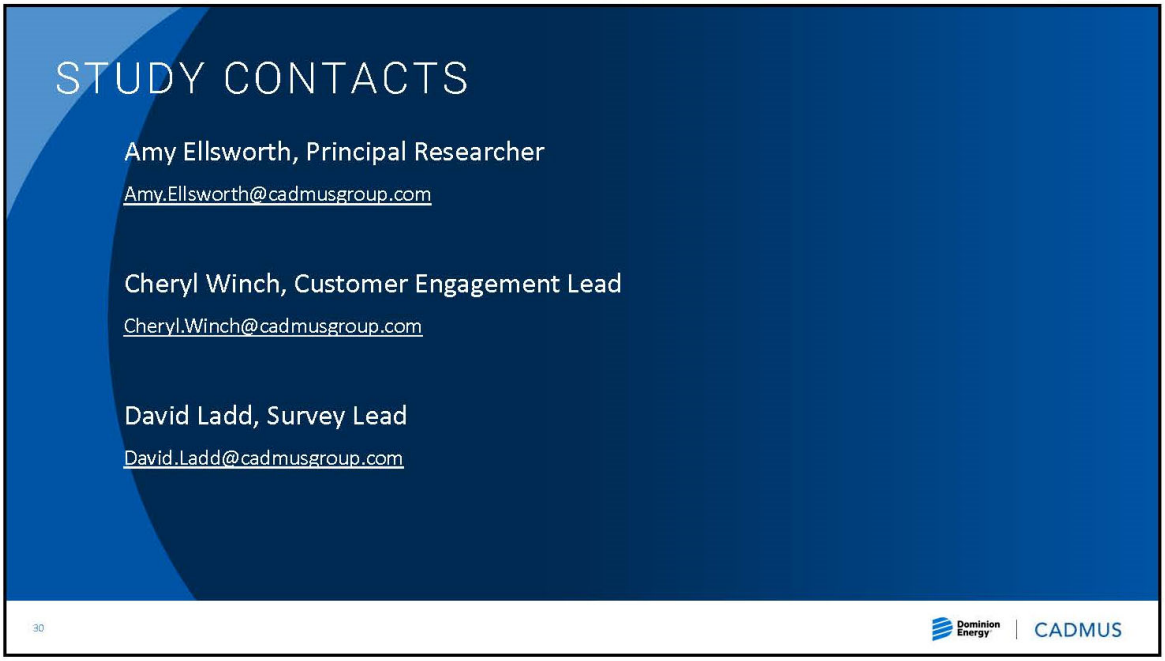
29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30
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30