

# **ANNUAL REPORT TO THE GOVERNOR AND GENERAL ASSEMBLY**



## **ENERGY CONSERVATION EFFORTS OF VIRGINIA'S INVESTOR-OWNED PUBLIC UTILITIES IN 2024**



**Submitted by the Virginia Department of Energy**

**December 13, 2024**

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**To: The Governor and the General Assembly**  
**From: Virginia Department of Energy**  
**Date: December 13, 2024**  
**RE: Energy Conservation Efforts of Investor-Owned Utilities**

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The Code of Virginia (§ 45.2-1712) requires each investor-owned public utility (IOU) that provides electricity service in the Commonwealth to prepare an annual report to the Virginia Department of Energy (Virginia Energy) delineating its efforts to conserve energy. In the report, each IOU is required to disclose its implementation of demand-side management (DSM) programs serving its customers, and its efforts to improve energy efficiency and conservation relating to its internal operations. These annual reports are to be submitted by November 1 of each year to the State Energy Office of Virginia Energy. The Division is required to compile the utilities' reports and submit the compilation to the Governor and the General Assembly.

For the year 2024, reports were received from Virginia Electric and Power Company (Dominion Energy, or Dominion), Appalachian Power Company (APCo), and Kentucky Utilities Company d/b/a Old Dominion Power Company (ODP) on or by November 1. Each report includes the respective IOU's energy conservation efforts during the past year. The reports also include how the IOUs implement their demand-side management (DSM) programs including energy efficiency (EE) and demand response (DR). An electronic copy of each utility's full report is attached.



**Dominion  
Energy<sup>®</sup>**

**Virginia Electric and Power Company**

**Annual Report to the  
Virginia Department of Energy**

**As Required by § 45.2-1712 of the Code of Virginia  
Annual Reporting by Investor-Owned Public Utilities**

**November 1, 2024**

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## INTRODUCTION

Pursuant to Virginia Code § 45.2-1712, Virginia Electric and Power Company (“Dominion Energy Virginia” or the “Company”) submits this Annual Report of Conservation Efforts (“Report”) to the Virginia Department of Energy.

Virginia Code § 45.2-1712, *Annual reporting by investor-owned public utilities*, provides that:

*Each investor-owned public utility providing electric service in the Commonwealth shall prepare an annual report disclosing its efforts to conserve energy, including (i) its implementation of customer demand-side management programs and (ii) efforts by the utility to improve efficiency and conserve energy in its internal operations pursuant to § 56-235.1. The utility shall submit each annual report to the Division by November 1 of each year, and the Division shall compile the reports of the utilities and submit the compilation to the Governor and the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.*

Virginia Code § 56-235.1, *Conservation of energy and capital resources*, provides that:

*It shall be the duty of the Commission to investigate from time to time the acts, practices, rates or charges of public utilities so as to determine whether such acts, practices, rates or charges are reasonably calculated to promote the maximum effective conservation and use of energy and capital resources used by public utilities in rendering utility service. Where the Commission finds that the public interest would be served, it may order any public utility to eliminate, alter or adopt a substitute for any act, practice, rate or charge which is not reasonably calculated to promote the maximum effective conservation and use of energy and capital resources used by public utilities in providing utility service and it may further provide for the dissemination of information to the public, either through the Commission staff or through a public utility, in order to promote public understanding and cooperation in achieving effective conservation of such resources; provided, however, that nothing in this section shall be construed to authorize the adoption of any rate or charge which is clearly not cost-based or which is in the nature of a penalty for otherwise permissible use of utility services. This section shall not apply to telephone companies.*

Energy conservation is essential to the Commonwealth’s future and continues to be one of the Company’s top priorities. The General Assembly, through the Grid Transformation and Security Act (“GTSA”) and the Virginia Clean Economy Act (“VCEA”), established energy efficiency proposed spending targets and incremental energy efficiency savings goals applicable to the Company, for each year 2022 through 2025, with the goal of reaching 5% energy efficiency savings (based on 2019 jurisdictional electricity sales) by 2025.

This Report covers the Company’s conservation efforts for the approximate time September 1, 2023 through August 31, 2024 and is divided into two sections. The first section focuses on the Company’s implementation of customer demand-side management (“DSM”) programs and includes a description of current DSM tariffs and programs, plans for future programs, and efforts at evaluating, measuring, and verifying the energy savings resulting from these programs.

The Report’s second section focuses on the Company’s efforts, as well as broader efforts throughout the Dominion Energy, Inc. organization (“Dominion Energy”), to improve energy efficiency and conservation in its internal operations. For example, this includes a description about how the Company conserves and uses energy efficiently in areas such as Facilities, Information Technology, Investment Recovery, and other Dominion Energy-wide initiatives. Although the requirement in Va. Code § 45.2-1712 is specific to the Company as an investor-owned utility operating in Virginia, the Company believes that it is also important to note more extensive programs where it participates alongside other Dominion Energy entities.

I.  
**CUSTOMER DEMAND-SIDE MANAGEMENT (DSM) PROGRAMS,  
ENERGY EFFICIENCY (EE), AND DEMAND RESPONSE (DR) PROGRAMS**

**DSM, EE, and DR Programs**

**Overview**

The Company generally defines DSM as all activities or programs undertaken to influence the amount and timing of electricity use. Demand-side resources are used to encourage more efficient use of existing resources and to potentially delay or eliminate the need for new supply-side infrastructure. In this Report, the Company will summarize its current efforts to implement DSM tariffs and programs. The Company's DSM programs are designed, among other purposes, to provide customers the opportunity to better manage their electricity usage.

The Company's DSM planning process has also been enhanced since the Company's 2021 Annual Report through the development of a DSM long-term plan. In the 2020 DSM Final Order (Case No. PUR-2020-00274), the SCC directed the Company to present a long-term plan for DSM sufficient to comply with the total energy savings targets in the VCEA and investment levels in the GTSA. The SCC required that the long-term plan should include: (i) proposed program savings and budgets for the five-year period beginning January 1, 2022, sufficient to comply with the total energy savings targets in the VCEA and investment levels in the GTSA; (ii) 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; and (iii) 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. The SCC also required that the strategic plan should reflect short-term, medium-term, and long-term recommendations for improvement of the Company's DSM Portfolio.

In consideration of VCEA targets and discussions with DSM stakeholders, the obtained an external industry-informed perspective to assist in developing a DSM long-term plan. Accordingly, in 2020, the Company issued an RFP for consulting, planning, and technical services in support of the Company's DSM portfolio. Cadmus was the successful bidder in this RFP process. Cadmus was charged with developing a long-term plan for DSM that could chart the Company's path over the next decade. Throughout the development of the long-term plan, Cadmus consulted with the Company, its DSM contractors, and numerous internal and external stakeholders for input and feedback.

The DSM long-term plan provides a path forward for the Company’s DSM program portfolio, with the end goal of setting forth an achievable strategy for meeting the VCEA energy efficiency targets. It provides a vision and pathways for making every practicable effort to achieve the legislative goals over short-, medium-, and long-term timeframes. The long-term plan addresses strategic vision; achievability of GTSA and VCEA energy efficiency targets; risks, challenges, and opportunities stemming from legislative and regulatory changes; sector profiles, program design recommendations, and implementation pathways aligned with targets and high-level timelines; approaches for adapting to an evolving customer market and advancements in technology; and high-level forecasts of energy and demand impacts, program costs, and cost-effectiveness.

In sum, the Company expects the DSM long-term plan to be instrumental in future iterations of the DSM planning process when feasible and practicable for the Company to act upon, which will be reflected in future filings. The SCC has also issued directives regarding the evaluation, measurement, and verification of the Company’s DSM programs, which will guide how energy and capacity savings influence planning projections.

**List of Programs**

Figure 1 provides a list of the Company’s DSM tariffs and programs that were active or approved by the State Corporation Commission of Virginia (the “Commission” or the “SCC”), since the Company’s 2023 Annual Report. The table thus includes the most recently approved programs (DSM Phase XII) that were filed with the Commission in December 2023. The Company anticipates filing its next phase of DSM programs in December 2024 with the intent to report its proposed DSM program portfolio in next year’s annual report. As noted in the DSM long-term plan, the Company is also working through efforts to streamline its DSM portfolio to enhance the overall customer experience, where feasible.

**Figure 1 – Dominion Energy Virginia Tariffs and Programs**

<b>Tariffs</b>	
Standby Generation	
<b>Active and Recently Approved DSM Programs</b>	
DSM Phase VIII Residential Smart Thermostat (EE & DR)	DSM Phase VIII Non-residential New Construction
DSM Phase VIII Electric Vehicle (Peak Shaving)	DSM Phase II Non-residential Distributed Generation
DSM Phase VIII Residential Electric Vehicle (EE and DR)	DSM Phase VIII Residential/Non-residential Multi-family



DSM Phase VIII Residential Energy Efficiency Kits	DSM Phase XII Non-residential New Construction Program (EE)
DSM Phase VIII Residential Home Retrofit	DSM Phase XII Residential Smart Thermostat Purchase (EE)
DSM Phase VIII Residential Manufactured Housing	DSM Phase VIII Small Business Improvement Enhanced
DSM Phase VIII Residential New Construction	DSM Phase IX Non-residential Agricultural
DSM Phase IX HB 2789 Solar Component	DSM Phase IX Non-residential Building Automation
DSM Phase IX Residential Income and Age Qualifying	DSM Phase IX Non-residential Building Optimization
DSM Phase IX Residential Water Savings (EE)	DSM Phase IX Non-residential Engagement
DSM Phase IX Residential Water Savings (DR)	DSM Phase IX Non-residential Enhanced Prescriptive
DSM Phase IX Residential Smart Home	DSM Phase X Non-residential Lighting Systems & Controls Program Extension
DSM Phase IX Residential Virtual Audit	DSM Phase X Non-residential Data Center and Server Rooms (EE)
DSM Phase X Small Business Behavioral (EE)	DSM Phase X Non-residential Hotel and Lodging (EE)
DSM Phase X Non-residential Health Care (EE)	DSM Phase XI Non-residential Custom Program (EE)
DSM Phase X Voltage Optimization (EE)	DSM Phase XI Residential Customer Engagement (EE)
DSM Phase XI Residential Peak Time Rebate (DR)	DSM Phase XI Residential Electric Vehicle Telematics (DR) Pilot
DSM Phase XI Residential EE Products Marketplace (EE)	DSM Phase XI Non-residential Income and Age Qualifying Bundle (EE)
DSM Phase XI Residential Income and Age Qualifying Bundle (EE)	Residential Retrofit Bundle (EE)
Non-residential Prescriptive Bundle (EE)	DSM Phase XII Residential New Construction Program (EE)
DSM Phase VIII Non-residential Midstream Energy Efficient Products	DSM Phase XII Residential Smart Thermostat Demand Response (DR)

### **Current DSM Tariffs**

The Company currently offers one DSM pricing tariff, the Standby Generation (“SG”) rate schedule, in Virginia. This tariff provides incentive payments for dispatchable load reductions that can be called on by the Company when capacity is needed.

The SG rate schedule provides a direct means of implementing load reduction during peak periods by transferring load normally served by the Company to a customer's standby generator. The customer receives a bill credit based on a contracted capacity level or average capacity generated during a billing month when SG is requested.

During a load reduction event, a customer receiving service under the SG rate schedule is required to transfer a contracted level of load to its dedicated on-site backup generator.

## **Phase XII DSM Programs**

### **Overview**

In December 2023, the Company filed with the SCC for approval of Phase XII of its DSM Portfolio in Case No. PUR-2023-00217. The DSM Phase XII is comprised of the four new Phase XII Programs: Non-Residential Residential New Construction, Residential New Construction, Residential Smart Thermostat Purchase (EE) and Residential Smart Thermostat Demand Response (DR). All programs with the exception of the Residential Smart Thermostat Demand Response (DR) are classified as energy efficiency programs under Va. Code § 56-576. On July 29, 2024, the SCC issued a final order approving all proposed programs in the proceeding.

### **Non-residential New Construction Program**

The Program would provide qualifying facility owners with incentives to install energy efficient measures in their new construction project.

### **Residential New Construction Program**

This Program would provide incentive to home builders for the construction of new homes that are ENERGY STAR certified by directly recruiting existing networks of homebuilders and Home Energy Rating System (HERS) Raters to build and inspect ENERGY STAR certified new homes.

### **Residential Smart Thermostat Purchase**

This Program would provide an incentive to residential customers to purchase a qualifying smart thermostat through the Company's online marketplace platform and brick and mortar participating retailers. The Program is open to several thermostat manufacturers, makes and models that meet or exceed the ENERGY STAR requirements and have communication technology.

### Residential Smart Thermostat (Demand Response)

The Residential Smart Thermostat Program is a peak demand response program through which demand response is called by the Company during times of peak system demand throughout the year and thermostats of participating customers would be adjusted to achieve a specified amount of load reduction while maintaining reasonable customer comfort through a gradual increase in home temperature and allowing customers to opt-out of specific events if they choose to do so.

### **Future DSM Programs**

As part of the Grid Transformation and Security Act passed in 2018, the Company continues to meet with stakeholders and a third-party moderator, hired by the Commission, to discuss and plan for new DSM programs. In addition, competitive Requests for Proposals (RFPs) are being conducted for the fulfillment of new programs to be filed with the SCC.

### **Evaluation, Measurement & Verification (“EM&V”)**

#### Overview

The Company is required to implement EM&V plans to quantify the level of energy and demand savings for approved DSM programs in Virginia and North Carolina. In its Virginia DSM filing in December 2023 for the Phase XII programs, the Company filed EM&V plans for all Phase XII programs for which the Company was requesting approval. The SCC approved these EM&V plans as part of its final order in the Phase XII proceeding in August of 2024.

#### EM&V Reporting

As required by its regulators, the Company also provides annual EM&V reports for its programs that include: (i) the actual EM&V data; (ii) the cumulative results for each DSM program in comparison to forecasted annual projections; and (iii) any recommendations or observations following the analysis of the EM&V data. These reports are filed annually with the SCC and provide information through the prior calendar year. DNV, an independent third-party vendor, continues to be responsible for developing, executing, and reporting the EM&V results for the Company’s currently approved DSM programs.

The Company filed its 2024 EM&V report, of calendar 2023 program results on June 12, 2024 in Case No. PUR-2022-00210.

## II. EFFORTS TO IMPROVE EFFICIENCY AND CONSERVE ENERGY

The following section discusses the Company's overall efforts related to its focus on environmental stewardship, including initiatives to conserve energy through its internal operations pursuant to Va. Code § 56-235.1. The Company's efficiency and conservation commitment is multi-faceted. The Company views environmental responsibility as not only controlling emissions, but also conserving resources, such as energy and water. Examples of these projects and other environmentally focused projects are described below.

### **Consumer Education Programs**

#### **Overview**

The Company's consumer education initiatives include providing demand and energy usage information, educational opportunities, and online customer support options to assist customers in managing their energy consumption. The Company's website has a section dedicated to energy conservation. This section contains helpful information for both residential and non-residential customers, including information about the Company's currently active DSM programs. Through consumer education, the Company is working to encourage the adoption of energy-efficient technologies in residences and businesses in Virginia. Examples of how the Company increases customer awareness include:

#### **Twitter, Facebook, Instagram, LinkedIn, and YouTube**

The Company uses the social media channels of Twitter, Facebook, Instagram, LinkedIn, and YouTube to provide real-time updates on energy-related topics, promote Company messages, and provide two-way communication with customers. The Company's X account is available online at <<https://twitter.com/DominionEnergy>>. The Company's Facebook account is available online at <<https://www.facebook.com/dominionenergy/>>. The Company's Instagram account is available online at <<https://www.instagram.com/dominionenergy/>>. The Company's LinkedIn account is available at <<https://www.linkedin.com/company/dominionenergy/>>. The Company's YouTube account is available online at < <https://youtube.com/dominionenergy> >.

#### **Dominion Energy Virginia Advertising**

The Company advertises through television, digital, print, radio, and outdoor mediums to address a variety of topics including energy conservation and the use of renewable energy sources like solar and wind to help reduce carbon emissions.

### News Releases

The Company prepares news releases and reports on the latest developments regarding its DSM initiatives and provides updates on Company offerings and recommendations for saving energy as new information becomes available. For example, on November 14, 2023, the Company issued a press release on its bill payment assistance programs and energy-saving tips to help customers save energy and lower bills when heating their homes in the winter. Current and archived news releases can be viewed at <<https://news.dominionenergy.com/news>>.

### Lower My Bill Guide

The Lower My Bill Guide on the Company's website offers customers ways to take control of their energy costs and monthly bills. The guide provides tools to save energy through energy saving tips, an EPA Carbon Calculator and Fuel Economy Car Comparison Tool. The guide also teaches customers how to monitor their electricity with resources to help customers learn to read their meters and to stay updated about rate changes. Finally, the guide teaches customers to take control of their bill by exploring different ways to pay their bills, signing up for eBill, information regarding seasonal budget billing and a guide to understanding the details of their bills. The Lower My Bill Guide is available at < <https://www.dominionenergy.com/virginia/save-energy/lower-my-bill-guide> >.

### Community Outreach

Dominion Energy remains steadfast in its commitment to communities within its service area. Through programs like EnergyShare, the company's year-round energy assistance program, Dominion Energy has helped those experiencing financial hardship with the cost to heat and cool their homes. Since 1982, more than 906,200 individuals and families have received bill payment assistance.

Further strengthening its commitment to the community, Dominion Energy expanded EnergyShare in September 2015 introducing its weatherization component. Through the expansion, a link was made between energy bill payment assistance and no-cost energy efficiency upgrades for the first time, addressing not only the immediate financial hardship faced by the customer, but also providing them with sustainable cost savings on future energy bills. Since then, more than 23,700 homes have been made more energy efficient through the program. Also included in the expansion was additional financial resources for bill payment assistance and outreach designated specifically for military veterans and individuals living with disabilities participating in voucher programs administered by the Department of Veteran Services (DVS) and the Centers for Independent Living (CIL). More than 11,500 military veterans and 10,900

individuals living with disabilities have received bill payment assistance through that public-private partnership.

Since its inception, EnergyShare has provided support to more than 929,900 individuals and families across Virginia. In 2018, Dominion Energy reinforced its community commitment by pledging \$13 million annually to EnergyShare through 2028.

#### **Customer Paperless Billing Program**

Customers are reducing paper usage by choosing to participate in the Company's paperless billing program, eBill. 55% of Virginia and North Carolina eligible electric customers opt to receive their bill notification via email each month either through the Company's website or through their financial institution. Customers can create online accounts via [dominionenergy.com](http://dominionenergy.com) to view and pay bills electronically and enroll in programs such as paperless billing, energy conservation, Renewable Energy Certificates (REF Select), 100% renewable generation (Rider TRG), and the Dominion Energy Green Power<sup>®</sup> Program. In 2020, customers performed approximately 21 million transactions through their online accounts. Further, many customers want to do business electronically, and the Company is providing the channels and options to do so through Internet, Mobile, and Interactive Voice Response Unit.

#### **Employee Education Programs**

##### **"domnet"**

The Company provides daily internal news and announcements to all its employees through its intranet site called "domnet," where energy efficiency and conservation topics are spotlighted on a routine basis. Employees are provided information concerning how to conserve energy at home and work and on various other environmental issues. For example, a December 2023 article highlighted an event the Company held to educate employees on electric vehicles.

#### **Company Reporting on Conservation and Sustainability**

##### **Annual Sustainability and Corporate Responsibility Report**

Dominion Energy publishes an annual "Sustainability & Corporate Responsibility (SCR) Report," which provides the latest information about the Company's environmental, social, and governance performance. On September 24, 2024, the Company issued its 2023 SCR Report. This report primarily focuses on performance for calendar year 2023 unless otherwise specified. All environmental and other related metrics are inclusive of assets owned in 2023 — specifically, 2023 metrics include assets divested in 2024 as well as those under contract to be divested in

connection with our strategic business review completed in March 2024. Some content referenced in this disclosure may include forward-looking information. For a full discussion of forward-looking information, see our Forward-Looking Statements. The Report is available online at <<https://sustainability.dominionenergy.com>>.

The 2023 SCR Report covers a variety of topics, including reliable, affordable, and increasingly clean energy, as well as safety, governance, contributions to communities, benefits provided to employees, and more. Selected highlights include:

- Set a new safety record by reducing the number of employee injuries resulting in days away from work or restricted duty;
- Maintained the superior reliability our customers count on, ensuring that electricity was available 99.98% of the time, excluding major storms;
- Kept our rates well below both the national and regional averages;
- Continued to reduce both carbon emissions from our electric generation fleet, which we have cut by 53% from 2005 through 2023, and methane emissions from our natural gas businesses, which we have cut by 50% from 2010 through 2023;
- Continued to move forward on our CVOW commercial project — the largest offshore wind project under construction in the United States;
- Expanded our solar portfolio, which we have grown from zero megawatts a little over a decade ago to one of the largest among investor-owned utilities in the country;
- Proposed piloting new forms of battery storage to make the most of renewable resources; and
- Continued to upgrade the grid to make it smarter, stronger, and greener.

Dominion Energy's 2023 SCR Report highlights significant investments in clean energy, including its progress toward its Net Zero commitment. The company's Net Zero commitment includes carbon and methane emissions within our direct control (known as Scope 1 emissions), as well as Scope 2 and material categories of Scope 3 emissions, including: electricity purchased to power the grid, fossil fuel purchased for our power stations and gas distribution systems, and consumption of gas sold to our end-use customers.

### CDP Climate Change Questionnaire

Dominion Energy submitted responses to the CDP's Climate Change Questionnaire in 2023 for the 2022 reporting year. The CDP was formerly named the "Carbon Disclosure Project," and it is an independent, not-for-profit organization that collects information from large corporations about their greenhouse gas emissions, climate change strategies, and other sustainability-related information. Information submitted to CDP is available to investors and the public. The purpose of this questionnaire is to provide insight to companies' awareness of potential environmental risks and vulnerabilities, progress in assessing specific impacts, and implementation of adaption measures and strategies to manage risks.

The 2023 questionnaire focuses on how climate change risks and opportunities are identified, assessed, and managed. The climate CDP provides details regarding impacts of climate-related issues on strategy, financial planning and businesses and how climate-related issues are integrated into Dominion Energy's business objectives. This was the fifth year the Company underwent third-party verification of the Greenhouse Gas ("GHG") emissions data for assets reported to the CDP and the second year that Dominion Energy underwent Reasonable Assurance verification of its Scope 1 and Scope 2 emissions from a third-party auditor. Reasonable Assurance verification requires sufficient detail so the verifier can form an opinion around completeness and accuracy. This includes more extensive data reviews, site visits, and interviews with its power station employees. Dominion Energy also received limited assurance verification on its Scope 3 emissions.

Among other things, the CDP's 2023 Climate Change Questionnaire discloses and details:

- Dominion Energy's progress made towards climate-related targets, included in its Net Zero commitment, which was expanded in 2022 to include Scope 2 and material Scope 3 categories.
- Dominion Energy reports on emission reduction initiatives, including CO<sub>2</sub>e saving estimates which include recent projects to construct and maintain zero-carbon generation sources.
- Identified climate-related risks and opportunities that relate to the Company's businesses, such as emerging regulations and technologies. Specifically, Dominion Energy provides details of its investments in low-carbon research initiatives, including its partnership with the Electric Power Research Institute and the Gas Technology Institute. Examples of projects discussed in this section include energy storage, the electric school bus program, RNG, electric vehicles, microgrids, and electrification.



### Water Conservation Questionnaire

Since 2011, Dominion Energy has participated in the CDP's annual "Water Security Questionnaire" to share data and information with investors and the public about the Company's overall water use and risk management practices.

The 2023 CDP Water Security Questionnaire focuses on how water-related risks and opportunities are identified, assessed, and managed. Some of the efforts the Company has undertaken to reduce, reuse, or recycle water include:

- Clover Power Station is reusing treated wastewater in the air emissions treatment system;
- Virginia City Hybrid Energy Center, using an air-cooled condenser, is reducing use of water for cooling by at least 90%, and reusing process water to condition the ash for transport to the onsite captive landfill and as scrubber spray water;
- Warren County, Brunswick County, and Greenville power stations, which became operational 2014, 2016 and 2018 respectively, are reducing water use by using similar air-cooled condenser technology; and
- Bear Garden Power Station in Buckingham County, Virginia is changing the operation of its cooling tower to prevent taking water from the James River, conserving 50 million gallons per year.

### Transportation Decarbonization

#### Electric Vehicles

The Company currently has 63 fully electric, 67 plug-in hybrid-electric, and 214 hybrid-electric vehicles in its service fleet in Virginia and North Carolina. In addition, the Company continues to invest in idle mitigation technology, employed in vehicles such as service trucks where the aerial lifts are powered by hybrid electric technology. Other green fleet initiatives include business units selecting electric forklifts where applicable, the introduction of electric UTV pilot programs, and the use of renewable natural gas in converted vehicles. Dominion Energy also uses biodiesel fuel at 36 locations in Virginia and North Carolina.

Dominion Energy is continuing the installation of electric vehicle charging stations at its offices to provide charging for fleet vehicles and workplace charging for employees' personal electric vehicles. Dominion Energy also has an incentive program for employees who purchase a new or used electric vehicle and offers workplace charging at no cost for enrolled employees' personal EVs / PHEVs.

In 2021, Dominion Energy announced an ambitious carbon-reduction vehicle initiative to convert a significant portion of its vehicles to electric power and clean-burning alternative fuels by 2030.

- 75% of passenger vehicles, including sedans and SUVs, will be converted to electric power by 2030.
- 50% of work vehicles – from full-size pickups and bucket trucks to forklifts and ATVs – will be converted by 2030 to plug-ins, battery electric vehicles, or vehicles fueled by cleaner-burning alternatives, such as hydrogen, renewable natural gas, and compressed natural gas. In the transition, the Company will make use of trucks equipped with emissions-reducing ePTO (Electric Power Takeoff) systems.
- 100% of all new vehicles – from sedans to heavy-duty vehicles – purchased will be powered either by electricity or alternative fuels, after 2030.

### **Environmental and Conservation Awards**

For a full list of recent awards, please visit our Awards and Recognition website at <[https://careers.dominionenergy.com/content/Awards/?locale=en\\_US](https://careers.dominionenergy.com/content/Awards/?locale=en_US)>. Examples of environmental and conservation awards the company has received during the reporting period are highlighted below.

#### **U.S. Environmental Protection Agency & Department of Energy**

##### *“Virginia ENERGY STAR® Award Winner”*

In 2023, Dominion Energy Virginia was recognized by the EPA for assisting with the sale of 3.6 million ENERGY STAR® certified LED bulbs and over 15,000 residential customer rebates on ENERGY STAR® certified appliances. Dominion Energy is recognized for its efforts in tackling the climate crisis and supporting the clean energy transition.

#### **Sustainable Supply Chain Alliance (“SSCA”)**

##### *“SSCA Member Engagement Award”*

In 2023, Dominion Energy received the SSCA Member Engagement Award. This award highlights the utility that goes above and beyond to contribute to the SSCA community via innovation, collaboration, and best practice sharing.

## Newsweek

### *“America’s Most Responsible Companies”*

In 2024, Dominion Energy ranked as one of “America’s Most Responsible Companies” based on environmental, social, and corporate governance indicators.

## POWER Magazine

### *“POWER’s Water Award”*

Dominion Energy won the 2023 POWER Water Award for the Reverse Osmosis (RO) Concentrate Recovery System at Surry Power Station in Virginia. The system reduces the annual water withdrawal from the Upper Potomac Aquifer by about 13.9 million gallons annually.

## **Workplace Sustainability**

The Company applies the principles of sustainability across the board — including in Dominion Energy’s places of work. This ensures its employees experience and cultivate a sustainable mindset throughout their workday – even when doing something as simple as pouring a cup of coffee.

## Waste Reduction Programs

- Recycling programs for typical office waste (e.g., paper, cardboard, plastic, aluminum) are available to employees at most of Dominion Energy’s corporate offices. In addition, the Company continues to implement centralized waste collection at additional facilities.
- Dominion Energy’s Corporate Composting program diverted over 50 tons of food and other organic waste away from landfills in 2023.

## Building Construction & Management

- Dominion Energy strives for Leadership in Energy & Environmental Design (LEED) Silver-level certification in new office construction, not only to encourage environmental stewardship, but also to provide an optimized work environment for employees. LEED building practices support healthier, more productive workplaces, reduce stress on the environment by encouraging energy and resource-efficient buildings, and produce savings from increased building value and decreased utility costs.
- In renovations, and in building operation, Dominion Energy leverages LEED best practices, including low-flow water fixtures, water-efficient landscaping, and LED lighting. In addition, its construction practices include:

- using recycled materials in new office furniture systems, including carpet manufactured from 90% recycled materials;
- recycling demolition material; and
- installing native vegetation in support of pollination and reduced irrigation.
- Dominion Energy continues to expand new property management innovations to reduce energy usage, pilot new technologies, and seek efficiency in operations. Examples include:
  - Continued conversion to LED light fixtures across the Dominion Energy facilities footprint nation-wide;
  - Installing electric chargers for forklifts in storerooms at facilities across the company footprint
  - Piloting the SITES sustainability program at a site work intensive construction project the Castlewood Road facility in Richmond, VA
  - Constructing a new, rooftop solar array on the parking garage at its Tredegar Campus in Richmond, Virginia.
  - Expansion of autonomous mowing programs at office facilities in South Carolina;

**LEED-Certified Buildings: Complete & In-Progress:**

Site	LEED Rating	City/State	Construction Complete
Magnolia – Systems Operations Center	<b>Silver</b>	Henrico, VA	2016
Hampton Office	<b>Silver</b>	Hampton, VA	2020
Greensville Power Station Admin Building	<b>Silver</b>	Greensville, VA	2020
Brunswick Power Station Admin Building	<b>Certified</b>	Brunswick, VA	2020
600 Canal Place	<b>Gold</b>	Richmond, VA	2020
Petersburg-Dinwiddie District Office	<b>Silver</b>	Dinwiddie, VA	2020
Electric Transmission Crew Building	<b>Silver</b>	Dinwiddie, VA	2021
Electric Transmission Crew Building	<b>Silver</b>	Warrenton, VA	2021
Gas Operations Building	<b>Silver</b>	McBee, SC	2021
Corporate Hangar	<b>Silver</b>	Richmond, VA	2022
DESC Fleet Building	<b>Silver</b>	Cayce, SC	2022
Technical Support Building and High Voltage Lab	<b>Silver</b>	Dinwiddie, VA	2024
Electric Transmission Crew Building	<b>Silver</b>	Possum Point, VA	2025

Electric Transmission Crew Building	<b>Silver</b>	Loudoun County, VA	2026
South Boston District Office	<b>Silver</b>	South Boston, VA	2026

### **Facilities Management’s Additional Green Efforts**

The Company’s internal Facilities Management group supports over 138 office buildings across its operating territory, in addition to over 800 substation control houses and microwave towers, vehicle fueling and electric vehicle charging infrastructure, and many other Company properties. The Company continually works to improve efficiency and conserve energy in its internal operations, including:

#### **Equipment & Maintenance**

- Performing preventative maintenance programs to maintain equipment in peak operating condition, which enhances the life of the equipment and delays replacements;
- Leveraging paperless work order processes for preventative maintenance and service tickets;
- Upgrading efficiency gas-fired unit heaters in place of steam fan coil units;
- Installing efficient heat pumps in place of existing heating and cooling systems when warranted;
- Using variable speed drives on large air handling units to allow fan speed control as needed, which reduces the starting load of the motor;
- Upgrading high efficiency hot-water boilers in place of steam boilers;
- Installing high efficiency chillers, which can eliminate the need for heat exchangers, to replace existing low efficiency chillers;
- Using building automation schedules (see Building Automation section, below), occupancy/vacancy sensors and other efficiency automation integrations;
- Reducing generator emissions by replacing many diesel generators with newer, more efficient models or natural gas generators; and
- Utilizing recycling containers for large projects to divert material from landfills while also recovering financial credits on assets.

#### **Lighting, Roofing, & Windows**

- Modifying existing lamps to more efficient lighting fixtures, including the installation of T-8 fluorescent fixtures, T-5 high-bay fixtures, and LEDs;

- Opening floor plans to maximize the natural light in building interiors, reducing the number and wattage of lighting fixtures needed;
- Installing solar film on windows to decrease heat infiltration and to increase the efficiency of air-conditioning operations; and
- Installing reflective membranes or other efficient systems during roof repairs and replacements.

### Restrooms & Cleaning

- Using motion sensors in restrooms with touchless flush and hand washing fixtures to minimize water usage, and installing foam soap dispensers in restrooms to reduce use of soap;
- Using hands-free automated paper towel dispensers, which are set to distribute the smallest effective amount of paper to reduce trash, and composting those paper towels in facilities with composting programs;
- Utilization of electric-powered garage sweepers in place of gas or diesel powered; and
- Utilizing LEED-compliant “Green” cleaning products and plant-based lubricants in place of harsh chemicals and aerosols.

### Refrigerant Management

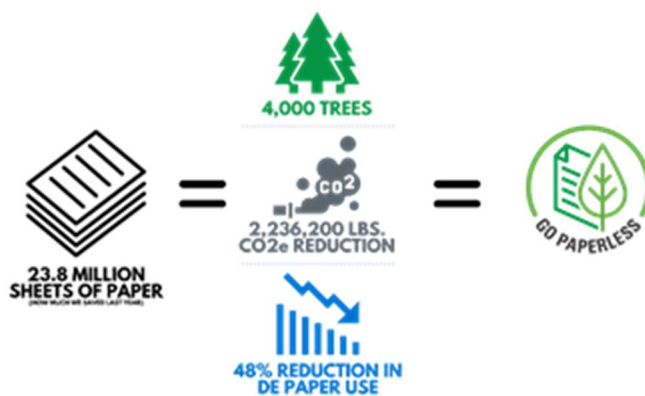
- Facilities Management has a robust system for tracking and managing the Company’s refrigerant systems. First and foremost, each piece of equipment is on a scheduled preventative maintenance plan, where it is inspected and tested regularly to identify possible leaks and repair damaged systems immediately.
- In addition to ensuring none of the Company’s systems use CFCs (damaging both to the stratospheric ozone layer and extremely potent as a greenhouse gas), the Company has continued replacing its R-22 refrigerant systems with R-410A systems. This is completed for DE West and DEV Substations Control Enclosures.

### Building Automation

Many of the Company’s office buildings leverage Building Automation Systems (BAS), a network of computerized control panels that are programmed to control the heating, ventilation, and air conditioning (HVAC) systems in a building. A BAS can also control the lighting system and monitor other electric systems, like emergency generators, battery backup systems, and building power. These systems help operate the offices more efficiently, saving water and energy.

## Employee & Community Engagement

- In September 2022, Dominion Energy launched the Sustainability Exchange Network, a new employee education and engagement platform focused on sustainability. The platform, which is featured prominently on its intranet site, supports employee education and collaboration on key focus areas for the Company. The program expanded in March 2023 to include the following focus areas: Coastal Virginia Offshore Wind, Dominion Energy Solutions, Supply Chain Sustainability, Demand-Side Management and Energy Efficiency programs (DEV and DESC), Gas Sustainability, Workplace Sustainability, Electric Vehicles, Net Zero, Habitat & Conservation, and Grid Transformation. In 2023, each focus area held one Lunch & Learn session for employees, and recordings of each were made available for on-demand delivery. The program was also promoted at the Company’s Innovation Expo events in October and November 2023.
- The Go Paperless campaign educates, promotes and makes available tools and process redesign to continue to reduce the use of paper at Dominion Energy in support of environmental, sustainability and cost containment goals and the IT strategic goal of making technology more accessible to colleagues. Dominion Energy’s Go Paperless campaign is in large part a positive outcome of remote work during the pandemic. The compelling event for the campaign that was launched at the Emerging Tech open house in May 2021 was to build on the momentum of pandemic remote work with a call to action to advocate to “think before you print.” Research uncovered that employees used almost 24 million fewer sheets of printer paper in the year that over a third of employees were not in the office.



In recent years, IT has expanded focus on this campaign by automating paper-based processes using mobile apps for data collection in the field and software bots to digitize workflows.

Workplace benefits of the Go Paperless campaign include:

- Reduced manual data entry
- Faster work with fewer errors
- Visibility into all business processes
- Automatic audit preparation
- Remote work further facilitated
- Improved customer and employee experience
- Opportunities for automation of digital applications

### Green Information Technology

The Company's Information Technology (IT) organization continues working toward a more environmentally friendly computing environment. IT continually strives to gain efficiencies and cost savings while reducing environmental impacts. All new desktops, laptops, monitors, and printers ordered within the Company's fleet are Energy Star compliant or certified. Additionally, the Company's primary data centers have undergone significant redesigns. These changes eliminated areas above ambient temperatures created by the Company's larger data centers and increased the data centers' power and cooling efficiencies. Ambient temperature in the main computing rooms was raised to 77 degrees. This resulted in approximately a 22% decrease in the electricity required to cool the rooms. Data center cooling efficiency has increased by methodically replacing older less efficient chiller units.

IT continues reducing the number of physical machines in the Company's server farm, making the farm more energy efficient. By consolidating forty servers to one using virtualization software, approximately 93% of the Company's server farm is now virtual. Over 97% of new server builds are virtual. IT also adopted a physical configuration called a blade server which is 30% to 40% more energy-efficient than the older, rack-mounted servers.

In 2019, Dominion Energy moved its data center to its new building at 600 Canal Place, where it is using new efficient computer cabinets along with consolidation and virtualization. With this change, Dominion Energy reduced power consumption by 40kva, representing a 12% reduction. Computer storage acquisitions now consider power and cooling to ensure that the Company uses the smallest amount of power and cooling for the storage requirements for both Storage Area Network and Network Attached Storage. These practices have resulted in the Company's maintaining the same power consumption for storage while increasing the overall amount of storage approximately 35% per year due to business requirements. The Company has added software for data de-duplication on the storage to further reduce the amount of storage required by 30-35%.



In 2022, Dominion Energy replaced the data center UPSs at its 5000 Dominion Blvd location, which are 10% more efficient than the old ones.

Additionally, among other initiatives, Dominion Energy's IT has:

- Completed disk array consolidation effort reducing arrays by 60% (2024)
- Upgraded the lighting to LED in our 5000 Dominion BLVD Datacenter location (2024)
- Completed a network switch upgrade and consolidation reducing switch power consumption by 75%.
- Changed to a new backup appliance that uses larger disks but still maintains compression to further reduce power requirements (2024);
- Begun methodically replacing spinning disk technology with flash-based drive technology to reduce power load for the storage farm by approximately 80%;
- Secured a disposal vendor with a "no landfill" policy, reselling almost all the Company's disposed assets for continued use while recycling all others in an environmentally responsible manner.

#### Investment Recovery

Dominion Energy Shared Services Asset Investment Recovery has a sustainability charter to provide disposition of Company assets. The disposition is completed in a way that both maximizes return on investment and minimizes environmental impact. Such assets include precious metal, copper, brass, aluminum, steel, and batteries. These assets are processed and recycled, which helps the environment while returning revenue back to the Company.

From September 1, 2023, to December 31, 2023, Dominion Energy Virginia, Dominion Energy Generation, Dominion Energy Ohio, Dominion Energy Privatization, and Dominion Energy's Corporate Offices recycled approximately:

- 2 million pounds of scrap Aluminum and Copper
- 61,000 pounds of scrap Brass, Tin, and Lead
- 181,000 pounds of Glass and Porcelain
- 7.3 million pounds of scrap Iron and Steel
- 1,600 barrels (55g) of Crude Oil
- 693,000 gallons of used Transformer Oil
- 8,000 each of scrap Transformers
- 235,000 pounds of scrap CT and PT Transformers

By January 1, 2024, Dominion Energy Environmental and Sustainability began managing the disposition of Company assets. The list of assets remains the same. Dominion Energy Virginia, Dominion Energy Generation, Dominion Energy Ohio, Dominion Energy Privatization, and Dominion Energy's Corporate Offices recycled approximately:

- 2.5 million pounds of scrap Aluminum and Copper
- 429,000 pounds of scrap Brass, Tin, and Lead
- 6.6 million pounds of scrap/Iron and Steel
- 2.7 million pounds of used Transformer Oil
- 5,000 each of scrap Transformers
- 187,000 pounds of scrap CT and PT Transformers

## **Conclusion**

This Report provides an overview of the current energy efficiency and conservation plans and programs available to the Company's internal and external stakeholders, including its participation in such widespread efforts across the entire Dominion Energy footprint. The Company continues to evaluate information as it becomes available regarding DSM program opportunities and to participate in the stakeholder process that supports these efforts. The Company embraces the Commonwealth's goals regarding energy efficiency and conservation and will continue to evaluate and implement such programs and sustainability initiatives to build a cleaner, more energy efficient future for its customers, employees, communities, and the world.



Appalachian Power  
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Charleston WV 25311  
AppalachianPower.com

October 29, 2024

Mr. Glenn Davis, Agency Director  
Virginia Department of Energy  
Washington Building, 8<sup>th</sup> Floor  
1100 Bank Street  
Richmond, VA 23219

**Re: 2024 Annual Demand Side Management Report**

Dear Mr. Davis:

Pursuant to Va. Code §§ 56-235.1 and 45.2-1712, please find enclosed Appalachian Power Company's 2024 Demand Side Management report to the Virginia Department of Energy.

If you have any questions or concerns regarding the report, please contact me at [tcstafford@aep.com](mailto:tcstafford@aep.com).

Regards,

*/s/ Tammy C. Stafford*

Tammy C. Stafford  
Manager, EE & Consumer Programs

Enclosure

cc: Bettina Bergoo  
Larry Corkey  
Rabita Bane  
William K. Castle

Appalachian Power Company (APCo or Company) remains committed to cost-effective demand-side management (DSM) programs, including energy efficiency (EE) and demand response (DR) initiatives that help customers use electricity in an informed and efficient manner. The effects of these efforts, both current and potential, are reflected in both the Company's Integrated Resource Plan (IRP), which was filed with the Virginia State Corporation Commission (SCC) on April 29, 2022, and 2023 Renewable Portfolio Standard Plan, submitted March 15, 2023.

To delay the need to procure supply resources, the Company seeks to limit the growth in the amount of power consumed at the time of peak electricity consumption on the system. This can be accomplished in several ways: including through DR tariffs, direct load control programs, time-differentiated rates, and retail EE programs.

A description of the previous, ongoing, and expected demand-side resource activity for APCo follows.

### **APCo Virginia DSM Regulatory Activities**

#### **Case No. PUE-2014-00026**

On March 31, 2014, Appalachian Power filed for approval of two DSM programs, the Residential Low Income and Residential Direct Load Control programs. In November 2014, the SCC approved these programs for a three-year period. On July 7, 2017, Appalachian Power filed to extend these programs in case PUR-2017-00094 and was granted approval by the SCC to continue through December 31, 2020.

RESIDENTIAL LOW INCOME PROGRAM was designed to provide home energy services to APCo's Virginia customers with limited income to assist them in reducing their electric energy use and to manage their utility costs. This program, which was launched in early 2015, helped facilitate the implementation of electric energy-saving measures in residential low-income households. These services were provided free of charge to qualifying participants. APCo utilized existing weatherization agencies in its service territory to implement this program. Through December 2020, 1,365 customers had participated in the program. Starting in 2021, this program was replaced by the Residential Low Income Single Family Program that was approved in Case No. PUR-2019-00122.

RESIDENTIAL DIRECT LOAD CONTROL PROGRAM This program has been discontinued and installed load control switches have been removed.

#### **Case No. PUE 2014-00039**

On October 24, 2014, Appalachian Power filed for approval of six new programs. Five of these programs, which are summarized below, were granted approval by the SCC for a period of three years.

HOME PERFORMANCE PROGRAM offered financial incentives for measures implemented during and after the energy audit within a specified time period, that offset the costs of the measures

and the audit fee. Additionally, financial incentives were available for measures installed in new construction homes that exceeded minimum energy efficiency standards. These standards were determined by the company using current standards for construction. Through the end of 2018, 13,249 customers had participated in the program. This program ended on December 31, 2018.

RESIDENTIAL APPLIANCE RECYCLING PROGRAM was designed to produce long-term electric energy savings in the residential sector by permanently removing operable second refrigerators and freezers from the power grid and recycling them in an environmentally safe manner. Through the end of 2018, 3,394 appliances were recycled. The program ended on December 31, 2018.

MANUFACTURED HOUSING ENERGY STAR PROGRAM incentivized builders and dealers of manufactured homes to manufacture and sell new homes that met ENERGY STAR<sup>®</sup> efficiency standards. Through the end of 2018, 217 homes had participated in the program. The program ended on December 31, 2018.

RESIDENTIAL EFFICIENT PRODUCTS generated energy savings for consumers through the promotion of high efficiency lighting and appliances. Through the end of 2018, 733,579 energy-efficient bulbs and 2,934 appliances were purchased. The program ended on December 31, 2018.

COMMERICAL & INDUSTRIAL PRESCRIPTIVE PROGRAM offered financial incentives that were tailored to the specific results of the energy-saving technologies implemented. Through the end of 2018, 736 projects were completed. The program ended on December 31, 2018.

#### **Case No. PUR-2017-00126**

On September 29, 2017, Appalachian Power filed for approval of six new programs and for the extension of the Residential Appliance Recycling Program and Residential Efficient Products Program. Five of these programs, which are summarized below, were granted approval by the SCC for a period of three years. The SCC also granted approval for a one-year extension for the Residential Appliance Recycling Program. These programs were launched in early 2019. The Company subsequently withdrew its request to extend the Residential Efficient Products Program.

C&I LIGHTING PROGRAM was designed to generate energy savings for C&I customers through the promotion of high efficiency lighting upgrades. For qualifying lighting equipment, customers were eligible for incentives to cover a portion of the cost of installing energy efficient lighting technology. Through December 31, 2021, 463 energy efficiency projects had been completed. This program ended December 31, 2021.

C&I STANDARD PROGRAM was designed to generate energy savings for C&I customers through the promotion of high efficiency non-lighting measures. In comments received during the EM&V process for the C&I Prescriptive Program, participants stated that they were interested in additional energy efficient equipment for which incentives were not previously offered. Incentives were available on energy efficiency measures such as variable frequency drives (VFDs), efficient kitchen equipment, efficient HVAC units, and efficiency

improvements related to industrial processes. These and other non-lighting measures were incorporated into this new program. Through December 31, 2021, 81 energy efficiency projects had been completed. This program ended December 31, 2021.

SMALL BUSINESS DIRECT INSTALL PROGRAM offered on-site energy assessments, direct install of certain energy efficiency measures, and financial incentives for other cost-effective measures to capture deeper energy savings. All assessments and measure installations were performed by trade allies participating in the program or the Company's implementation contractor. A customized Energy Report was provided to each program participant that highlighted recommended energy efficiency improvements as well as the return on investment of those measures. The program targeted the harder-to-reach small business customers with a peak demand of 200 kW or less.

BRING YOUR OWN THERMOSTAT PROGRAM provided residential customers the opportunity to enroll a qualifying Wi-Fi-enabled thermostat in a demand response program. Customers with already installed qualifying Wi-Fi-enabled thermostats, as well as customers purchasing new qualifying thermostats, were eligible to participate. During a load management event, the Company either cycled the customer's HVAC equipment or raised the set point of the thermostat. The Company had 5,588 devices enrolled in the program at the end of 2021.

HOME PERFORMANCE PROGRAM focused on helping participants through what can be their long-term journey to achieving energy efficiency. The Home Performance Program engaged the participant over time, at his or her own pace, to lower energy costs and improve the customer experience. The Home Performance Program offered online assessments, in-home assessments, virtual assessments, and rebates for certain larger energy efficiency upgrades. Through December 2021, 2,961 assessments and 208 rebate applications had been completed. This program ended December 31, 2021.

RESIDENTIAL APPLIANCE RECYCLING PROGRAM was designed to help customers reduce their energy consumption by removing old, but still operational, refrigerators and freezers from their homes for recycling. Program launch was delayed as the original implementation vendor abruptly went into receivership in November 2015. The Company sought an alternative qualified vendor in an effort to launch this program as quickly as possible and executed a contract with an implementation vendor in April 2016. The program was launched in June 2016.

The Residential Appliance Recycling Program incorporated a variety of outreach methods to generate customer interest. These methods included bill inserts, direct mailing materials, word of mouth, and digital media campaigns. Through December 2019, the program recycled 4,980 freezers and refrigerators. This program ended December 31, 2019.

**Case No. PUR-2019-00122**

On September 30, 2019, Appalachian Power filed for approval for three new DSM programs: the Residential Low-Income Single Family Weatherization program, the Residential Low-Income Multifamily Weatherization program, and the ENERGY STAR<sup>®</sup> Manufactured Homes program. In the Commission's Final Order, the Company was granted permission to implement these programs beginning in January 2021.

RESIDENTIAL LOW INCOME SINGLE FAMILY WEATHERIZATION PROGRAM is designed to generate savings for residential low-income customers through the evaluation of energy improvement opportunities, installation of weatherization upgrades, and other energy savings for dwellings. The program has been implemented to replace APCo's existing Residential Low Income Weatherization program, the latter of which began in 2015 and expired on December 31, 2020. The new Low-Income Single Family program is a more fully funded offering that can reach and assist more low income customers. Through December 31, 2023, 1,031 projects had been completed. The existing Low-Income Single Family program will conclude December 31, 2024.

RESIDENTIAL LOW INCOME MULTIFAMILY WEATHERIZATION PROGRAM delivers targeted energy efficiency measures that are provided and installed in income-qualified multifamily properties. The program educates and motivates owners and tenants to participate in additional programs offered by Appalachian Power in Virginia and includes an education component for participating customers on ways to effectively manage their energy use. Through December 31, 2023, 1,676 projects had been completed. The existing Low Income Multifamily Weatherization program will conclude December 31, 2024.

RESIDENTIAL ENERGY STAR<sup>®</sup> MANUFACTURED HOMES PROGRAM incentivized builders and dealers of manufactured homes to manufacture and sell new homes that met ENERGY STAR<sup>®</sup> efficiency standards, as well as incentivized APCo customers to purchase them. The ENERGY STAR<sup>®</sup> Manufactured Homes Program was previously included in the Company's portfolio and ended in December 2018. Due to the increasing popularity and success of the program during the program's last months of operation, the Company relaunched the program, with certain modifications, beginning in 2021. There were 145 ENERGY STAR manufactured homes purchased through December 31, 2021.

Based on ADM's analysis, and surveys conducted with manufactured home retailers, manufactured homes now being sold in the APCo service territory upon relaunch were almost exclusively ENERGY STAR<sup>®</sup>, or similar, homes. Therefore, there was heavy free ridership in the program. It appeared that the market for ENERGY STAR<sup>®</sup> manufactured homes had been transformed since this program was designed and implemented. Given this, and that the Company's program appeared to be no longer influencing the customer's buying decision, the Company closed the program proactively. To be more specific, the Company stopped accepting new incentive applications on May 1, 2022. For any applications submitted prior to May 1, 2022, the Company honored customer rebate applications until December 31, 2022. This program ended December 31, 2022.



**Case No. PUR-2020-00251**

On November 30, 2020, Appalachian Power filed for approval to implement five new EE/DR programs and one new EE pilot program and to continue two existing programs. The new programs are the Residential Home Energy Report program, the Residential Efficient Products program, the Residential Energy Efficiency Kit program, the Residential Home Performance program, and the Business Energy Solutions program.

RESIDENTIAL HOME ENERGY REPORT PROGRAM helps customers reduce energy needs by encouraging them to alter their electricity usage habits by providing positive reinforcement. The reports compare the participant's energy usage with similar homes, which, ideally, motivate them to take action to save energy and maintain those savings. Through December 31, 2023 there have been 604,715 reports deployed to customers.

RESIDENTIAL EFFICIENT PRODUCTS PROGRAM generates energy savings for consumers through the promotion of high efficiency lighting and appliances. The original program was included in Appalachian's EE portfolio and ended in December 2018. Based on discussions and recommendations in the stakeholder process, the Company re-launched the program. Through December 31, 2023 there had been 3,986 rebate applications submitted for ENERGY STAR® rated appliances.

RESIDENTIAL ENERGY EFFICIENCY KIT PROGRAM generates energy savings for customers by providing energy efficiency kits to residential customers. The kits provide cost-effective energy saving measures for customers while promoting other programs in the Company's EE portfolio. The kits include products with verified electric energy savings that customers can self-install. Through December 31, 2023, there had been 12,985 energy efficiency kits ordered.

RESIDENTIAL HOME PERFORMANCE PROGRAM generates savings for the Company's residential customers through the promotion of energy efficient homes. The primary objective for the program is to produce long-term electric energy reduction in the residential sector. The program provides customers with a comprehensive in-home energy assessment to identify immediate and larger-scale measures that the customer can implement to reduce energy usage. Through December 31, 2023, there had been 4,914 home energy assessments completed. The current Home Performance Program will conclude December 31, 2024.

BUSINESS ENERGY SOLUTIONS (BES) PROGRAM is designed to generate energy savings for C&I customers through the promotion of high efficiency lighting and non-lighting upgrades. The BES Program accelerates energy efficiency by incorporating both lighting and non-lighting measures under one program at the start of 2022. Through December 31, 2023, 305 energy efficiency projects had been completed.

The two programs to be extended included the Residential Bring Your Own SMART Thermostat program and the Small Business Direct Install program.

RESIDENTIAL BRING YOUR OWN SMART THERMOSTAT (BYOT) PROGRAM, which the Commission initially approved for a three-year period ending December 31, 2021, but it was extended in a later EE-RAC filing. The BYOT Program allows residential customers to enroll a qualifying Wi-Fi enabled smart thermostat in a demand response program. During a load management event, the Company either cycles the customer's HVAC equipment or raises the set point of the thermostat. Through December 31, 2023 the Company had 8,546 devices enrolled in the program.

SMALL BUSINESS DIRECT INSTALL (SBDI) PROGRAM, offers on-site energy assessments at small businesses, direct install of certain energy efficiency measures, and financial incentives for other cost-effective measures to capture deeper energy savings. Through December 31, 2023, 391 energy efficiency projects had been completed.

The Company also requested approval for one pilot program, the Volt Var Optimization Pilot program.

VOLT VAR OPTIMIZATION PILOT PROGRAM will allow the Company to regulate more closely the voltage of the electricity that it delivers to its customers so that customers receive a lower, but still acceptable, voltage that allows them to use less energy. Testing has shown that certain equipment, especially motors and other inductive load, operates more efficiently when voltages are closer to the equipment's design voltage. Thus, the program will result in energy and demand savings, with no individual customer investment, and will reach a large group of customers including low-income and rural customers. The first two distribution circuits were turned on in 2022. In 2023, two additional circuits were turned on. The final two distribution circuits are scheduled to be turned on in late 2024.

On July 29, 2021, the Virginia State Corporation Commission issued an order in this case. All programs proposed by the Company were approved subject to certain modifications and conditions. These programs, with exception of the Volt Var Optimization Pilot program, were approved for a five-year period beginning January 1, 2022. The Volt Var Optimization Pilot program was approved for a three-year period.

### **Case No. PUR-2021-00236**

On November 30, 2021, Appalachian Power filed for approval of one new energy efficiency pilot program, the Commercial and Industrial (C&I) Custom Pilot Program. The Company also proposed to extend the period between EE-RAC filings from one year to two years. During the years when a full EE-RAC filing is not required, Appalachian Power will provide the Commission with a report on program costs, revenues, participation, and other relevant information.

C&I CUSTOM PILOT PROGRAM will provide customers with the opportunity to earn incentives for energy efficiency improvements that are not already covered by the BES Program and/or Small Business Direct Install Program. Customers will receive an incentive that is customized to the specific results of the energy efficiency technologies, processes, and

measures proposed for implementation. The C&I Custom Pilot Program successfully launched in January 2023.

On July 15, 2021, the Virginia State Corporation Commission issued an order in this case. The Commission approved the C&I Custom Pilot Program for a three-year period starting in January 2023. Through December 31, 2023, there had been 3 custom pilot projects completed.

The Commission approved the Company's request to extend the period between EE-RAC filings to two years. The Company filed an updated report on program costs, revenues, participation, and other relevant information on November 30, 2022, which was the first year where a full EE-RAC filing was not made.

### **Case No. PUR-2023-00169**

On November 30, 2023, Appalachian Power filed for approval to implement two new EE/DR programs, extend three existing programs, and make enhancements to several existing programs that were previously approved by the Commission. The new programs are the Residential School Kits Program and the Residential Multifamily In-Unit Program.

RESIDENTIAL SCHOOL KITS help educate customers on energy efficiency through a school-to-home model. Students will receive energy efficiency-focused education in the classroom, then apply that learning at home with their families through the installation of the kit products. The program has been approved by the Commission, and is scheduled to launch in January 2025.

RESIDENTIAL MULTIFAMILY IN-UNIT helps customers reduce energy by providing energy assessments and in-unit direct install measures for multifamily properties. Additional energy measures will be available for installation by trade allies. Incentives are offered for additional measures, and the cost will be covered by the property owners. The program has been approved by the Commission, and is scheduled to launch in January, 2025.

The three programs to be extended are the Low Income Single Family Program, Low Income Multifamily Program, and the Home Performance Program.

RESIDENTIAL LOW INCOME SINGLE FAMILY PROGRAM is designed to generate savings for residential low-income customers through the evaluation of energy improvement opportunities, installation of weatherization upgrades, and other energy savings for dwellings. The new Low-Income Single Family will begin in January 2025.

RESIDENTIAL LOW INCOME MULTIFAMILY PROGRAM delivers targeted energy efficiency measures that are provided and installed in income-qualified, multifamily properties. The program educates and motivates owners and tenants to participate in additional programs offered by Appalachian Power in Virginia and includes an education component for participating customers on ways to effectively manage their energy use. The new Low-Income Multifamily will begin in January 2025.

RESIDENTIAL HOME PERFORMANCE PROGRAM generates savings for the Company's residential customers through the promotion of energy efficient homes. The primary objective of the program is to produce long-term electric energy reduction in the residential sector. The program provides customers with a comprehensive in-home energy assessment to identify immediate and larger-scale measures that the customer can implement to reduce energy usage. This program is an extension of the previous Home Performance Program, with the addition of a moderate-income tier, which will allow the program to reach more customers by offering tiered rebates to moderate income qualifying customers. The Home Performance Program, with these modifications, has been approved by the Commission and will begin in January 2025.

Additionally, the Company requested to align the rate year with the standard calendar year. The Commission approved this request; therefore, the next full VA EE-RAC filing will be on or about March 15, 2026.

### **Active Energy and Demand Savings Programs**

The following table outlines the Gross and Net savings for both kWh and kW for each of the Energy Efficiency programs in Virginia during program year 2023.

2023 Energy Efficiency Programs	Realized Gross kWh Savings	Realized Net kWh Savings	Realized Gross kW Savings	Realized Net kW Savings
Residential Low Income Weatherization	1,459,126	1,459,126	259.58	259.58
Residential Low Income Multifamily	320,034	320,034	98.79	98.79
Residential Home Performance Program	2,694,520	2,148,128	455.56	399.71
Residential Bring Your Own Thermostat Program	90,101	90,101	5,790.53	5,790.53
Efficient Products Program	6,681,231	3,614,889	727.82	395.48
Energy Efficiency Kits	1,071,855	1,062,492	90.00	89.15
Home Energy Reports	31,578,044	31,578,044	6,690.44	6,690.44

Business Energy Solutions	19,028,531	15,129,753	4,234.44	3,450.45
Small Business Direct Install	2,024,128	2,024,128	808.65	808.65
Custom C&I Pilot Program	368,855	293,280	66.60	54.27
VVO	1,922,318	1,922,318	527.23	527.23
Total	67,238,743	59,642,293	19,749.64	18,564.28

#### Opt-Out (20VAC-350)

Consistent with the Virginia State Corporation Commission's Rules (20VAC5-350) for Large General Service Exemption from Energy Efficiency Rate Adjustment Clause(s), customers may obtain exemption from energy efficiency rate adjustment clauses (sometimes referred to as "riders") and are thereby no longer eligible to participate in a utility's energy efficiency programs. To facilitate exemption, customers must certify they have implemented energy efficiency programs, at the customer's expense, that have produced measured and verified results within the prior five years. There are other customer obligations required to opt-out of the EE-RAC, or to continue to opt-out of the EE-RAC, as defined in 20VAC5-350. Customer-reported energy and demand savings associated with such customer-implemented programs for Program Year 2022 are summarized in the below table.

#### *Summary of Opt-Out Customer Reported Savings*

<i>Program Year</i>	<i>Number of Customers</i>	<i>Reported kWh Savings</i>
PY2023	13	129,072,308

### **Pilot Programs to Comply with Legislation**

#### **SB1349 and SB966**

VETERAN ENERGY VOUCHER PILOT PROGRAM provides energy assistance for homeless veterans who were receiving support from the Virginia Housing Development for Veterans through the Virginia Wounded Warrior Program. On August 31, 2015, APCo and Dollar Energy Fund, Inc. (Dollar Energy) signed a letter of agreement setting forth the operating parameters of the program. As administrator, Dollar Energy was responsible for managing and administering all phases of the Veteran Energy Voucher Pilot Program. The goal of the program was to provide utility grant assistance to low-income homeless veterans to assist them in getting back into housing. Those veterans enrolled in the Virginia Veterans & Family Support program or the Total Action for Progress (TAP) program within the Company's Virginia service area also qualified for the assistance.

To access the \$500 energy voucher, Virginia Veterans & Family Support or TAP completed the application for new electric service on behalf of the veteran. Each \$500 energy voucher was used for connection fees and deposits, with any remaining voucher funds applied to future billings.

Through December 2023, 321 grants were given for a total amount of \$160,500.

Under the provisions of Senate Bill 966 of the 2018 General Assembly, the Company has extended this program.

ENERGY EDUCATION PILOT identifies APCo customers who have received financial assistance through different agencies to help pay their electric bill. The pilot program provides mailings directly to these customers with information regarding measures they can take to save energy and reduce their electric bills.

This pilot program was originally proposed and facilitated under SB1349. Because of the success of the program, the pilot was continued under the provisions of SB966.

The Company partnered with Dollar Energy to collaborate on the pilot program. Together, a comprehensive energy efficiency packet of information was developed and ultimately mailed to qualifying customers. The energy efficiency packet includes:

- Information regarding specific measures or behavior changes customers can make to reduce energy consumption;
- Energy Efficiency and Demand Response programs offered by the Company in which the customers could participate;
- Information on other weatherization assistance programs offered in the Company's service territory;
- Literature to increase energy efficiency awareness; and
- A post card with information on how the customer can receive a free energy conservation kit mailed directly to their home. This kit includes six energy efficient light bulbs, 2 LED night lights, two faucet aerators, and a refrigerator thermometer.
- Up to 2,500 kits are available to qualifying customers annually.

### **Tariff Options**

APCo continues to offer various time-of-day tariff options that encourage customers to shift consumption to lower cost, off-peak, periods. With a change of lifestyle, or in the case of a non-residential customer, a change in operations, customers that shift or reduce demand during the Company's peak demand periods may save money. These tariff options include Commercial Load Management Time-of-Day Provision, off-peak excess demand provisions for Medium General Service, General Service, and Large General Service Schedules, a General Service Time-of-Day Schedule and an Advance Time-of-Day Schedule.

In addition, on September 12, 2019, the SCC approved a voluntary and experimental rate schedule, for a four-year period, for APCo customers who own electric vehicles. This optional tariff, called Schedule PEV – Experimental (Residential Plug-In Electric Vehicle Charging), allows residential customers who are receiving standard service to separately charge their electric vehicles on a time-of-day rate schedule. To take service under Schedule PEV, a customer must have an advanced metering infrastructure (AMI) meter installed. In addition to the house meter, a separate AMI meter is installed to measure the on-peak and off-peak kWh usage of the electric

vehicle charger. The electric usage of the electric vehicle charger is thereby subtracted from the house meter so that the entire house is not subject to on-peak and off-peak rates, providing the customer with an economical method to charge their electric vehicle and helping the Company manage on-peak electrical demand on the grid. The RS-PEV tariff [059] was approved as a permanent offering as part of Case No. PUR-2023-00002 on January 29, 2024.

The Company received approval for the Residential Smart Demand and Smart Time of Use rate schedules to be available to customers in 2021 (Case No. PUR 2020-00015). The two rate schedules use Advanced Metering Infrastructure (AMI) to provide residential customers with options to reduce consumption during peak hours.

### **Demand Response Tariffs**

In case PUR-2020-00015, the Company received permission to close Rider DRS RTO Capacity to new customers and modify DRS to be a peak shaving tariff with the purpose of reducing the Company's cost causing peaks. The Company plans to use up to 60 hours each PJM Delivery Year, at its own discretion to reduce its peaks coincident with PJM's. If customers who are participating in the tariff comply with the interruptions, they will receive a monthly demand credit that will apply to their nominated interruptible demand reservation kW. The Company has sought to modify this rider to conform with evolving PJM standards, and will include a demand credit, a curtailment credit for energy saved during events, and a non-compliance penalty,

Also, the Company recently introduced another demand response tariff, the Optional Rider C.S. (Curtailment Service Rider) for Commercial and Industrial customers. Under this tariff, Customers are provided the opportunity to reduce their cost of electric service by curtailing usage during Voluntary Curtailment Events as requested by the Company. Upon each event, the Customer shall have the option, but not the obligation, to curtail usage at their premises. Customers are compensated for reducing load during Voluntary Curtailment Events per the provisions of the tariff. Eligible Standard Service customers must have a curtailable usage of not less than 1,000 kW at the metering point for a single account for electric service.

### **Consumer Education Program on Energy Conservation**

For several years, Appalachian Power has utilized a consumer education program on energy conservation entitled, "Watt, Why, & How." The program is geared toward educating community leaders and citizens on what APCo is doing to meet the demand for electricity, what changes are involved in electric rates, and how people can save money on their electric bills.

The program is promoted through bill inserts, bill messages, advertisements, and community presentations. APCo employees continued to make presentations about energy efficiency to such groups as local Rotary Clubs, Chamber of Commerce boards, and other civic groups. In addition, APCo has a monthly e-newsletter that offers energy saving tips to approximately 370,000 of its customers that have registered an e-mail address with the Company.

### **Improved Efficiencies in Internal Operations**

The Company continues to explore opportunities to improve internal efficiencies including use of

newly emerging cost-effective LED lighting technologies both inside and outside our facilities. The Company continues to conduct lighting retrofit projects, install ENERGY STAR rated white roofs, energy management controls, and replace older, inefficient HVAC equipment. When compared to weather-normalized usage during a baseline year of 2007, energy use in APCo's Virginia facilities for the 12-month period ending December 2023, more than 10 million kWh have been saved, representing an approximate 49% reduction.



**Rick E. Lovekamp**

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November 1, 2024

**RE: Annual Reporting Requirement of § 45.2-1712**

Dear Mr. Davis:

Pursuant to § 45.2-1712 of the Code of Virginia, Kentucky Utilities Company, d/b/a Old Dominion Power Company (“ODP” or “the Company”) hereby submits the 2024 Annual Report that discloses its efforts to conserve energy.

On June 1, 2023 ODP filed an application<sup>1</sup> with the Virginia State Corporation Commission (“VSCC”) requesting approval of a Demand-Side Management (“DSM”) Plan and cost-recovery adjustment clause. For the 2024-2030 period, the Company was proposing one energy efficiency program and one administrative program. The energy efficiency program was Income and Age Qualifying Deep Retrofit that was an education and weatherization program designed to reduce electric energy consumption of qualifying customers. The administrative program was Program Development and Administration, which would have captured costs incurred in developing and administering energy efficiency initiatives that are common to the development of all the possible programs. The Company projected a total DSM-EE portfolio cost of \$2.8 million from 2024 to 2030 that would achieve a total energy reduction of over 770 MWhs. On March 12, 2024, the VSCC issued an Order that did not reach a majority decision on the matter, so the VSCC did not issue an Order approving or rejecting the application.

The Company continues to place a strong emphasis on energy conservation through consumer education and employs several methods to disseminate energy efficiency and conservation tips. Each month the Company prepares its Power Source newsletter which each customer receives with their monthly bill. The newsletter contains practical and proactive ways for customers to implement energy and conservation measures. Customers who request a paperless bill receive an electronic version of the newsletter. Customers also can view the newsletter on the Company website.

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<sup>1</sup> Application of Kentucky Utilities Company d/b/a Old Dominion Power Company for Implementation of Demand-Side Management Program and Cost-Recovery Adjustment Clause, Case No. PUR-2023-00096

The Company website also contains user friendly tools which allow customers to identify potential areas for energy savings. There are “how to” videos which offer low cost and no cost ways to save on lighting, heating, and cooling, appliances and electronics, insulation and air sealing, water, and seasonal tips. Additionally, a Watt Finder Guide is available, which educates customers on how appliance choices and usage impact energy consumption.

Energy efficiency tips continue to be made available to customers through advertising and at various public gatherings and community festivals. New energy efficiency displays at these events give customers hands-on experiential tips on how to detect air leaks and make smart energy choices at home.

The Company is installing more energy efficient LED lights for all new streetlight requests. In addition, existing mercury vapor and high-pressure sodium streetlights are being replaced with LED lights upon failure.

In addition, KU and LG&E have had demand-side management and energy efficiency programs (“DSM/EE”) in place in Kentucky since 1994, which ODP customers have benefitted from indirectly through avoided cost of capacity savings. KU and LG&E have obtained approval from the Kentucky Public Service Commission (“KPSC”) of numerous DSM/EE offerings over the years. In a November 6, 2023 Order<sup>2</sup>, the KPSC approved the KU and LG&E 2024–2030 DSM-EE plan, that as proposed, according to LG&E/KU, would result in an increase in peak cumulative demand savings from 296 MW to 377 MW by 2030. KU and LG&E estimated to achieve additional peak cumulative energy and gas savings of 878 GWh and 170,000 Mcf by 2030. KU and LG&E proposed to increase the total DSM budget from approximately \$98 million to \$341 million by 2030. KU and LG&E began the implementation of the new plan on January 1, 2024.

ODP, KU, and LG&E are also committed to supporting efforts that promote planting trees as demonstrated in their Plant for the Planet program which dedicates \$75,000 annually to offer matching grants from \$500 to \$5,000 to non-profit and local governments. The Right Tree – The Right Place program supports planting native trees in appropriate locations throughout each utility's service territory. Additionally, KU and ODP provided free tree seedlings to the communities in which they serve in support of Earth Day. These programs are important because trees help to provide shade for houses which, over time, can help customers better manage energy use and, in turn, their energy bills. Also, trees give off oxygen and remove carbon dioxide from the environment.

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<sup>2</sup> Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generating Unit Retirements – Case No. 2022-00402

Should you have any questions about this report, please contact me at your convenience.

Sincerely,

Rick E. Lovekamp