

# Environmental Stewardship

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# Environmental Stewardship

“Dominion Energy is fully committed to meeting its customers’ energy needs in an environmentally responsible manner. We aim to do what’s right for the communities we serve by always complying with laws and regulations, and acting consistently with our core values.” —Pam Faggert



Pamela F. Faggert, Chief Environmental Officer and Senior Vice President, Sustainability

While our environmental commitment starts with full compliance with regulations, the expectation goes further. We meet or go beyond applicable laws and regulations and pursue opportunities to create and preserve shareholder value while doing what’s right for our employees, customers and communities.

To live up to these expectations, our environmental management system has a robust set of clear expectations for every employee and for every company that helps us do business. Beginning in 2016 and continuing into 2017, we took a hard look at the systems and processes in place to improve our environmental performance.

The result is an even stronger environmental management system, led by the company’s most senior leaders, and driven by the chairman and CEO. In 2017, we established new companywide standards for environmental management, critically reviewed current practices, and established implementation plans for our business groups. In the year ahead, each of our business groups will implement these improvements to our environmental management system.

As we implement these standards, we also will focus on those environmental aspects of our operations important to our company and our stakeholders as we provide energy to our customers. We continue to strive to improve our efforts to address greenhouse gases and other air emissions from our operations, water use and water quality, responsible management of wastes, and land and wildlife protection.

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## Greenhouse Gases & Air Quality

### Leadership

**1 of 3  
companies**

reducing carbon  
emissions rate by

**more than  
40%**

Since 2000, our carbon intensity has decreased by 43 percent.

The company intends to further increase our reliance on cleaner generating technologies, and when combined with continued operation of our three nuclear power stations, should result in an additional reduction of our carbon intensity to 50 percent by 2030.

**Our air quality strategy** is to pursue a diverse mix of cleaner, more efficient, and lower emitting methods of generating and delivering energy—while advancing aggressive voluntary measures to continue dramatically reducing emissions.

**Here's how we performed.** Between 2000 and 2017, we reduced air emission rates by **more than 90 percent**—and *doubled* our production of electricity from renewable energy. We are burning a lot less coal, which today accounts for just 13 percent of our electric output. Since 2008, we have **reduced methane emissions by 5.4 billion cubic feet**, according to EPA estimates. This results from years of taking increasingly stringent voluntary action.

**Here's where we're going.** The company intends to further **increase our reliance on cleaner generating technologies**, and when combined with continued operation of our three nuclear power stations, should result in an **additional reduction of our carbon intensity to 50 percent by 2030.** We will continue a comprehensive methane strategy that would further **reduce methane emissions over the next five years** at an even more rapid pace.

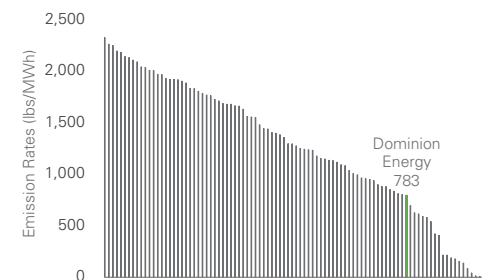
### Addressing Climate Change

Global climate change is one of the most significant energy and environmental challenges. We are committed to doing our part, along with other energy companies, to address greenhouse gas emissions from our electric generating fleet and our natural gas businesses.

#### Reducing Methane Emissions

Our methane emissions reductions are the result of the cumulative effect from numerous voluntary programs. For years, our methane strategy focused on reducing our lost and unaccounted for gas rate. But we wanted further reductions. So more than five years ago, we joined the EPA's Natural Gas STAR program, which emphasized best management practices to voluntarily reduce methane emissions and report those reductions. Interested in

**Environmental Leadership**  
Carbon Performance Benchmarking — Industry CO<sub>2</sub> Intensity



Source: Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the U.S. (M.J. Bradley, July 2016).

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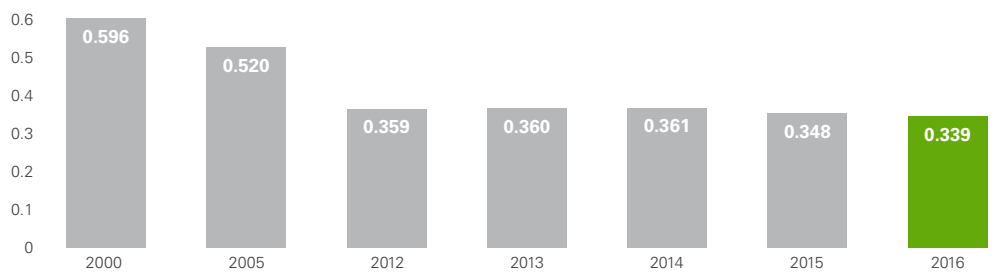
further reducing our methane emissions, we joined EPA's Methane Challenge as a founding member.

As part of the Methane Challenge, we committed to methane reduction targets through 2021, and we began disclosing results before the Challenge deadline. Experience has taught us that **one of the most effective ways to reduce methane emissions is to upgrade older pipelines.** In Ohio—our largest gas distribution market—we have been actively replacing more than 5,000 miles of bare steel mains since 2008. As part of the Methane Challenge we are planning to reduce methane emissions by investing \$200 million or more annually over the next two decades to upgrade aged bare steel, cast iron, wrought iron and copper pipe in our Ohio pipeline system—expanding on the \$1.2 billion investment we have already made to replace more than 1,300 miles of pipeline in the Buckeye State. In 2016, we began to grow a similar program we created in West Virginia in 2016, and plans call for an additional \$58 million investment there over the next two years.

On the high pressure transmission side of our business, we are reducing emissions in the Methane Challenge by relieving pressure before conducting pipeline maintenance. The Dominion Energy Transmission team will reduce methane emissions from maintenance activities by at least 50 percent by 2021. New procedures include reducing pipeline pressure before blowing down (this is the procedure where maintenance depends on first relieving pressure in the pipeline by releasing methane into the atmosphere), routing gas to a compressor or other systems for beneficial use, and using “hot taps.” (This is the ability

**Dominion Energy Carbon Intensity Reductions**

CO<sub>2</sub>e intensity rate (mt/net mWh) (by ownership)



to safely tap into a pipeline while it remains under pressure. The technology is possible only on newer pipelines.)

In Utah—our newest gas distribution market—we will reduce methane emissions under the Methane Challenge through a new program to prevent excavation damage of pipelines. Dominion Energy Wexpro will install new air compressors and air dryers to 31 devices at Canyon Creek and Church Buttes, eliminating 46,000 MCF gas lost and related emissions. We are proud that Clean Cities recognized Dominion Energy as one of the top idle-free businesses in Utah in 2017.

Recently, we challenged ourselves to find additional voluntary measures in addition to the prior voluntary programs to reduce methane emissions even further, and launched new voluntary initiatives to achieve additional reductions over the next five years.

In addition to the reduction of emissions, we are also focused on continuing to be transparent about our emissions, and in fact, we are proud to have **the most**

**comprehensive public disclosures of any peer gas company.** Dominion Energy will increase disclosures around greenhouse gases by participating in the CDP (formerly the Carbon Disclosure Project) reporting on greenhouse gases in 2018.

In 2015, we published our first methane report, building on more than a decade of voluntary reports on greenhouse gas emissions. This report was updated again in 2016. In 2012, we began reporting methane emissions from our natural gas system under the EPA mandatory greenhouse gas-reporting program. In 2008, we began developing a corporate greenhouse gas inventory for our natural gas businesses, and we have voluntarily reported our total carbon emissions on our website since 2005. Dominion Energy has been proactive about reporting methane emissions, and our program for estimating them uses approaches that the EPA recommends. We continue to incorporate and share cost-effective best practices in engineering design to reduce methane emissions from new projects.

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**Reducing carbon intensity**

Dominion Energy has a multi-pronged strategy to address carbon emissions, focusing on the ways electricity is produced, transmitted and consumed, and the company has announced plans to continue to increase our reliance on cleaner generation technologies. Our strategy also relies on maintaining a diverse fuel mix so that our customers can receive the benefits of changing market conditions for fuel prices. That’s why we are investing in clean, renewable sources of energy, natural gas, and emission-free nuclear generation. This strategy is producing demonstrable results.

**Dominion Energy’s carbon emissions rate for its electric generating fleet is in the top quartile (lowest emitters) among energy producers in the United States,**

according to an annual benchmarking report published by the M.J. Bradley group for CERES.

**Since 2000, our carbon intensity has decreased by 43 percent,** placing us in an elite group of just three companies. Dominion Energy intends to further increase our reliance on cleaner generating technologies. When combined with continued generation of our three nuclear power stations, this should result in an additional reduction of our carbon intensity to 50 percent by 2030.

In addition, between 2000 and 2016, our use of coal to generate electricity for customers in Virginia fell from 46 percent to 27 percent. In those same 16 years, our production of electricity from natural gas increased from 5 percent to 34 percent, and

our production of electricity from renewable energy doubled. Generation of the future also will be more efficient, like the new natural gas-fired power station that will open in 2018 in Greensville County, Va. It will be the largest and most efficient natural gas power station in the country—operating under the most stringent air permit in the United States in terms of carbon dioxide emissions. It will be able to power 400,000 homes. Also essential to keeping carbon emissions low, our production from carbon-free nuclear generation has remained high.

We will continue to transition to cleaner generation to prepare for a lower carbon future, not only because that’s where the world is moving, but because it’s the right thing to do.

**Lower Air Emissions**

The air in Virginia is cleaner today than in the past 20 years, the state’s Department of Environmental Quality reported in late 2017. That’s thanks, in part, to Dominion Energy’s great strides in reducing air pollutant emissions from its electric generating fleet.

Between 2000 and 2016, nitrogen oxide, sulfur dioxide and mercury emissions (measured in pounds per net MWh) from our power generation fleet have been reduced by 93 percent, 98 percent and 97 percent, respectively. Over the same period, Dominion Energy increased the amount of electricity provided by 23 percent.

**Improving Air Emissions - Dominion Energy**

Emissions Intensity Reductions (lbs./MWh) Compared to Increases in Generation (MWh).

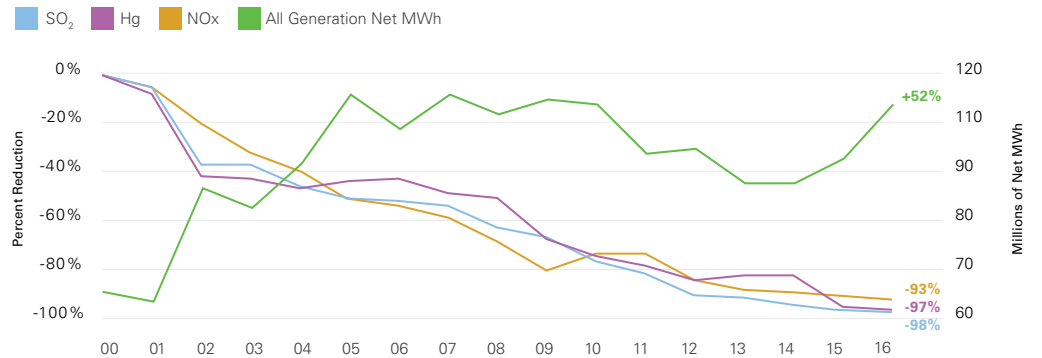


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# Dominion Energy Green Fleet

## A Greener Vehicle Fleet

Alternative vehicle technologies and fuels help lower greenhouse gas emissions, reduce worksite noise levels, and improve working conditions for our field crews. As of January 2017, more than one in three (38 percent) of the vehicles in our on-road fleet—more than 6,000 cars and trucks—are powered by alternative fuels:

- **B20 biodiesel fuel** powers more than 800 vehicles.
- **Compressed natural gas** is used in more than 250 vehicles in Ohio and Utah.
- **Hybrid car batteries and gasoline** work together to lower the fuel and operating costs of our hybrid electric vehicle fleet, providing health and environmental benefits, too.
- **Large lithium-ion battery packs** fuel our all-electric vehicles, helping reduce the company's fuel use and carbon footprint. (See the section to learn more about Dominion Energy's efforts to promote electric vehicle use among its customers.)

### Dominion Energy's Green Fleet (As of Jan. 2017)

VEHICLETYPE	NUMBER
B20 Biodiesel	837
Flex fuel*	1,236
Compressed Natural Gas	255
Hybrid Electric	52
Bi-Fuel	365
<b>Total</b>	<b>2,749</b>

\*Flex fuel vehicles operate mainly on gasoline due to the scarcity of Ethanol 85.

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Dominion Energy Generation (Air Emissions)	2016	2015	2014	2013	2012	2005	2000
Total CO <sub>2</sub> e emissions (millions of metric tons) (by ownership)	37.2	34.3	33.6	33.9	36.2	58.1	42.6
CO <sub>2</sub> e intensity rate (mt/net MWh) (by ownership)	0.339	0.348	0.361	0.360	0.359	0.520	0.596
Total CO <sub>2</sub> emissions (millions of metric tons) (by ownership)	36.7	33.8	33.1	33.2	36.1	57.3	42.0
CO <sub>2</sub> intensity rate (mt/net MWh) (by ownership)	0.336	0.343	0.356	0.354	0.359	0.513	0.587
Nitrogen oxide emissions (metric tons) (by ownership)	13,883	15,361	16,987	18,742	27,173	101,106	132,895
Nitrogen oxide emissions intensity (MT/Net MWh) (by ownership)	0.000128	0.000157	0.000184	0.000201	0.000271	0.000912	0.001861
Sulfur dioxide emissions (metric tons) (by ownership)	9,665	12,921	25,961	37,294	45,282	283,213	372,732
Sulfur dioxide emissions intensity (MT/Net MWh) (by ownership)	0.000089	0.000132	0.000281	0.000400	0.000452	0.002554	0.005219
Mercury emissions (kg) (by ownership)	52	54	231	235	226	931	1,071
Mercury emissions Intensity (kg/Net MWh)	4.78E-07	5.49E-07	2.50E-06	2.52E-06	2.25E-06	8.40E-06	1.50E-05

Dominion Energy Natural Gas (Air Emissions)	2016	2015	2014	2013	2012
Methane emissions (segments reported prior 2016; thousand metric tons)	35	40	46	45	49
Methane emissions—Blowdown segment reporting starting in 2016	8	(a)	(a)	(a)	(a)
Dominion Energy West Methane Emissions (thousand metric tons)	20	21	21	21	21

(a) Methane emissions from blowdowns added as reporting segment in 2016.

CO <sub>2</sub> e emissions of SF6	2016	2015	2014	2013	2012
Sulfur Hexafluoride (MT)	1.8	2.36	3.32	2.04	2.09
CO <sub>2</sub> e of sulfur hexafluoride (MT)	42,846	53,819	75,671	46,446	47,759

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## Water Quality and Use

Part of our environmental responsibility is not only to control air emissions from our operations, but also to conserve resources such as water. Producing energy requires water for cooling, fuel processing, environmental control and more. In many cases, water can be used and then returned to its original source. Since not all water can be returned, we look for opportunities to use less and to reuse water. We have further described our efforts since 2011 in the Carbon Disclosure Project’s annual “Water Disclosure,” to share our water-use and risk-management strategies with customers.



**Our strategy is to use less water** as we transform our fleet to lower carbon. We are identifying ways to use water more efficiently and to protect water quality.

**Here’s how we performed.** Water is not used to cool the new power generation facilities we opened in 2016. These include Brunswick County Power Station, which sports a modern cooling system that does not use water for cooling. Neither does the approximately 742MW of solar generation we currently are developing or have put into service since 2016 began. We continue searching for innovative ways to conserve water as we renovate office buildings. We continue to responsibly “dewater” coal ash ponds, in preparation for closing them well ahead of governmental requirements.

**Here’s where we’re going in the future.** Dominion Energy has already reduced water withdrawal by using low water-use technologies (such as dry-cooled condensers, for example) for new generation, and we will further reduce water use in the future as we continue to add to our portfolio of renewable power generation. In 2018, Dominion Energy Wexpro will install a produced water treatment system at the Canyon Creek Unit Produced Water Evaporation Facility. This system will allow an estimated 21 million gallons of produced water to be reused over the next five years at the Canyon Creek Unit Central facility and operations and operations in Wyoming.

Some of our electricity generating stations require fresh water for sanitation, air pollution control, and equipment cooling. In some cases, we have found opportunities to reuse or recycle this valuable resource. For instance, Chesterfield Power Station reuses wastewater from Proctors Creek Wastewater Treatment Plant in portions of its air emissions control equipment. And in cooler months, Millstone Power Station in Connecticut uses “variable speed drives” to regulate water and ensure the plant uses only the amount of water that is necessary to produce power.



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As we build new power stations, we have worked to eliminate the need for water to be used for cooling. The Virginia City Hybrid Energy Center, a state-of-the-art power station in Southwest Virginia, uses an air-cooled condenser to eliminate the use of water for cooling, differing from traditional coal-fired power stations that require water to cool. Similar, modern cooling systems were installed at Warren County Power Station, which became operational in late 2014, and Brunswick County Power Station, which began commercial operation in 2016. The same system will be used at the Greenville Power Station under construction. New solar construction does not require water to provide power.

**“Dewatering” coal ash ponds**

We are in the process of closing 11 ash ponds at four coal-fired power stations in

Virginia. We plan to close these ponds, which will eliminate future releases of water. One of the first steps is “dewatering” the ponds, which involves careful treatment and testing of the water before it’s released. We’re working with several top firms that specialize in on-site wastewater treatment. We will remove the water and treat and test it on-site using a multistage process to meet or go beyond stringent, government-mandated levels before release. The coal ash itself will not be released into nearby waterways, merely water that has been put through a rigorous filtration process incorporating state-of-the-art science.

When releasing the water from coal ash ponds, we are committed to protecting nearby streams and rivers. We follow the Virginia Department of Environmental Quality’s stringent standards to protect not

only water, but also fish, birds and other animals. Even after the ponds are closed, groundwater will continue to be monitored. We are committed to transparency around this process. We post water quality test results publicly on our website at [www.dominionenergy.com/coalash](http://www.dominionenergy.com/coalash).

**Water Use in Gas Operations and Infrastructure Construction**

Water is used in the initial completion of natural gas wells through a process called hydraulic fracturing, or “fracking.” While other companies produce most of the gas transferred in our pipelines, we do use this process in the extraction parts of our business.

Pipeline construction sometimes involves clearing of the land in areas that have rough terrain or wetlands or streams along the path. This type of construction can be challenging, and we work with our construction partners to minimize impacts to the environment. Pipeline construction involves careful planning to implement safely and avoid impacts to the environment. That’s why we did research to identify “best-in-class” practices to avoid soils from impacting wetlands or streams during construction. In addition, we signed on to the Interstate Natural Gas Association of America’s Best Practices for Pipeline Construction as a further commitment to minimize impacts from construction. Sometimes the plan will involve drilling beneath waterways to avoid disturbing aquatic life. This type of construction likewise requires careful planning to avoid impacts.



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**Reducing water use in facilities**

We are committed to conserving water not only in large-scale operations, but also in our office facilities. For instance, we use motion sensors in our restrooms with no-touch flush features and hand-washing fixtures to minimize water usage. New company office buildings are Leadership in Energy and Environmental Design (LEED)-certified by the U.S. Green Building Council and are constructed with low-water consumption landscaping and building fixtures. Six of our offices have been built to these standards: Cove Point liquefaction plant in Maryland; White Oaks in West Virginia; the new Systems Operations Center near Richmond; the administrative building at Brunswick Power Station; the gas transmission facility in Sabinsville, Pa.; and the Ohio Training Center in Boston Heights. Another six are currently under construction: the corporate office at 600 Canal Place and the corporate hangar in Richmond; an administrative building and warehouse in Lima, Ohio; facilities in Oakford, Pa., and Summersville,

W.Va.; and the administrative building at Greenville Power Station in Virginia.

**When something goes wrong...**

We work hard to address it so it will not happen again. This happened with an accidental fuel spill in January 2016. Dominion Energy crews responded to a failed transformer at an electric substation in a congested metro area near Washington, D.C. The failure caused mineral oil dielectric fluid to be released, and a series of unforeseen circumstances with the oil containment system caused some of the oil to make its way into a nearby waterway.

Over the next eight months, Dominion Energy worked with various federal, state and local agencies to reduce the impacts of the released oil and to repair the substation, significantly enhancing its spill containment systems.

Although this did not meet our expectations, Dominion Energy used this experience to launch an extensive review of oil spill response plans and physical

containment systems at its electrical substations. Over the next 17 months, Dominion Energy employed extensive resources to revise oil containment engineering standards, physically inspect existing containment systems, evaluate sites for oil containment upgrades and repairs, and revise the company’s Spill Prevention Control and Countermeasures Plan for these facilities. A total of 654 substations were inspected and evaluated. Repairs or enhancements were made to existing containment systems at 135 sites, and new or additional containment systems were installed at 43 sites. With the completion of this tremendous effort in July 2017, coupled with a strategy of continuing inspection and evaluation, Dominion Energy’s substation spill prevention and control systems will remain robust in the long term to ensure the protection of environmentally sensitive ecosystems within its service territory.

Dominion Energy Generation Water Use	2016	2015	2014	2013	2012
Water reused/recycled (million liters)	5,598	2,097	2,017	1,700	1,173
Water reused/recycled (million liters/Net MWh)	0.0000510	0.0000213	0.0000217	0.0000181	0.0000116

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## Reducing Waste

**Our strategy for handling waste** is to avoid creating waste whenever possible, and to look for opportunities to reuse waste material when it cannot be avoided. When waste requires disposal, we do so responsibly.

**Here's how we performed.** We recycled 718,257 tons of coal combustion byproducts, 7,473 tons of ash from the combustion of wood waste, 12,335 tons of oils and fluids, 20,553 tons of scrap metal, 495 tons of paper, cardboard, plastic and glass, and 34 tons of electronic waste. Dominion Energy Questar received a "Zero Waste Award" in recognition of its "outstanding waste reduction achievements in the state of Utah" from the Utah Recycling Alliance

for recycling efforts. In 2017, we opened a new landfill for future management of ash from Chesterfield Power Station.

**Here's where we're going in the future.**

We will continue our zero-landfill policy Information Technology equipment by responsibly recycling IT equipment that we no longer use.

**Electronic waste**

It's important to us to reuse and recycle responsibly, so we use an IT disposal vendor that has a "no-landfill" policy and resells almost all of the company's disposed assets for continued use, while recycling all others in an environmentally responsible manner. In 2016, we recycled 34 tons of electronic waste.

**Disposal of coal ash**

As part of our transition to cleaner energy, we are shifting our focus on how we manage wastes at our facilities. The generation of new coal ash is eliminated as we retire coal units or convert them to use different fuels. For those stations that currently burn coal or have in the past, managing the ash from these sites happens in one of three ways: deposited in landfills, either on- or off-site; recycled, or stored in ash ponds.

For four stations, coal ash, a byproduct of burning coal, was stored by saturating it with water and pumping it into treatment ponds, which enabled the ash to settle in the pond and water to be released. After two incidents elsewhere in our industry



**Cleaning Up**

We are committed not only to abiding by environmental laws and regulations, but also to going above and beyond to do right by the communities we serve.

The Virginia City Hybrid Energy Center in Wise County, Va., in part uses as a fuel source the waste coal—or "gob"—left behind by local mining operations. So far, we have removed and burned a half-million tons of such coal from the Hurricane Creek gob site, a major polluter of the Clinch River in Southwest Virginia. Here's what the change looks like.

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that involved spills from ash ponds, the EPA established new rules in 2015 for managing ash. We have begun the process to close 11 ponds at these four locations. In addition, a study was completed in 2017 to ensure that stakeholders had information about various options for closure, including safety, environmental, and community impacts of various options.

At other stations that continue to burn coal, the ash is either recycled or landfilled onsite or at a commercial landfill. At Chesterfield Power Station, the ash-handling process for the station was converted to dry handling of ash, and a new state-of-the-art landfill was constructed and began operation in November 2017 for future ash generated at the station that is not recycled.

**Repurposing coal ash**

In the spirit of recycling, we continue to explore innovative ways to reuse coal combustion byproducts for the creation of drywall, roofing shingles, concrete, cement, and even bowling balls.

We recycle about 700,000 tons of coal ash material per year. In 2016, 21 percent of Dominion Energy’s coal ash was beneficially reused. Learn more at [www.dominionenergy.com/coalash](http://www.dominionenergy.com/coalash).

**Recycling**

We recycled more than 41 million pounds of scrap metals such as copper, aluminum and steel. Some of the other materials we are dedicated to recycling responsibly include hard hats, demolition material, scrap batteries, brass, porcelain, iron, crude oil and transformer oil, street lights, and

scrap transformers. In 2016, we recycled nearly 500 tons of paper, cardboard, plastic and glass.

**Efficiency in our offices**

We strive to make our company facilities sustainable by using as many recycled materials and energy efficient appliances as possible. We install LED lights where feasible and replace incandescent lighting and traditional fluorescent lights with efficient T-8 fluorescent fixtures. We keep warm with high-efficiency gas-fired unit heaters in place of steam fan coil units, and we install programmable thermostats to save energy. We also use solar film on windows to decrease heat infiltration and have heat reflective shades that can be closed electronically on hot days to help conserve energy. Our offices sport furniture systems made from recycled materials and carpet manufactured from 90 percent recycled materials, which is also fully recyclable when retired.

In our restrooms, occupancy sensor-controlled light fixtures save energy, and hands-free automated paper towel dispensers, set to distribute the smallest effective amount of paper, reduce trash. Moreover, foam soap dispensers in restrooms reduce the use of soap.

To conserve, we also use measures such as a paperless work order process to cut paper usage by more than 200,000 sheets per year. Moreover, we are using single-stream trash recycling at our offices. Practicing sustainability in our workspaces enables us to be good stewards of the environment for our customers.



**“Green” hard hats that give back**

Dominion Energy buys hard hats made from a plant-based plastic. Just as safe and protective as traditional hard hats, our “green” hard hats are made from green high-density polyethylene, derived from the abundant sugarcane plant. The material is not only 100 percent recyclable, but it also is a renewable resource because sugarcane grows faster than it is harvested. Best of all, sugarcane helps reduce greenhouse gas emissions because it captures carbon dioxide during photosynthesis.

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**Recycling demolition material**

We are practicing sustainability in the construction of a new office tower, to be called 600 Canal Place, in downtown Richmond. After the former building on-site was demolished, more than 50 percent of the demolition material was recycled, per LEED standards. (LEED, or Leadership in Energy and Environmental Design, is a “green building” certification system by which third-party experts certify that a building is environmentally sustainable.) By the end of the project, we expect that number to reach 75 percent. When it is complete, 600 Canal Place will have an LEED Gold rating.

Dominion Energy Waste	2016	2015	2014	2013	2012
Coal ash produced/reused (million tons) (by ownership)	3.2/0.5	3.3/0.6	3.6/0.5	3.7/0.6	2.7/0.5
Coal combustion byproducts produced/reused (million tons) (by ownership)	3.4/0.7	3.4/0.8	3.8/0.7	3.8/0.7	2.8/0.6
Percent of coal combustion byproducts reused/recycled (by ownership)	21	24	18	18	21
Hazardous waste produced (million lbs.) (by ownership)	3.67	2.38	2.22	2.25	2

2016 data does not include Dominion Energy West operations (formerly Questar).

Dominion Energy Material Recycled or Reused (all amounts are reported in tons)	2016	2015	2014	2013	2012
Coal combustion byproducts	718,257	776,765	724,499	726,017	583,336
Biomass combustion products <sup>1</sup>	7,473	13,896	17,287	20,652	15,030
Oils, fluids for reclamation/recovery	12,335	10,241	26,114	17,351	20,326
Scrap metals	20,553	8,145	20,712	18,567	19,802
Paper, cardboard, plastic, glass	495	721	648	1,198	1,334
E-Waste	34	14	46	142	59

The 2016 waste generation includes 0.84 million lbs. of waste generated as part of a one-time soils remediation at one Dominion Energy location.

<sup>1</sup>Includes gypsum

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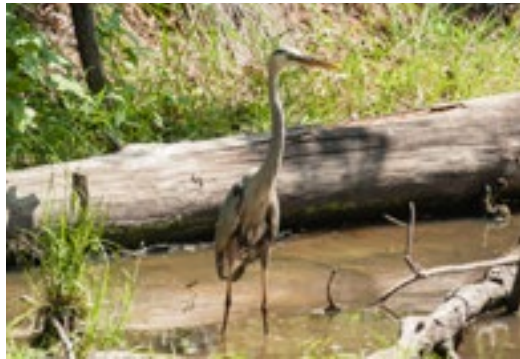
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## Habitat and Wildlife Protection



**Our strategy for protecting ecosystems and wildlife is** to look for opportunities to avoid or reduce impacts from our operations or in new projects.

**Here's how we performed.** In 2016, we implemented improved designs for new construction in our distribution system to provide further protection for birds in our service territory.

**Here's where we're going in the future.** We will continue implementing new design standards that include increased spacing on distribution lines to protect birds, animal guards on exposed equipment, and other deterrents to animals coming near equipment.

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**Protecting birds**

To build on our existing avian protection program, two years ago we began a multi-year project to protect large birds such as bald eagles, ospreys, owls and vultures. When birds with large wingspans make contact with multiple wires, they can be injured by creating a path for electricity. Most injuries and deaths occur when the birds actually land on the power poles or collide with the power lines. The program creates avian protection zones along major rivers where the birds live, such as the Potomac, James, York and Rappahannock. For all new construction or upgrades in these zones, the company increases the space between lines on power poles from 44 inches to as much as 60 inches, to give the birds more room to fly. When it's not possible to spread the wires, the company installs perch guards to discourage the birds from landing. The program protects the large birds and reduces power outages for customers. All new construction outside of the protection zone is built using a design with improved avian protections.

Dominion Energy is the first company in the country to use new aluminum alloy nesting platforms—instead of wooden ones—to lure ospreys from nesting on transmission towers. The aluminum platforms are sturdier, larger and will last a lot longer than the wooden platforms, which are prone to be destroyed by high winds and storms. In 2017, the company installed 12 new aluminum platforms alongside the Wright Memorial Bridge over Currituck Sound in North Carolina's Outer Banks. Keeping the birds off the transmission towers protects them from harm and reduces power outages for the company's customers.



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**Promoting pollinators, rare plants and birds**

We manage our electric rights-of-way to increase habitat for birds, bees, butterflies and other pollinators in Virginia and North Carolina. The company has created more than 43,000 acres of habitat by using selective herbicides that impact only trees and woody brush. By reducing the tree canopy and the shade it creates, flowers, milkweeds and other plants important to pollinators have thrived. In addition, rights-of-way in Virginia are home to rare plants that also like the open canopy. These areas are managed differently to ensure that the plants are protected. The company also has pledged to create more than 60 acres of additional pollinator habitat at its power stations. The Atlantic Coast Pipeline project also is restoring at least 50 miles of right-of-

way with pollinator habitat, native grasses and wildflowers.

In addition, this open space is attractive to birds that like this habitat, such as quail. In Virginia, we partner with the Department of Game and Inland Fisheries to help landowners manage their property in right-of ways for wildlife. As part of the Wildlife Habitat Improvement Program, the owner of property under a transmission line contacts their local Virginia Department of Game and Inland Fisheries biologist to develop a plan to improve wildlife habitat on the right-of-way. The plan may include grubbing stumps, applying herbicides, and planting game food species. Once the plan is developed and approved by the agency and by the company, a portion of the cost to the landowner is reimbursed.

**Bats, eels and more**

Employees at Warren County Power Station noticed in 2015 that bats were being drawn into the large fans that are part of the station's air-cooled condenser. To protect the bats, the company is installing netting beneath the fans where this has been an issue and has since included this in the design of similar equipment.

After it received its new license from the Federal Energy Regulatory Commission in 2005, Roanoke Rapids Power Station in North Carolina has been using eel ladders to capture and count American eels. The eels are transported above the dam so they can reoccupy historic habitat. In 2017, nearly 54,000 eels were moved upstream.



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**Making Changes to Limit Impacts on Wildlife and Habitat**

Our projects can impact wildlife and habitat. We avoid them where we can, and we try to mitigate them where we cannot. The Atlantic Coast Pipeline team has consulted with the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, the U.S. Forest Service, the U.S. Army Corps of Engineers, the West Virginia Division of Natural Resources, the Virginia Department of Game and Inland Fisheries, the Virginia Marine Resources Commission, the Virginia Department of

Conservation and Recreation, and the North Carolina Wildlife Commission. ACP made more than 300 changes to the pipeline routes to avoid impacts on natural resources, threatened and endangered species, and state-protected species, and to accommodate landowner requests. Where impacts were unavoidable, ACP developed mitigation plans, including species-specific mitigation. In addition, ACP is mitigating the loss of forest habitat in each of the three states by acquiring significant acres of forest lands that is then donated to states.

Specific to aquatic life, ACP has developed plans approved by state and federal agencies for the protection of aquatic life, including plans to move fish and mussels from the stream and river crossing areas during construction. Other requirements include time-of-year restrictions and, in some cases, the crossing methods were changed to provide additional protections. This effort also supports state efforts to restore quail populations and is beneficial habitat for turkey and deer.



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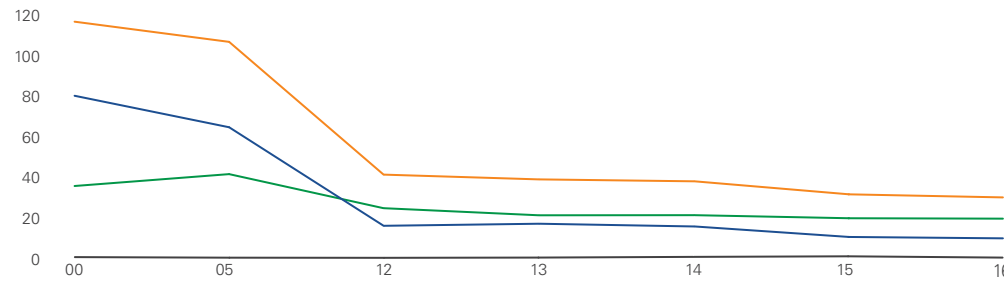
Our Business for the Future

Dominion Energy Compliance	2016	2015	2014	2013	2012
Notices of Violation (NOVs)	12	14	18	13	13
Environmental Penalties Paid	404,415	447,732	420,500	3,692,200	43,245

2016 data does not include Dominion Energy West operations (formerly Questar).

**Toxic Release Inventory**

(kg)



■ Releases to All Media 
 ■ Releases to Air 
 ■ Releases to Land 
 ■ Releases to Water