Dominion Energy®

Actions Speak Louder℠

Methane Emissions Reduction Report

December 2019

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Our Mission

For decades, Dominion Energy has served a core mission of providing clean, safe, affordable and reliable energy to millions of American homes and businesses. This core mission has served our customers and our communities well. The energy we produce and transport powers America's economy, heats and cools the homes of millions, and serves some of our nation's most critical national security assets.

As our society confronts climate change and works toward a more sustainable future, we are determined to serve a broader mission and to be part of the solution. We know that is what our customers and our communities expect of us, and we believe it is the right thing to do. We all share a stake in the future of our environment, and we all have to do our part to help preserve it for future generations.

At Dominion Energy, we are leading the way. We are taking meaningful action to reduce greenhouse gas emissions from our operations and to help our customers do the same.

Dominion Energy has made significant progress over the last two decades. We have reduced carbon emissions from our electric fleet by more than 50% since 2005 and methane emissions from our natural gas infrastructure by more than 24% since 2010. We are also rapidly expanding the use of renewable energy, which includes the fourth largest solar fleet in the country and plans for the largest offshore wind project in the U.S., located off the coast of Virginia.

For more about our efforts to transition to cleaner generation ▶

For the last several years, the company has focused on better understanding where our methane emissions occur across our natural gas footprint, so that we can better aim our efforts to achieve meaningful reductions. In 2018, we conducted a comprehensive review of our emissions tracking and reporting processes to ensure that the inventory is all-encompassing across the delivery chain. Based on this comprehensive inventory, Dominion Energy announced a historic undertaking to reduce methane emissions from our natural gas infrastructure by 50% by 2030. In 2019, the company launched this industry-leading initiative, which builds on past efforts and will prevent more than 600,000 metric tons of methane from entering the atmosphere since 2010. That is equivalent to taking 3.3 million non-electric cars off the road for a year – or planting nearly 250 million new trees.

"We want our investors, customers, and the communities we serve to understand that Dominion Energy is taking serious action to reduce our impact on the environment."

— Diane Leopold

At the same time as we are taking bold steps to lower emissions from our own natural gas infrastructure, we are helping other industries reduce their methane emissions as well. To help curb methane emissions from the agriculture industry – the largest source in the U.S. – Dominion Energy is partnering with the nation's largest pork and dairy producers to capture waste methane from our nation's farms and convert it into clean, renewable energy.

Through our joint venture with Smithfield Foods and partnership with Vanguard Renewables, we have mobilized more than $700 million of shared investment to substantially reduce methane emissions from U.S. hog and dairy farms and provide carbon-beneficial energy to consumers across the country. These initiatives serve as powerful examples of the environmental progress we can achieve through innovation, imaginative thinking and partnerships across industries.

As we continue moving toward a low-carbon future, natural gas is more important now than ever. Natural gas has allowed our company and our nation to transition away from coal and achieve historic carbon reductions in the process. It is enabling us to bring more renewables on the grid by providing the dispatchable 'virtual battery storage' needed to keep the lights on and economy running when solar and wind are not producing electricity. Natural gas is transforming the future of sustainable agriculture and transportation by allowing farmers to convert waste into clean energy and helping maritime shipping vessels convert from diesel to lower-carbon liquefied natural gas (LNG). And it is providing a cleaner alternative for home heating and industrial customers that rely on higher-carbon fuel and heating oil.

Diane Leopold

Executive Vice President & Co-Chief Operating Officer

Gas Distribution,
Gas Transmission & Storage,
Dominion Energy South Carolina

Dominion Energy's natural gas businesses play an important role in assembling each of these building blocks for a low-carbon future.

At Dominion Energy, we know that actions speak louder. This report is more than a statement of our commitment. It is a comprehensive overview of our recent progress and our plan of action to reduce methane emissions even more in the future.

Through this Dominion Energy Methane Emissions Reduction Report, we demonstrate our commitment to transparency and accountability. We want our investors, customers, and the communities we serve to understand that Dominion Energy is taking serious action to reduce our impact on the environment.

Future generations deserve to inherit both a thriving environment and a comfortable, prosperous way of life. Dominion Energy is doing our part to ensure a sustainable and bright future for generations to come.

Sincerely,

Diane Leopold

Summary and Key Highlights

Dominion Energy is transforming the way the company does business to build a more sustainable future. Substantial reductions in greenhouse gas emissions are at the core of this transformation and are a high priority for the company.

Dominion Energy has made significant progress over the last decade, substantially lowering methane emissions from its natural gas infrastructure.

Dominion Energy has committed to reduce overall methane emissions from its natural gas infrastructure by 50% from 2010 levels, by 2030. This industry-leading effort will prevent more than 600,000 metric tons of methane from entering the atmosphere. This bold action is the equivalent of taking 3.3 million non-electric cars off the road for a year, or planting nearly 250 million new trees.

In May 2019, Dominion Energy published a report providing a comprehensive overview of the sources, amounts and reductions of methane emissions across Dominion Energy's natural gas businesses through 2017. It described the meaningful steps the company has taken to reduce methane emissions over the last decade and outlined the initiatives that will result in even greater reductions in the future.[1]

This report provides an updated overview of the company's methane emissions reduction initiatives, including emissions reported for 2018 based on more stringent reporting standards the company adopted voluntarily to go above and beyond the requirements of the U.S. Environmental Protection Agency (EPA).

Methane Emissions and Sources in the U.S.

Methane is a naturally-occurring compound and the primary component of natural gas, which is used to heat about half of all American homes, to generate one-third of the nation's electricity, and to power manufacturing and other industries. When released into the atmosphere from industrial and natural sources, methane – like carbon dioxide – acts as a "greenhouse gas."[2]

There are many sources of methane emissions. Agriculture is the largest source, accounting for approximately 36% of total methane emissions in the United States. The natural gas industry accounts for 25%.[3]

Natural gas is transported across the U.S. through a 3 million-mile underground pipeline system. The natural gas delivery chain starts with production, processing, liquefaction and storage to transmission and local distribution. As natural gas travels through each stage in that chain, small amounts of methane may be released into the atmosphere.

Dominion Energy's natural gas operations span the entire gas delivery chain. There are three primary sources of methane emissions from Dominion Energy's natural gas infrastructure: venting during maintenance and inspections; releases from infrastructure and equipment such as uncoated low-pressure pipes and valves; and small releases from facilities and metering stations.

Methane Emissions from Dominion Energy's Natural Gas System

There are two primary ways Dominion Energy reports methane emissions from its natural gas operations. The first is an intensity or "emission rate."[6] The second is a volume-based inventory of emissions, measured in metric tons.

Emission Rates

The first method Dominion Energy uses for monitoring and reporting is an emission rate, which measures methane emissions as a percentage of the total amount of gas that travels through the Dominion Energy gas delivery chain. **Table 1** provides updated methane emission rates for Dominion Energy's natural gas assets based on the

[1] This Methane Emissions Reduction Report describes operations, activities and methane emissions of Dominion Energy, Inc., and its wholly-owned business units, particularly its Gas Infrastructure Group, focusing on 2018 and historical trends. This report does not address the operations, activities or methane emissions of suppliers, contractors, end users or other consumers, or other facilities or sources that are not operated by the company, nor does it include operations or activities from Southeast Energy Group (formerly PSNC and SCE&G) which was acquired through merger on January 1, 2019.

[2] In the EPA's greenhouse gas reporting rule, it is estimated that, when released to the atmosphere, methane has 25 times the Global Warming Potential (GWP) of carbon dioxide. This GWP was used in estimating the carbon equivalent emissions reported in this report.

[3] Source: EPA's Inventory of US GHG Emissions and Sinks: 1990-2017 (published 2019). The Inventory of U.S. Greenhouse Gas Emissions And Sinks for 2018 is not yet available. https://www.epa.gov/ghgemissions/overview-greenhouse-gases

company's enhanced corporate inventory as discussed below. In 2018, Dominion Energy's methane emissions rate across its entire natural gas infrastructure system was 0.102%. Dominion Energy's system efficiency improved between 2017 and 2018, with an increase in throughput of 41% and a decrease in corresponding methane intensity of 20%.

As shown in **Figure 1** Dominion Energy has reduced its methane emission rate by 15% from estimated 2010 levels to 2018.

Volume-Based Methane Emissions Inventory

The second is a volume-based inventory, measured in metric tons, which the company submits annually to the EPA under the agency's Greenhouse Gas Reporting Program (GHGRP) rule. In 2016, the EPA adopted new requirements under the GHGRP rule requiring companies to report methane emissions from previously unreported sources. **Figure 2** recaps Dominion Energy's EPA-reported methane emissions from 2011 to 2018.

Because the EPA's reporting requirements still exclude emissions from other minor sources, in the interest of transparency Dominion Energy voluntarily adopted its own corporate inventory for tracking and disclosing emissions, using additional equipment not required to be reported under EPA's Subpart W. **Figure 3** shows the company's corporate inventory of methane emissions as compared to the inventory of emissions reported to EPA from 2011 to 2018.

Dominion Energy continues to push for even greater transparency and accountability by integrating new, more representative methods and more comprehensive methane source inventories. Through the company's enhanced corporate inventory, more representative methods were applied to emission calculations in 2017 and 2018, and additional sources were inventoried and reported in 2018 than had been in prior years. As a result of this more inclusive inventory, the company saw an 9% increase between reported values in 2017 and 2018.

Dominion Energy also completed new infrastructure projects in 2018 to serve growing population centers in the northeast, as well as completed several operation and maintenance (O&M) projects to ensure continued safe and reliable operations. For example, the New Market project in upstate New York relieved constraints on natural gas supply serving nearly 102,000 households on a single winter day and replacing the use of fuel oil and other more carbon intensive forms of energy. The addition of new facilities to Dominion Energy Transmission's existing interstate pipeline transmission system from projects such as this will ensure reliable natural gas service. As a result of capital projects and annual maintenance activities, the company calculated a 4% increase in actual methane emissions between 2017

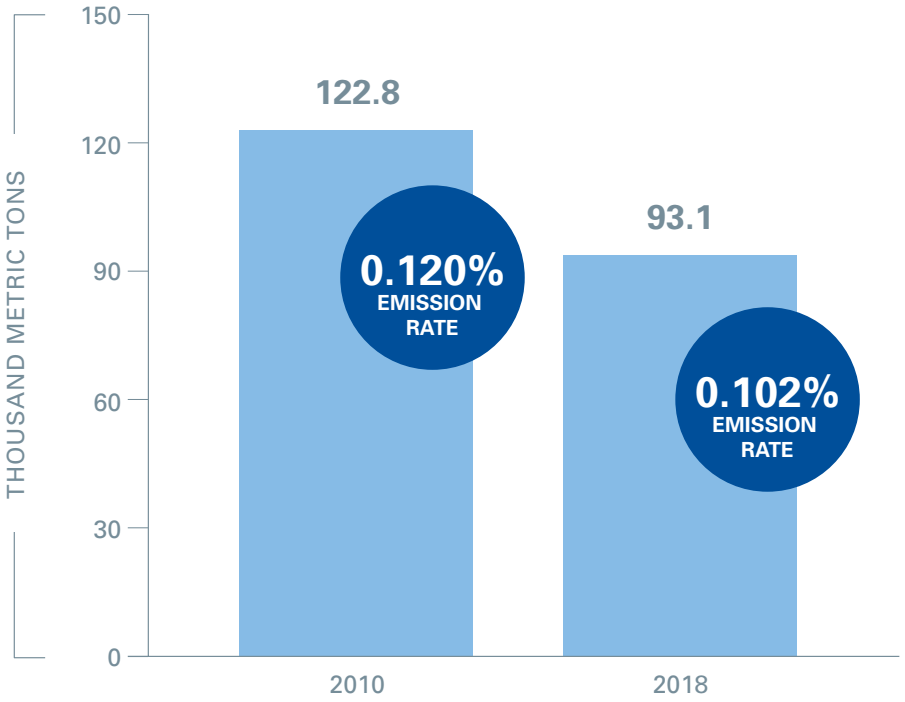
TABLE 1: 2018 Methane Emission Rates from Dominion Energy's Natural Gas Operations (%)

Natural Gas System Segments	Methane Emission Rate
Production	1.68%
Gathering	0.09%
Processing	0.03%
Transmission and Storage	0.05%
LNG Import/Export	0.00%
Distribution	0.29%
Total	0.102%

Note: This data reflects Dominion Energy facilities and emissions calculated using more stringent methodology for corporate inventory reporting. Segments are consistent with EPA GHG Part 98 Subpart W definitions. See Table 3 on page 15 of the Methane Emissions Reduction Report for further detail.

Figure 1 // Methane Emissions from Natural Gas Operations Corporate Inventory

Data for estimated 2010 emissions and 2018 emissions reflect Dominion Energy's more stringent methane inventory.



and 2018.

In total, overall emissions increased by 13% between 2017 and 2018. However, as discussed above, the efficiency of the system improved in terms of methane emissions per unit of output as throughput increased by more than 41%.

The company remains on a clear path toward achieving its goal of a 50% reduction by 2030, over 2010 levels. **Figure 1** provides an update on Dominion Energy's progress towards the 50% reduction goal – Dominion Energy has reduced methane emissions by more than 24% from 2010 levels to 2018.

Methane Reduction at Dominion Energy: Building on Historic Progress

Dominion Energy is at the forefront of the natural gas industry's efforts to curb methane emissions. The company is a founding member or leading participant in landmark methane emissions reduction initiatives, including EPA's Natural Gas (NgSTAR) Program, EPA's Methane Challenge, and the ONE Future Coalition.

By participating in these voluntary initiatives and by changing its operating procedures, Dominion Energy has made significant progress lowering methane emissions over the last decade. These emissions reductions have saved more than 13 billion cubic feet of gas and prevented more than 250,000 metric tons of methane from entering the atmosphere. That's equivalent to taking almost 1.3 million non-electric cars off the road for a year, or planting 103 million new trees.

Building on the substantial progress we've made, Dominion Energy launched an industry-leading initiative in early 2019. This initiative together with the company's past efforts, will prevent more than 600,000 metric tons of methane from entering the atmosphere. There are three primary ways the company will achieve these reduction targets:

Reducing or eliminating gas venting during planned maintenance and inspections

Gas venting during planned maintenance and inspections is one of the largest sources of methane emissions from

Figure 2 // Methane Emissions from Natural Gas Operations as reported by Dominion Energy to EPA

Data for 2016 through 2018 reflect Dominion Energy's addition of operating segments to the EPA Greenhouse Reporting Program (GHGRP), as well as 4% increase in emissions from 2017 to 2018 due to additional pipeline service as discussed herein.

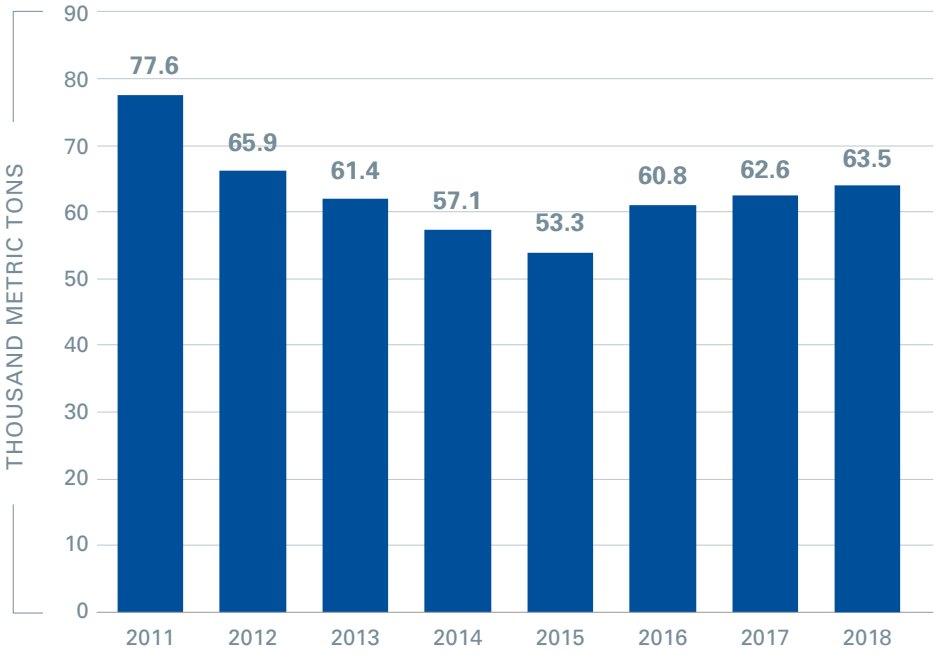
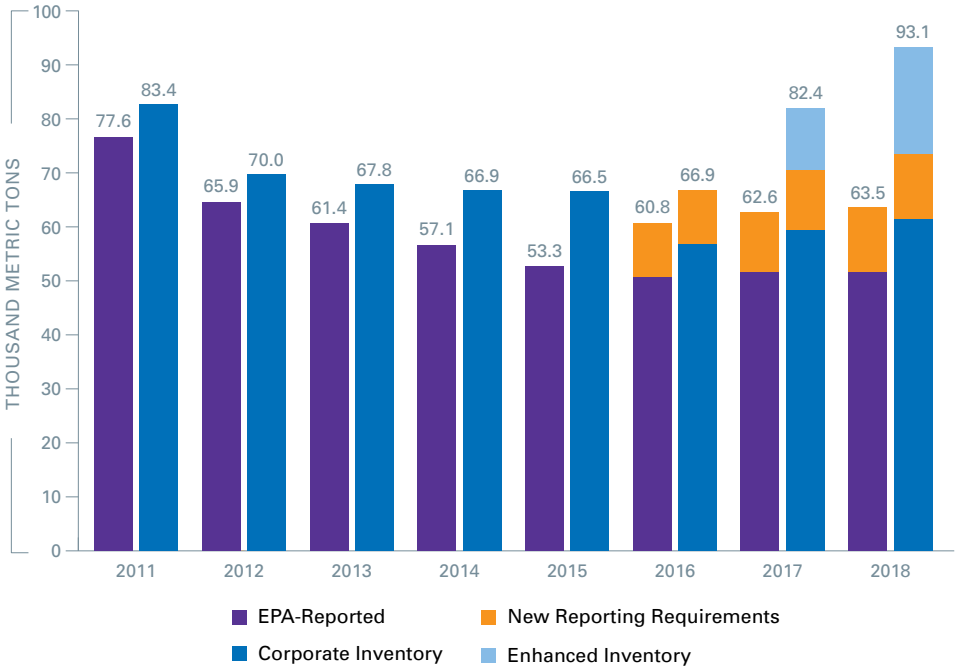


Figure 3 // Dominion Energy Methane: EPA Reported vs. Corporate Inventory 2011-2018 (thousand metric tons)



Dominion Energy's natural gas system. To perform this work, natural gas sometimes has to be removed from the system, which was historically done by venting it into the atmosphere. Instead of venting, the company is now using pressure reduction protocols and innovative equipment to limit, capture, recycle and reuse gas where feasible.

Replacing targeted infrastructure and equipment with new, lower-emission equipment

While gas venting is one of the largest sources of methane emissions, other minor sources can add up to larger volumes. The company is reducing these emissions by replacing equipment such as bare-steel pipe, pneumatics, valves and fittings with new lower-emission equipment.

Expanding leak detection and repair programs

Other minor methane emissions can be hard to detect. Over the last decade, Dominion Energy has implemented tools and techniques, such as the use of infrared cameras, to identify such minor emission sources. The company is now expanding these programs across every part of its system — from production, processing and storage to transmission and distribution.

Reducing Methane Emissions from Agriculture: Renewable Natural Gas

In addition to lowering emissions from its own infrastructure, Dominion Energy is partnering with the nation's largest pork and dairy producers to curb methane emissions from the agriculture industry.

In late 2018, Dominion Energy joined forces with Smithfield Foods to form the largest agriculture-based renewable natural gas (RNG) partnership in the U.S. Originally announced as a $250 million joint venture, Align RNG® will capture waste methane from Smithfield's hog farms and convert it into clean renewable energy to heat homes and power local businesses. In October 2019, Dominion Energy and Smithfield Foods announced the companies would double their investment in the partnership, committing $500 million over 10 years to expand hog-based RNG projects across the country.

Building on the success and experience of its joint venture with Smithfield, in December 2019 Dominion Energy partnered with Vanguard Renewables to form the first nationwide dairy-based RNG venture in the U.S. In partnership with Vanguard and the Dairy Farmers of America, Dominion Energy committed $200 million over 5 years to capture waste methane from U.S. dairy farms and convert it into clean energy.

Once completed over the next 10 years, Dominion Energy's renewable natural gas ventures with Smithfield Foods and Vanguard Renewables will reduce U.S. agricultural methane emissions by more than 123,000 metric tons each year, the equivalent of taking more than 650,000 non-electric cars off the road or planting 50 million new trees.

In addition to these industry-leading agricultural methane capture initiatives, Dominion Energy is also working with landfill operators and food waste facilities across the country to bring more RNG onto its own system and provide its utility customers with more sustainable choices. The company aims to meet 4% of its gas distribution customers' needs with RNG by 2040.

Pipeline Safety and Methane Emissions Reduction

Dominion Energy's pipeline safety and methane emissions reduction programs work hand in hand. When natural gas infrastructure is monitored closely and operated safely, it releases less methane to the atmosphere. In fact, many of the company's methane emissions reduction initiatives originally stem from pipeline safety and integrity programs, including programs for pipeline and equipment replacement, storage well inspection and interior pipe inspection. Since 2008, Dominion Energy has replaced 1,800 miles of bare-steel or cast-iron pipe across its distribution system and plans to replace over 5,500 miles in total. At the same time, the company is expanding its storage well casing inspection program and plans to complete inspections on all 2,300 of its wells by 2025. The goal of these programs is simple, but extremely important: continuously improve the safety of communities and build a more sustainable future.

Myersville Compressor Station in Frederick County, Maryland

Dominion Energy Methane Emissions Reduction Report

Dominion Energy is among the nation's premier energy delivery companies. Nearly 7.5 million customers in 18 states energize their homes and businesses with electricity or natural gas from Dominion Energy, which is headquartered in Richmond, Virginia. The company is committed to sustainable, reliable, affordable and safe energy. It is one of the nation's largest producers and transporters of energy with about $100 billion of assets providing electric generation, transmission and distribution, as well as natural gas storage, transmission, distribution, and liquefaction import/export services. As one of the nation's leading solar operators, the company intends to reduce its carbon emissions by 55 percent by 2030.

Dominion Energy is transforming the way the company does business to build a more sustainable future. Substantial reductions in greenhouse gas emissions are at the core of this transformation and are a high priority for the company.

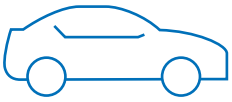
This report provides a comprehensive overview of the sources, amounts and reductions of methane emissions across Dominion Energy's natural gas businesses. It describes actions that have reduced the company's methane emissions over the last decade and outlines initiatives that will result in even greater reductions in the future.[1]

Dominion Energy's methane reductions have prevented more than

250,000 MT

(metric tons) of methane from entering the atmosphere since 2010

the equivalent of taking almost



1.3 million

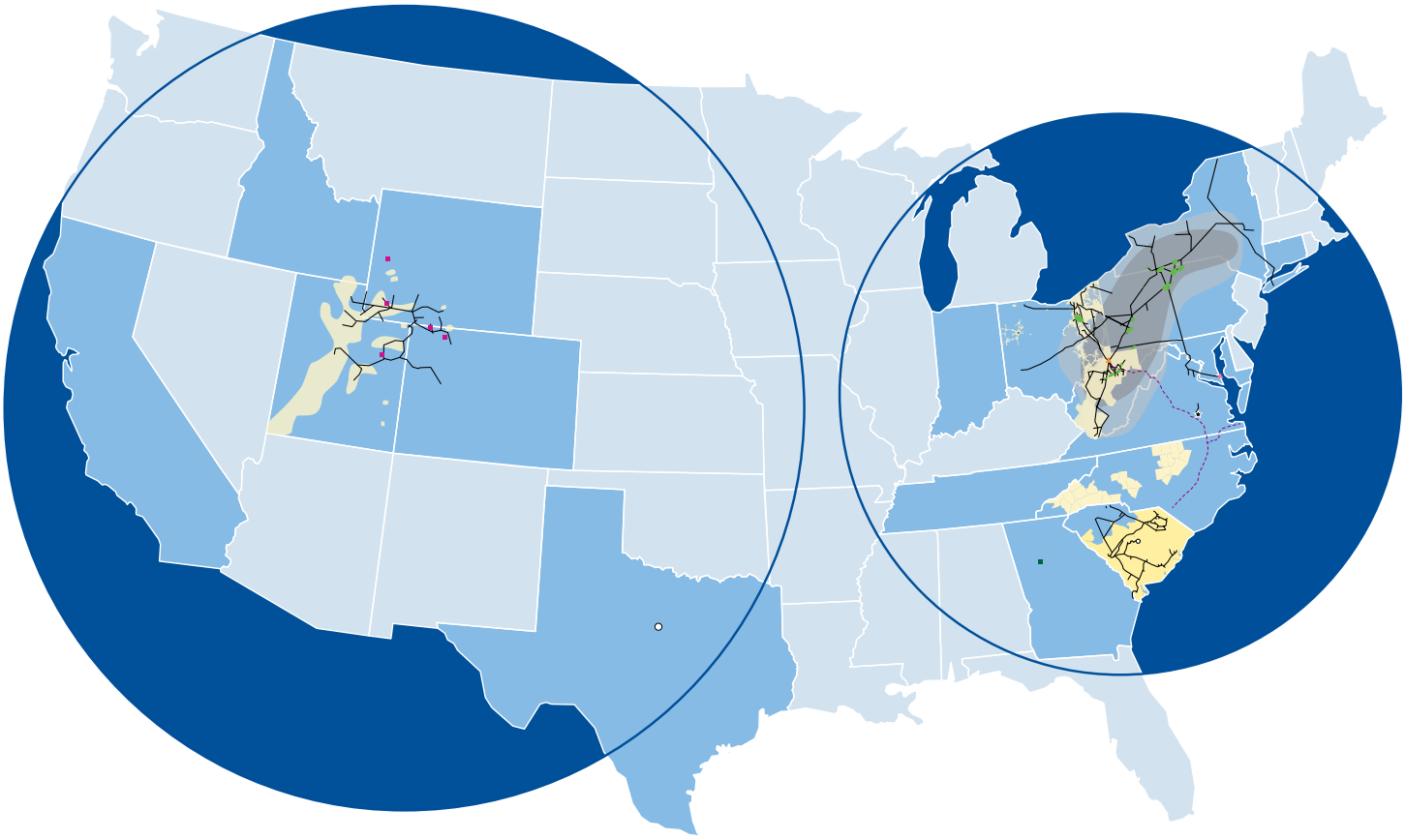
non-EV cars off the road for a year

or planting

103 million

new trees.

Figure 4 // Dominion Energy's Natural Gas Operations



Dominion Energy's Natural Gas Operations

Dominion Energy's natural gas business operations span the entire natural gas delivery chain – from production, processing, liquefaction and storage to transmission and local distribution. Dominion Energy is the second largest operator of natural gas storage infrastructure in the country.

In 2018, the company produced and processed natural gas in five states. It operated more than 65,000 miles of natural gas gathering, transmission, storage and distribution pipelines across 16 states, as well as the only liquefied natural gas import and export terminal on the East Coast.[1]

Through three local distribution companies, in 2018 Dominion Energy provided regulated retail natural gas service to 2.3 million homes and businesses across 5 states, including Ohio, West Virginia, Utah, Wyoming and Idaho.[1]

In sum, Dominion Energy's natural gas businesses provide energy to safely and reliably heat the homes and power the businesses of millions of Americans, and millions more overseas.

Understanding Methane Emissions and Sources

Methane Emissions in the U.S.

In the United States, methane emissions comprise approximately 10% of all greenhouse gas emissions. As illustrated in **Figure 5**, Agriculture is the country's largest source, accounting for approximately 36% of methane emissions. These come mostly from manure and the natural digestive process of livestock. The natural gas industry contributes approximately 25% of U.S. methane emissions, or about 2.5% of the national total of carbon dioxide equivalent (CO_2e).[3] The remaining methane emissions come from landfills, coal mining and petroleum systems, and other sources such as wetlands, composting and wastewater treatment.

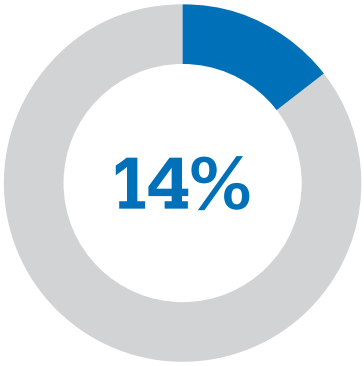
Greenhouse gas emissions from the company's natural gas business accounted for 14% of Dominion Energy's total carbon equivalent emissions in 2018.[4]

For more information about Dominion Energy's efforts to provide cleaner generation ▶

Figure 5 // U.S. Methane Emissions by Source

Source: USEPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016, EPA 430-RP-187-0031 (MMT- Million metric tons)

Greenhouse gas emissions from the company's natural gas business accounted for 14% of Dominion Energy's total carbon equivalent emissions in 2018.



2018 Dominion Energy CO_2e Emissions

- 14% Natural Gas
- 86% Electric Generation

Methane Emissions in Dominion Energy's Natural Gas System

Methane is the primary component of natural gas, which is used to heat half of all American homes, generate one-third of the nation's electricity, and power manufacturing and other industries. Natural gas is transported to power plants, homes and businesses across the U.S. through a 3 million-mile national underground pipeline system.

As natural gas travels through each stage in the supply chain – from production, gathering, processing and storage to transmission and distribution to end-users – small amounts of methane may be released from the system and into the atmosphere.

The primary sources of methane emissions from Dominion Energy's natural gas system are: 1) gas venting from maintenance and inspection activity; 2) minor releases from targeted infrastructure and equipment such as uncoated vintage pipe, valves and fittings; and, 3) small releases from facilities and metering and regulation stations. Each of these emission sources is subject to a variety of state and federal regulations, and Dominion Energy maintains programs to ensure strict compliance.

Figure 6 provides a breakdown of methane emissions from Dominion Energy's natural gas value chain.

Production

Natural gas is created from the decomposition of organic material. Whether from plant or animal sources, this biological process yields methane and other hydrocarbons. Over the course of millennia, these efficient-burning hydrocarbons were deposited deep in layers under the earth's surface.

[4] Total carbon equivalent (CO_2e) emissions from Dominion Energy includes carbon, methane, and other greenhouse gases.

When natural gas is produced from underground geologic formations, the methane may be accompanied by other volatile organic compounds. These compounds are strictly regulated as air pollutants, so controls on these emissions also serve to significantly reduce the methane emissions associated with production. Through compliance with these strict regulations, Dominion Energy also minimizes releases of methane to the atmosphere.

Gathering & Processing

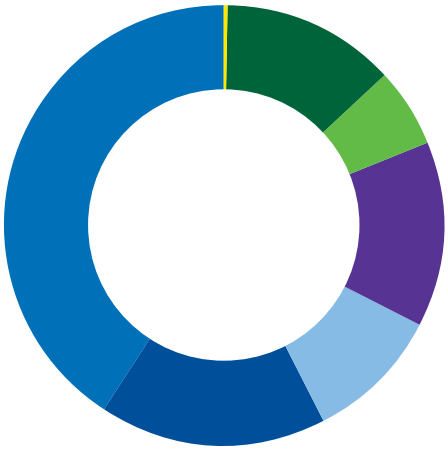
After the gas is extracted from the ground, gathering facilities take the gas through a network of small pipes. Small compressor stations boost line pressure to move the gas along, and hydrocarbon liquids may be removed by filter until the gas reaches a processing or transmission facility. The processing facility will further refine the gas and extract useful liquid by-products, such as propane or butane. Sources of methane emissions along the gathering and boosting system include possible releases from equipment used in liquids handling, dehydration, compressor vents, and pipeline components such as valves and flanges. Other methane emissions sources include extraction columns, transfer equipment, flares, piping, and tank storage. The company employs Leak Detection and Repair programs at Gathering, as well as Processing facilities to ensure that leaks are identified and mitigated promptly to minimize emissions.

Liquefaction

When cooled, methane moves from a gaseous to a liquid form, which occupies substantially lower volume for the same energy content. Natural gas can be liquefied for efficient storage along the transportation and distribution system, or for delivery utilizing specialized ships. Dominion Energy's Cove Point liquefied natural gas (LNG) facility in Calvert County, Maryland, has been importing natural gas by ship for decades and began exporting natural gas in 2018. Sources of methane emissions at LNG facilities may include emissions from various connections, maintenance activities, and emergency process control.

Figure 6 // Dominion Energy 2018 Methane Emissions by Segment %

- **0.3%** Processing
- **0.1%** LNG Import/Export
- **12.1%** Storage
- **5.8%** Gathering and Boosting
- **13.9%** Transmission Compressor Stations
- **9.9%** Transmission Pipelines
- **17%** Production
- **40.9%** Distribution



Dominion Energy technician performing cathodic protection monitoring.

An extensive flaring system and comprehensive Leak Detection and Repair program at Cove Point prevents methane from venting into the atmosphere, in the unusual event of a release. In addition to annual GHGRP surveys required by the EPA, Cove Point conducts a state-of-the-art leak detection and repair program.

Transmission & Compression

Compressor stations are utilized both in conjunction with underground storage facilities and spaced periodically along transmission pipelines to efficiently keep it moving through the system. The primary source of methane emissions from compressor stations is the gas venting that occurs prior to maintenance or inspections. In order to perform maintenance or inspection on compressor stations, natural gas sometimes has to be removed from the system, which was historically done by venting it into the atmosphere. Best management practices have been implemented to reduce these emissions.

In addition, many compressor stations are subject to methane regulatory requirements, including state air permits, which involves Leak Detection and Repair. These permits contain requirements to minimize methane emissions. Approximately one quarter of Dominion Energy's compressor stations are subject to the GHGRP and conduct annual leak surveys.

Storage

Natural gas storage operations are a key component of the Dominion Energy delivery chain, providing reliable and flexible service to customers. This large-scale 'battery' also facilitates the development of power from intermittent renewable sources, while preserving the dependable energy that consumers expect. Dominion Energy operates 1.062 trillion cubic feet (Tcf) of natural gas storage, in both the Eastern and Western United States. The general locations of these storage assets are shown on page 9, **Figure 4**.

Emissions controls and safety procedures surrounding natural gas storage operations have received heightened scrutiny and increased regulation in recent years. Dominion Energy stands at the forefront of compliance with those regulations. The locations of the company's storage operations are provided in Appendix A.

Under normal operations, methane emissions from Dominion Energy's underground storage wellheads account for less than 3% of the company's natural gas business total methane emissions. The sources of all methane emissions from Dominion Energy's underground storage facilities are displayed in **Table 2**. Starting in 2019, the company began employing a voluntary Leak Detection and Repair program at storage wellheads to ensure that leaks are identified and mitigated promptly to minimize emissions.

Distribution

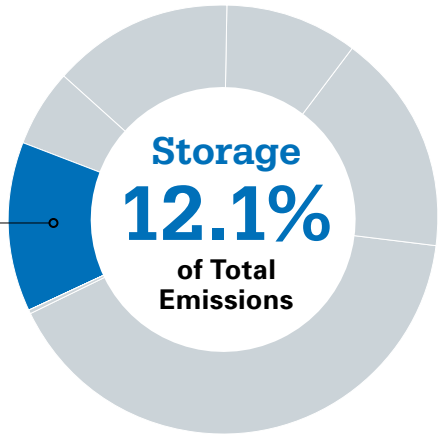
The distribution system delivers natural gas to end-use customers, including homes, commercial businesses and industries. Sources of methane along this vast network of small pipes and service lines consist mainly of metering and regulating stations and other piping components. The GHGRP requires annual leak surveys at a portion of these facilities.

Electric Generation

In addition to methane emissions from Dominion Energy's natural gas system, a small amount of methane emissions is emitted by the company's electric generation operations. Combustion methane emissions from Dominion Energy's electric power generation totaled 1,823 metric tons in 2018. To put this figure in perspective, the electric generation amount is less than 4% of the methane emissions inventory for Dominion Energy's natural gas businesses in that same year. Given the natural gas business focus of this Methane Emissions Reduction Report, all other data compiled in this report excludes Dominion Energy's limited electric generation methane emissions.

TABLE 2: Sources of all methane emissions from Dominion Energy's facilities supporting underground natural gas storage.

Storage Facility Emission Source	Corporate Inventory (Metric Tons)	EPA Reported (Metric Tons)	Total Emission Percent
Storage Field Wellheads	2012	198	2.2%
Compressor Station Pneumatic Devices	255	37	0.3%
Compressor Station Venting	1902		2.0%
Compressor Station Compressors	2362	425	2.5%
Compressor Station Fugitive Leaks	1207	495	1.3%
Compressor Station Storage Tanks	62		0.1%
Compressor Station Fuel Combustion	2283	3	2.5%
Compressor Station Dehydrators	1159		1.2%
		TOTAL	12.1%



How Methane Emissions Are Reported

There are two primary ways Dominion Energy reports methane emissions from its natural gas operations. The first is an intensity or "emission rate" and the second is a volume-based inventory of emissions, measured in metric tons.

Emission Rate-Based Reporting

The first method Dominion Energy uses for monitoring and reporting is an emission rate, which measures methane emissions as a percentage of the total amount of gas that travels through the Dominion Energy gas delivery chain. Dominion Energy voluntarily discloses methane emission rates through its participation in the ONE Future Coalition. In addition to the company's participation in the ONE Future Coalition, Dominion Energy has calculated methane emission rates from its natural gas system based on a more stringent enhanced inventory. Table 3 provides the updated emission rates for natural gas assets based on the company's enhanced emission inventory. In 2018, Dominion Energy's methane emissions rate across its entire natural gas infrastructure system was 0.102%. Dominion Energy's system efficiency improved between 2017 and 2018 with an increase in throughput of 41% and a decrease in corresponding methane intensity of 20%.

Benefits of Methane Intensity as a Standardized Approach for Industry Benchmarking

To evaluate the real and evolving efficiency of natural gas infrastructure, stakeholders need a consistent method for determining and reporting natural gas emissions. Developing an emission rate calculation that compares performance among companies is complicated. The natural gas grid is robust and flexible, so the methodology must account for the movement of gas through various chains, from wellhead to delivery to the customer. For example, gas may be produced (and reported) by one company, then stored, then transported by another and finally distributed to consumers by still another. In this case, the "throughput" of the same natural gas could be reported four times by several different companies.

Despite the challenges that the intensity calculation presents, intensity is becoming a preferred approach for communicating methane emissions

TABLE 3: Emission rates from every part of Dominion Energy's natural gas operations in 2018

Natural Gas System Segment	Total Corporate Inventory Methane Emissions (mcf CH_4) (numerator)	Total Gas Throughput (mcf CH_4)(denominator)	Methane Emission Rate %
Production	823,542	49,100,573	1.677%
Gathering & Boosting	282,969	304,386,042	0.093%
Processing	13,125	44,549,740	0.029%
Transmission and Storage	1,738,125	3,525,720,990	0.049%
LNG Import/Export	5,260	142,248,490	0.004%
Distribution	1,984,219	686,168,698	0.289%
Total	**4,847,240**	**4,752,174,533**	**0.102%**

Note: This data reflects Dominion Energy facilities and emissions calculated using more stringent methodology for corporate inventory reporting. Segments are consistent with EPA GHG Part 98 Subpart W definitions. Values reported are based on measurements of standard cubic feet of methane. Throughput calculated following ONE Future Coalition Protocol.

across the natural gas value chain because it normalizes year to year fluctuations not related to emissions (such as a change in assets) and can be used to track performance over time and between similar businesses. As such, stakeholders are increasingly interested in learning more about performance based on emissions intensity. While more natural gas companies, including Dominion Energy and ONE Future Coalition members, are reporting emissions intensity, there is no industrywide accepted standard for calculating intensity metrics. As a member of the ONE Future Coalition, Dominion Energy is working with its peers to develop and improve the methane emission rate and reporting standard to ensure clarity and consistent results. In addition, in 2018, Dominion Energy began working with the Natural Gas Sustainability Initiative (NGSI) which seeks to establish a clear and consistent approach to using methane emissions and natural gas throughput to calculate methane emissions intensity. Through these initiatives and coalitions, Dominion Energy is advocating for the industrywide methodology to include the more stringent enhanced inventory.

Volume-Based Inventory & Reporting

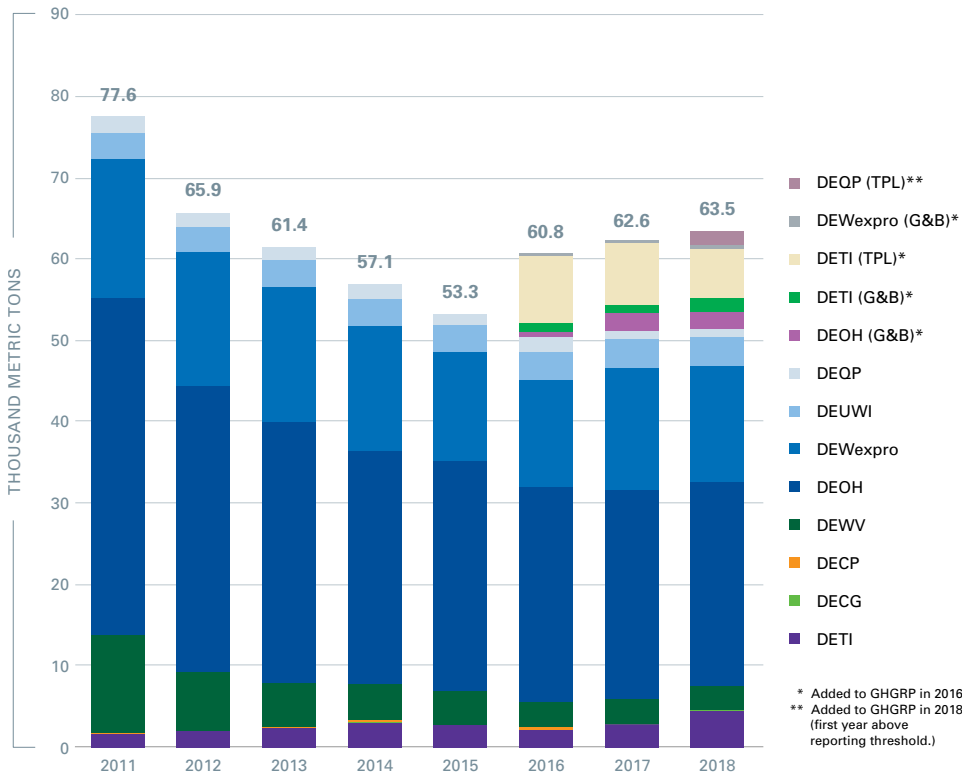
The second is a volume-based inventory, measured in metric tons, which the company submits annually to the EPA under the agency's GHGRP. In 2016, the EPA adopted new requirements under the GHGRP rule requiring companies to report methane emissions from previously unreported sources. **Figure 7** recaps Dominion Energy's EPA-reported methane emissions from 2011 to 2018 by subsidiary.

How Dominion Energy's Inventory Compares to the EPA's Inventory

Because the EPA's GHGRP rule sets boundaries for reporting, Dominion Energy is not required to report methane emissions from a number of the company's smaller compressor stations and other sources. However, in the interest of transparency and to hold the company to a higher standard of accountability, Dominion Energy voluntarily includes emission estimates

Figure 7 // Methane Emissions Reported to EPA by Subsidiary

Additional information on the emissions reported to the EPA under the GHGRP, including station-by-station information, can be found at: https://ghgdata.epa.gov/ghgp/main.do.https://ghgdata.epa.gov/ghgp/main.do.



from these smaller methane sources in its corporate methane inventory. **Figure 8** shows the company's corporate inventory of methane emissions as compared to the inventory of emissions reported to EPA for 2018.

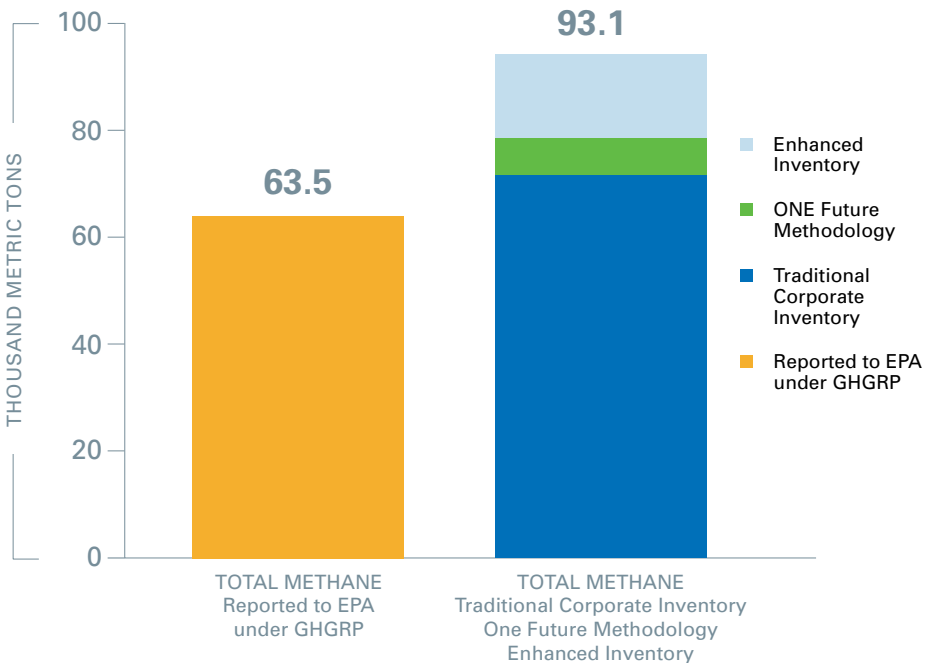
Dominion Energy continues to push for even greater transparency and accountability by integrating new, more representative methods and more comprehensive methane source inventories. In 2018, the company conducted a comprehensive review of its emissions tracking and reporting processes to find opportunities for improvement and to ensure that the inventory is all-encompassing across the delivery chain. The company looked for potential gaps in included or unrepresentative emissions factors used for estimating emissions. For example, Dominion Energy considered whether on-site sampling or updated factors would be more consistent with industry protocols, such as the ONE Future Coalition Protocol. Through the company's enhanced corporate inventory, more representative methods were applied to emission calculations in 2017 and 2018, and additional sources were inventoried and reported in 2018 than had been in prior years. As a result of this more inclusive inventory, the company saw a 9% increase between reported values in 2017 and 2018 as shown on page 5, **Figure 1**.

Furthermore, Dominion Energy also completed new infrastructure projects in 2018 to serve growing population centers in the northeast, as well as completed several operation and maintenance (O&M) projects to ensure continued safe and reliable operations. For example, the New Market project in upstate New York relieved constraints on natural gas supply serving nearly 102,000 households on a single winter day and replacing the use of fuel oil and other more carbon intensive forms of energy. The addition of new facilities to Dominion Energy

Transmission's existing interstate pipeline transmission system from projects such as this will ensure reliable natural gas service. As a result of capital projects and annual maintenance activities, the company calculated a 4% increase in actual methane emissions between 2017 and 2018.

In total, overall volumetric emissions increased by 13% between 2017 and 2018. Although reported emissions increased in 2018, the company remains on a clear path toward achieving its goal of a 50% reduction by 2030, over 2010 levels.

Figure 8 // Dominion Energy Methane: EPA-Reported vs. Corporate Inventory for 2018 (thousand metric tons)



Cove Point, a liquefied natural gas facility in Maryland.

Historic Progress: Dominion Energy's Methane Emission Reduction Initiatives

Dominion Energy is at the forefront of the natural gas industry's efforts to curb methane emissions. The company has been a founding member or leading participant in several landmark methane emissions reduction initiatives, including the EPA's NgSTAR Program, the EPA's Methane Challenge Program, and the ONE Future Coalition. In addition, the company has fostered a culture of innovation that empowers employees to design and implement creative ways to reduce methane emissions from operations.

Through the company's participation in these voluntary initiatives and changes to the company's operating procedures, over the last decade Dominion Energy substantially reduced methane emissions from its natural gas infrastructure, saving more than 13 billion cubic feet of gas and preventing more than 250,000 metric tons of methane from entering the atmosphere. That's equivalent to taking almost 1.3 million non-electric cars off the road for a year or planting 103 million new trees.

Natural Gas STAR Program

The EPA's NgSTAR Program has provided a platform where proactive and progressive natural gas companies can voluntarily report methane emissions reduction from their operations through implementation of best management practices. Dominion Energy subsidiaries began participating as early as 2011, submitting historical emissions reductions back to 2008.

Through its participation in the EPA's NgSTAR Program, Dominion Energy achieved cumulative methane emissions reductions of 9.42 billion cubic feet (bcf) through 2018, preventing more than 142,000 metric tons of methane from being released into the atmosphere. These emissions reductions are equivalent to preventing more than 3.4 million metric tons of CO2 from entering the atmosphere. As of 2018, all eligible Dominion Energy natural gas businesses have joined as members of the NgSTAR Program.[1]

Methane Challenge Program

Through the EPA's Methane Challenge Program, natural gas companies voluntarily commit to implement best management practices and report their annual progress in reducing methane. Dominion Energy took a leadership role as a founding member of EPA's Methane Challenge Program in 2016. Three Dominion Energy companies collaborated with EPA as pilot companies and began disclosing results prior to the reporting deadline. Additional commitments have been implemented by Dominion Energy companies since the initial pilot. As of 2018, all eligible Dominion Energy natural gas businesses are now partners of the EPA Methane Challenge Program.[1]

ONE Future Coalition

In 2018, Dominion Energy's Gas Infrastructure Group joined the ONE Future Coalition, an industry-led partnership that is driving toward a collective goal of reducing the industry's methane emissions rate or intensity to less than 1% by 2025. Dominion Energy participated in the November 2019 Progress Report, which reported that ONE Future members achieved a 2018 methane emission rate of 0.326%.

Defining Methane Emissions Reduction, Gas Savings and Avoided Gas Loss

The best management practices, or BMPs, implemented by the NgSTAR Program participants do not 'reduce' methane emissions in the same way that air emission control technologies reduce emissions from a stack. For example, when a wet scrubber is installed on a coal-fired power station, the percentage reduction in sulfur dioxide emissions can be calculated from measurements taken before and after the installation of the control device. When referring to natural gas fugitive emissions, a BMP results in 'avoided' or 'reduced' gas loss from releases prior to maintenance. Since real-time methane emissions are not measured directly, emissions reductions are better described as estimated 'gas savings' or 'avoided gas loss.' These terms are often used interchangeably with 'methane emissions reductions.' In each case, for every million cubic feet of gas that is not released to the atmosphere, approximately 18-19 metric tons of methane are not emitted.

Lost and Unaccounted for Gas

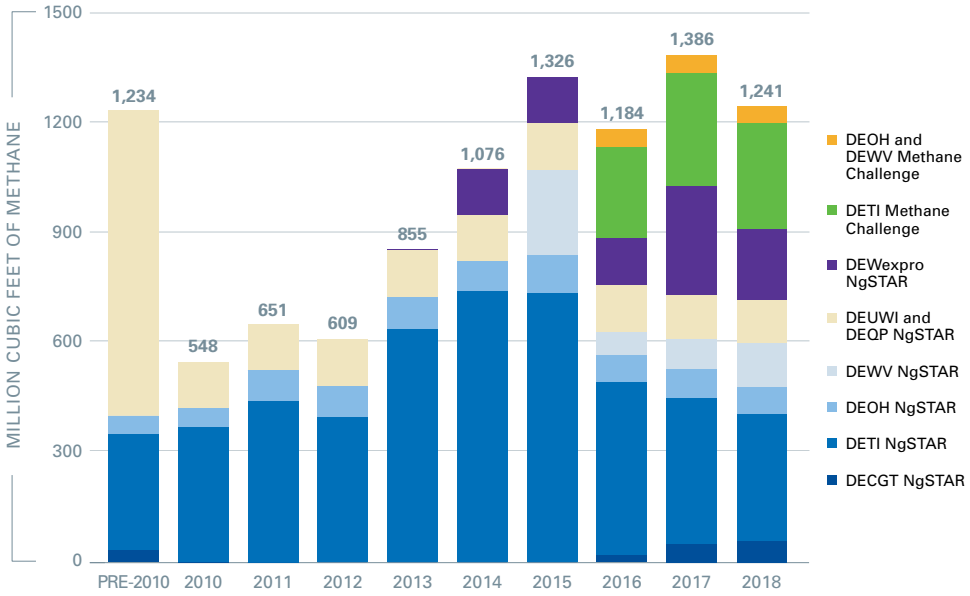
For years, Dominion Energy has focused on reducing rates of lost and unaccounted for gas. To identify these losses, the company measures gas exiting the pipeline system, along with gas used as fuel in operations, and calculates volumes of gas released during operations (from purges, emergency shut downs, and other activities). Those volumes are subtracted from the amount of gas entering the pipeline system, and the difference is referred to as 'unaccounted-for' gas. It can be caused by measurement uncertainty, theft, reporting errors, equipment malfunction, or unmeasured activities. Both gas losses and 'unaccounted-for' volumes are an expense for the pipeline and its shippers.

Dominion Energy monitors its infrastructure carefully to identify and remediate losses from the transmission pipeline system. The system is segregated into zones and gas is measured in and out of each zone to monitor flows daily. The process allows Dominion Energy to identify losses on the system faster and to remediate them promptly. By addressing indications of gas loss, and putting systems in place to track releases of gas during operations, Dominion Energy has been able to reduce the loss rate across its pipeline and gathering operations.

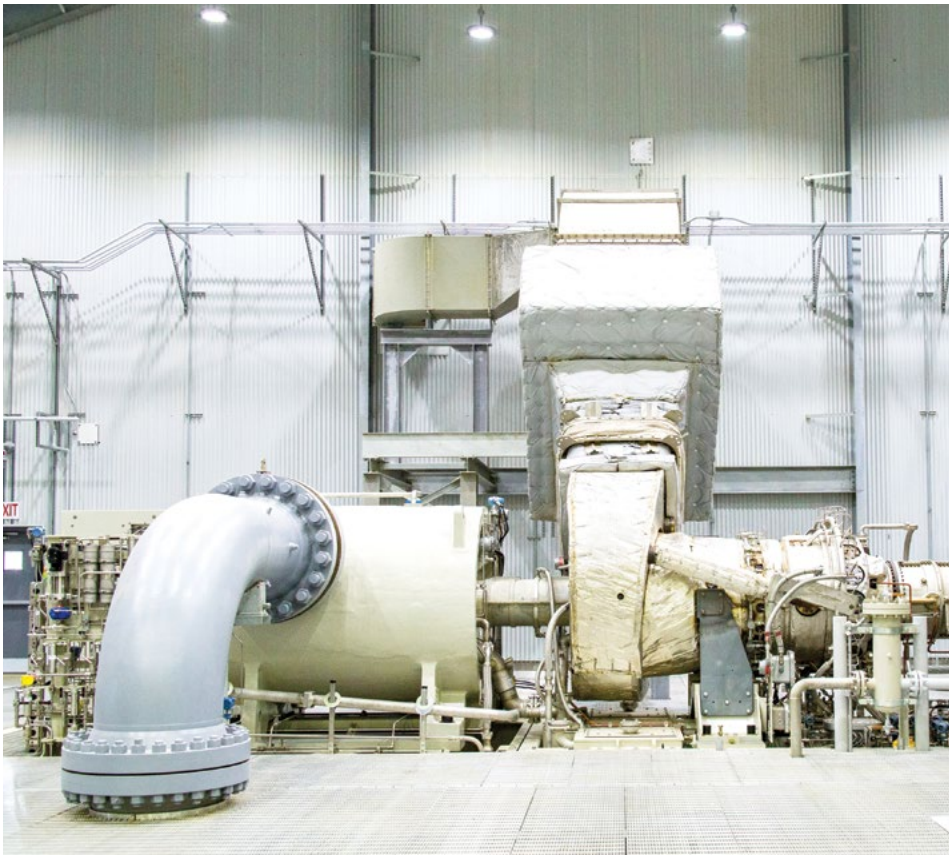
Natural Gas STAR and Methane Challenge Methane Reductions by Business Unit

Figure 9 shows annual methane emissions reduction credits calculated under the NgSTAR and Methane Challenge Programs for various Dominion Energy natural gas businesses.

Figure 9 // Methane Reductions Achieved Through EPA NgSTAR and Methane Challenge



A turbine engine at Myersville Compressor Station in Myersville, M.D. provides the pressure needed to keep gas moving through the pipeline system.



The Future of Methane Emissions Reduction at Dominion Energy

Building on the substantial progress we've made, Dominion Energy launched an industry-leading initiative in early 2019 to reduce methane emissions by 50% across the company's entire natural gas infrastructure system by 2030, over 2010 levels. This initiative together with the company's efforts over the last decade, will prevent more than 600,000 metric tons of methane from entering the atmosphere, the equivalent of taking 3.3 million non-electric cars off the road for a year or planting nearly 250 million new trees.

The company is achieving these goals primarily by:

- **Reducing or eliminating gas venting** during planned maintenance and inspections
- **Replacing targeted infrastructure and equipment** with new, lower-emission equipment
- **Expanding leak detection and repair** programs

Reducing or eliminating venting during planned maintenance and inspection

Gas venting during planned maintenance and inspections is one of the largest sources of methane emissions from Dominion Energy's transmission and distribution pipelines. In order to perform maintenance or an inspection, natural gas sometimes has to be removed from the system, which was historically done by venting it into the atmosphere. A primary focus of the company's initiative will be to reduce or eliminate venting during maintenance activities. There are three primary ways the company will achieve this:

- **Reducing pressure and capturing gas prior to maintenance or inspection,** by using portable compression to pump captured methane to other parts of the system.
- **Recycling gas from compressors** that are being taken offline, and then feeding the recycled gas into on-site low pressure fuel systems to power other facility operations.
- **Reducing the frequency of venting** by upgrading compressor engine controls so they remain pressurized when idled.

One innovative example is the company's use of Zero Emissions Vacuum and Compression (ZEVAC®) technology to capture methane before maintenance or inspection so it can be recycled for use. After piloting the technology on a limited scale, Dominion Energy recently purchased 20 ZEVAC® units from TPE Midstream for widespread use across its distribution and transmission pipeline systems.

The company is adopting additional programs and operational procedures to reduce or eliminate maintenance- and inspection-related venting. For example:

- For new construction, designing isolation valves as close to compressor stations as possible to reduce emissions during venting or releases;
- Installing a large volume, lower pressure header to recover gas that would otherwise be vented prior to maintenance activities and that can be used as fuel where sufficient fuel burning sources are installed;
- Installing valve enclosures to reduce emissions during emergency shutdown testing;
- Injecting compressor vented gas into low pressure mains or fuel gas system; and
- Using capped emergency shutdown testing at compressor stations.

Replacing targeted infrastructure and equipment with new, lower-emission equipment

There are other minor sources of methane emissions across all natural gas infrastructure that can add up to larger volumes. Dominion Energy is focused on reducing minor sources by replacing certain components with lower-emission equipment.

For example, Dominion Energy is replacing natural gas-powered pumps at its gas producing wells with solar-powered electric pumps. This equipment reduces methane emissions at these facilities by more than 90%.

The company is replacing other relatively high-emitting equipment across the natural gas supply chain, including bare-steel pipe, cast-iron pipe, valves, and fittings to reduce or eliminate other emission sources. There are additional examples:

- Using pneumatic controllers that are air-activated when station air is available as opposed to natural gas-activated or continuous-bleed

devices;

- Implementing Green Completion[5] technology on completed and recompleted wells;
- Replacing high-bleed pneumatic devices with low- or no-bleed devices such as thermal electric generators;
- Replacing orifice meters with ultrasonic meters; and
- Installing compressed air (as opposed to natural gas) compressor engine start systems.

Expanding leak detection and repair programs

Even after reducing emissions from gas venting and targeted equipment, there are still other minor leaks that are often the hardest to detect. Over the last decade, Dominion Energy has made significant progress by implementing voluntary and required programs, including the use of infrared cameras, to detect and repair these minor emissions sources. With the new initiative launched earlier this year, the company dramatically expanded its voluntary leak detection and repair program to reach every part of its system, including:

- Compressor stations in gathering, transmission, and storage operations,
- Storage and production wellheads,
- Metering and regulating stations,
- Distribution outdoor customer meters.

In addition to the voluntary program discussed above, Dominion Energy natural gas facilities and operations are also subject to mandatory leak detection programs required by federal or state regulations as outlined in **Table 4**.

Best Management Practice Results

Below is a description of the most successful BMPs implemented by Dominion Energy under the NgSTAR Program and the emissions reductions achieved in 2018. Copies of the full reports showing methane emissions reductions and cumulative credits attributed to Dominion Energy for each NgSTAR Report are included in Appendix B.

Directed Inspections and Maintenance

This technique is a more cost-effective approach to identifying and fixing leaks than the traditional, reactive leak detection and repair program. Dominion Energy Transmission conducts biannual surveys, called Atmospheric Gas Loss Surveys, of the sources most likely to leak based on the type of source and fixes them. This BMP has resulted in 1,616 thousand cubic feet (MCF) of natural gas or 29 metric tons (MT) of methane emissions reductions in the gas transmission business. Dominion Energy Carolina Gas Transmission reduced 36,290 MCF of gas or 662 MT of methane in 2018 through directed inspections. At its local distribution companies, Dominion Energy West Virginia and Dominion Energy Ohio, directed inspections and maintenance at city gate delivery[6] stations and surface facilities has resulted in 125,107 MCF of natural gas avoided loss or 2,282 MT of methane emissions reductions and 22,547 MCF of natural gas avoided loss or 411 MT of methane emissions reductions, respectively.

Compressor Venting Recovery

In this technique, natural gas vented from compressors is captured and re-routed for use with other combustion sources, including engines and turbines at the facility. This technique reduced 109,144 MCF of gas, or 1,991 MT of methane emissions in 2018. Several more stations are being considered for similar modifications. This technique works best when other design changes are being planned at the facility or during design of new facilities.

Reducing Pipeline Pressure before Maintenance

Significant savings in natural gas

Implementing BMP for New Projects — Atlantic Coast Pipeline

For all new projects, Dominion Energy looks for opportunities to reduce methane and other emissions in a cost-effective and holistic manner. This is evident in the design of the approximately 600-mile Atlantic Coast Pipeline which incorporates state-of-the-art controls that are expected to reduce emissions of air pollutants. Some of the key design considerations for this project include the selection of high-efficiency turbines with voluntary add-on controls, design measures to reduce methane emissions during pre-maintenance venting from the compression stations and the implementation of leak monitoring and repair programs.

TABLE 4: Mandatory leak programs required by federal or state regulations.

LDAR Program	Driver
Annual GHG Leak Surveys	Federal Regulation
Quarterly LDAR Surveys	Federal Regulation
Monthly AVO Facility-Wide Inspection	State Requirement
Monthly Gas Leak Inspection	State Requirement
Weekly AVO Facility-Wide Inspections	State Requirement

[5] **Green Completion technology** is used to mitigate the loss of methane and other hydrocarbons during an initial completion of a well or well refurbishment operations. This equipment separates the gas from liquids which allows the gases to be collected rather than vented to the atmosphere.

[6] A **gate station** (also known as a city gate station, a metering and regulator station, or a distribution station) takes high pressure gas from a larger pipeline, reduces the pressure and distributes gas to local homes.

emissions are possible from reducing pipeline pressure before venting for maintenance and repair, as recognized by the NgSTAR Program. In this technique, the pipeline pressure is reduced using inline compressors or portable compressors. Alternatively, hot taps[7] may be utilized to avoid venting.

Typically, pressure can be reduced up to 50% using inline compressors, and by up to 90% using additional portable compressors. In 2018 Dominion Energy Transmission reduced 299,945 MCF of natural gas emissions, or 5,471 MT of methane emissions, using this technique. Under the Methane Challenge Program, Dominion Energy Transmission started implementing measures to reduce methane emissions from planned pipeline venting systems by at least 50%. The emissions reductions achieved will be reported annually to the EPA and published on its website. Dominion Energy's report to the EPA under the Methane Challenge Program for this BMP have not yet been published by EPA, once those reports become available, they will be found in Appendix C.

Dominion Energy Carolina Gas Transmission reduced 19,492 MCF of gas or 356 MT of methane in 2018 using pump-down measures. Additionally, one of Dominion Energy's gas distribution companies, Dominion Energy Ohio, reduced 3,743 MCF of natural gas emissions or 68 MT of methane emissions using this measure.

Capped Emergency Shutdown Testing

Full compressor-station venting must be conducted periodically for regulatory safety evaluations. Dominion Energy Transmission staggers these shutdowns at five-year intervals to minimize annual emissions. During the other four years, stations conduct annual safety tests using enclosures to prevent gas loss. The enclosures work like a cap at the end of the pipe and prevent gas loss. In 2018, Dominion Energy Transmission saved 28,584 MCF of natural gas or 521 MT of methane emissions using this technique. Dominion Energy Carolina Gas Transmission reduced 789 MCF of gas or 14 MT of methane in 2018 through capped emergency shutdown testing.

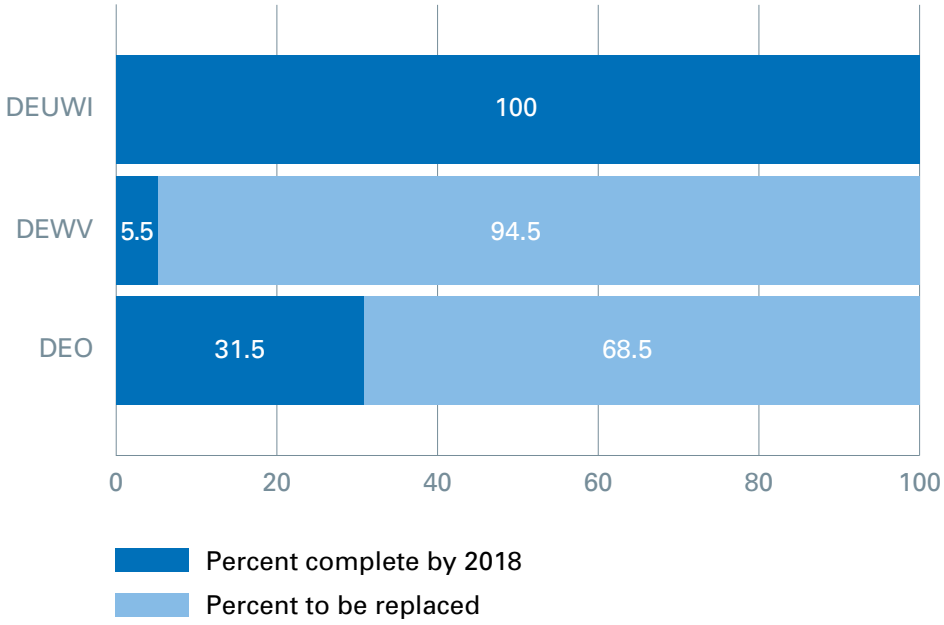
Replacing High-Bleed Pneumatic Devices and Gas-Driven Pneumatic Pumps

A continuous-bleed pneumatic device is used to modulate process conditions for operational or safety purposes. A pneumatic device using natural gas with a bleed rate of greater than 6 standard cubic feet per hour is a high bleed device. Replacing high-bleed pneumatic devices with either low- or no-bleed devices (using instrument air instead of natural gas to activate the device) reduces methane emissions. By implementing this technique, Dominion Energy Transmission has reduced 318 MCF of natural gas or 6 MT of methane in 2018. Dominion Energy Ohio reduced 25489 MCF of gas or 465 MT of methane emissions in 2018 and Dominion Energy Carolina Gas Transmission reduced 3,095 MCF of gas or 56 MT of methane emissions in 2018 by replacing high-bleed pneumatic devices. Finally, Dominion Energy Wexpro reduced 48,390 MCF of gas or 883 MT of methane emissions in 2018 by replacing gas-driven pneumatic pumps with either solar powered pumps or thermal electric generators. New construction projects undertaken by Dominion Energy typically involve installation of instrument air pneumatic devices only.

Pipeline Infrastructure Replacement Programs

Dominion Energy provides regulated retail natural gas service through the company's local distribution companies, Dominion Energy Ohio, Dominion Energy West Virginia, and Dominion Energy Utah, Wyoming, and Idaho. Historically, natural gas distribution pipelines were installed using bare steel, cast iron, wrought iron, and copper materials, which are known to have higher methane leak rates than plastic or protected steel. As such, Dominion Energy distribution companies have replaced or are actively replacing pipeline main and

Figure 10 // Replacement for Bare Steel, Cast Iron, Wrought Iron and Copper Distribution Pipe for Reliability and Reduced Methane Emissions Through Pipeline Replacement Programs



[7] **Hot tapping** is an alternative procedure that makes a new pipeline connection while the pipeline remains in service, flowing natural gas under pressure. Hot tapping avoids product loss, methane emissions, and disruption of service to customers.

services with plastic or protected steel. **Figure 10** shows Dominion Energy's 2018 progress with the its pipeline replacement programs.

Since 2008, Dominion Energy Ohio has been actively replacing more than 5,500 miles of bare steel pipe, and it has less than 24 miles of cast-iron and wrought-iron pipes left to replace (less than 2 miles of cast-iron remaining). The pipeline infrastructure replacement program was initiated by Dominion Energy Ohio and approved by the Public Utilities Commission of Ohio. In 2017, bare-steel and cast-iron pipes made up less than 25% of the distribution pipeline system in Dominion Energy Ohio's service territory. Dominion Energy Ohio schedules about 200 miles of main line pipes and about 17,000 service lines for replacement per year.

In 2018, we replaced 162 miles of main line pipes, all of which were bare-steel or cast-iron, and 16,919 service lines were replaced. Dominion Energy Ohio reduced 47,458 MCF of gas or 866 MT of methane in 2018 through replacement of mains and services. Starting in 2018, this BMP was reported under the Methane Challenge program. Results from Dominion Energy's report under the Methane Challenge Program have not yet been published by EPA, once those reports become available, they will be found in Appendix C.

In 2016, Dominion Energy West Virginia began its pipeline replacement program — through which approximately 1,000 miles of unprotected steel and bare steel pipes will be replaced. In 2018, 13 miles of main line pipes and 650 service lines were replaced. Dominion Energy West Virginia reduced 2,604 MCF of gas or 48 MT of methane in 2018 through replacement of mains and services. Starting in 2018, this BMP was reported under the Methane Challenge program. Results from Dominion Energy's report under the Methane Challenge Program have not yet been published by EPA, once those reports become available, they will be found in Appendix C.

Dominion Energy Utah, Dominion Energy Wyoming, and Dominion Energy Idaho (collectively, DEUWI) replaced all cast-iron and unprotected steel pipes (3,400 miles) prior to 1996. The company now has a proactive program to replace certain portions of coated, high-pressure infrastructure on an annual basis.

Solar powered pump at Wexpro well.

Energy Efficiency and Renewable Natural Gas

At the same time Dominion Energy is lowering emissions from its own infrastructure, the company is working to lower methane emissions from other industries and reduce its customers' carbon footprint.

Renewable Natural Gas

The agriculture industry is the largest source of methane emissions in the U.S., accounting for approximately 36% of all emissions. To help curb agricultural emissions, Dominion Energy is partnering with the nation's largest pork and dairy producers to develop waste-to-energy projects that capture methane from farming operations and convert it into carbon-beneficial renewable natural gas.

The development of renewable natural gas is a powerful, innovative and effective solution to greenhouse gas emissions from our nation's farms. In fact, 25 times more greenhouse gas emissions are captured from hog and dairy farms than are released from the use of RNG in homes and businesses. That's because the raw methane that would otherwise be released from the existing lagoons on the farms is 25 times more potent as a greenhouse gas than the CO2 that is generated when renewable natural gas is used to heat homes or generate electricity.

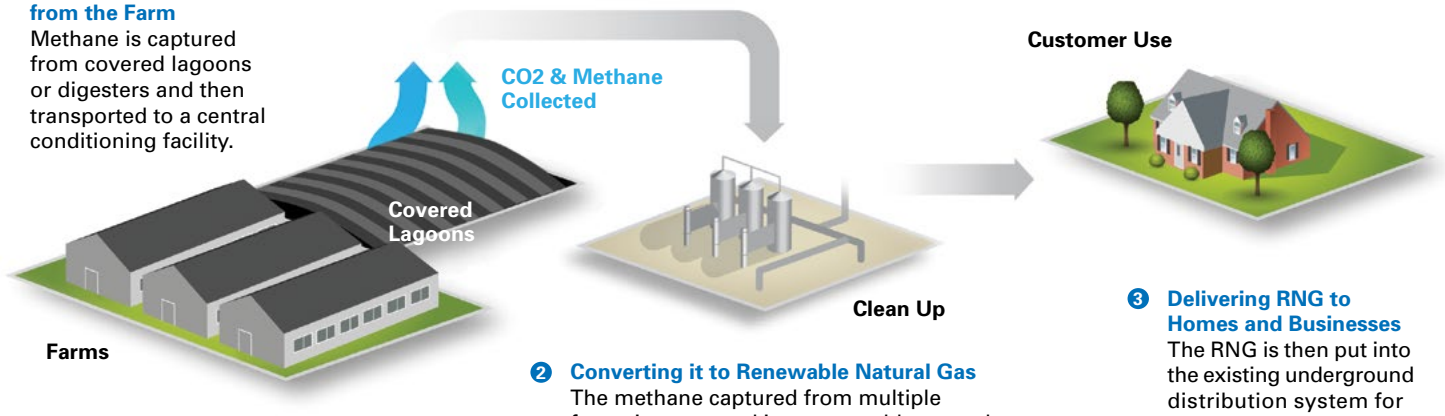
In late 2018, Dominion Energy joined forces with Smithfield Foods to form the largest agriculture-based renewable natural gas (RNG) partnership in the U.S. The $250 million joint venture, known as Align RNG®, is capturing waste methane from Smithfield's hog farms and converting it into clean energy to heat homes and power local businesses. In October 2019, Dominion Energy and Smithfield Foods announced the companies would double their investment in the joint venture, committing $500 million over 10 years to expand hog-based RNG projects across the country.

Building on the success and experience of its partnership with Smithfield, in December 2019 Dominion Energy partnered with Vanguard Renewables to form the first nationwide dairy-based RNG venture in the U.S. In partnership with Vanguard and the Dairy Farmers of America, Dominion Energy committed $200 million over 5 years to capture waste methane from U.S. dairy farms and convert it into clean energy.

Once completed over the next 10 years,

How does Renewable Natural Gas Work?

1 Capturing Methane from the Farm
Methane is captured from covered lagoons or digesters and then transported to a central conditioning facility.



2 Converting it to Renewable Natural Gas
The methane captured from multiple farms is converted into renewable natural gas at a central conditioning facility.

3 Delivering RNG to Homes and Businesses
The RNG is then put into the existing underground distribution system for delivery to homes and businesses.

Dominion Energy's renewable natural gas ventures with Smithfield Foods and Vanguard Renewables will produce enough clean energy to heat more than 83,000 homes and reduce U.S. agricultural methane emissions by more than 123,000 metric tons each year. That is equivalent to taking more than 650,000 non-electric cars off the road or planting 50 million new trees.

In addition to these industry-leading agricultural methane capture initiatives, Dominion Energy is also working with landfill operators and food waste facilities across the country to bring more RNG onto its own system and provide its utility customers with more sustainable choices. The company aims to meet 4% of its gas distribution customers' needs with RNG by 2040.

Therm, the Dominion Energy Wise Guy, appears in Dominion Energy commercials to encourage customers to schedule a Home Energy Plan, take advantage of ThermWise rebates and make their homes more energy efficient.

Energy Efficiency

Dominion Energy is enhancing conservation and energy efficiency programs to help customers use energy wisely.

The ThermWise energy-efficiency program in the company's Western-state operations provides customers with visits by experts to design an in-home energy conservation plan. Customers receive, free of charge, energy-saving tools such as household pipe insulation and low-flow shower heads. ThermWise provides cash rebates to customers who install energy-efficient appliances or make weatherization improvements such as insulation, new windows and duct sealing. The program has conducted more than 2,200 weatherization inspections and provided more than 27,000 home energy plans.

In 2018, ThermWise granted nearly $18 million in incentives for installation of high-efficiency natural-gas equipment and home improvements, saving nearly 1 million dekatherms (Dth) — the equivalent of annual natural gas consumption of over 12,000 residential customers.

ThermWise provides funds for extensive home retrofits and furnace and duct replacements for low-income customers in Utah and Idaho. These funds, administered by the states' low-income assistance agencies, have totaled more than $5 million in the 12-year history of the program. As of the end of 2017, cumulative natural gas savings from ThermWise total 6.7 million Dth — equivalent to the annual consumption of roughly 84,000 residential customers. A total of $212 million in incentives has been paid to Dominion Energy customers.

Dominion Energy Ohio offers similar efficiency programs to its customers. In Ohio, Home Performance with Energy Star (HPwES) provides home assessments that include diagnostic and safety testing, the installation of free energy-efficiency products such as high-efficiency shower heads and pipe wrap, and rebates worth up to $1,250 for additional energy-saving home improvements such as insulation, duct sealing, and natural gas furnaces and water heaters. The cost to the customers is $50 plus an additional $50 if they opt to have a Nest Thermostat installed.[8] From 2016 through 2018, HPwES performed nearly 9,000 assessments and provided rebates of more than $1.9 million. The current program has a $3 million annual budget.

Dominion Energy Ohio's Housewarming Program, which offers help to low-income customers, has a $6.5 million annual budget. Through a third-party vendor, the Housewarming Program provides health and safety inspections on furnaces, boilers, space heaters, hot water tanks, stoves and other appliances. Home improvements, including weatherization, follow. There is no cost to the customer. The third-party vendor leverages multiple assistance programs available to the customer to ensure all improvements can be made. The average cost to weatherize a home is approximately $4,000. Since 2015, the Housewarming Program has weatherized more than 7,000 residences at a total cost of $28.6 million.

Dominion Energy is determined to build on the momentum of these well-established programs, to help its customers reduce their own environmental impacts. To that end, the company has committed to increase the customer savings realized through energy efficiency programs by 5% from 2018 to 2019. In addition, the company has made a commitment to increase the annual savings that its customers achieve from energy efficiency endeavors by 50% by 2025, against a 2017 baseline.

[8] Dominion Energy encourages the use of advanced technology such as smart thermostats. The thermostat's features can trigger changes that save an average of 10% to 12% on heating bills, and 15% on cooling bills. Smart thermostats connect to smart phones, allowing customers to adjust home temperatures whenever they wish, and the thermostat learns the customer's schedule and will adjust accordingly. It also allows customers to view their energy history to find additional savings, and can even detect problems with furnaces and filters.

Public Safety and Pipeline Integrity

Safety and Methane Emissions Reduction: Working Hand in Hand

At Dominion Energy, pipeline safety and methane emissions reduction go hand in hand. When natural gas infrastructure is monitored closely and operated safely, it is also likely to release less methane emissions. Many of the company's methane emissions reduction initiatives originally stem from pipeline safety and integrity programs, including programs for pipeline and equipment replacement, storage well inspection and interior pipe inspection with instrumented tools.

Dominion Energy is committed to ensuring the safety of its natural gas operations. Safety ranks first among the company's five core values. Through an unrelenting focus on safety, the company has cut the number of federally-recordable incidents among employees by more than half since 2010. Dominion Energy considers this measure to be a leading indicator of the excellent operations that are essential to consistent environmental stewardship.

The company applies several basic practices to drive continuous safety improvements. These fundamentals include: active leadership commitment, strong personal accountability, high situational awareness, minimized workplace hazards, and regulatory compliance. Through these practices, Dominion Energy has developed a strong safety culture that plays a demonstrable role in the company's overall success.

Each Dominion Energy business unit builds on this foundation, through further safety considerations that are specific to its domain. For the natural gas businesses, at least three of these supplemental safety efforts – storage initiatives, pipeline integrity management and public safety programs – also yield meaningful environmental benefits.

Natural Gas Storage Initiatives

Dominion Energy's more than 2,300 storage wells and 24 storage reservoirs are designed to withstand the high pressures associated with compression, injection and withdrawal of natural gas from year to year. The company performs inspection logging to monitoring the integrity of the casing that contains the storage pressure in the wells. Dominion Energy storage injection and withdrawal wells contain up to three concentric linings. On many, the innermost casing is cemented to the surface to provide additional leak prevention.

Dominion Energy has been using electronic logging tools to monitor these essential assets since 1973, many years before it was required by the Pipeline and Hazardous Materials Safety Administration (PHMSA). The process involves lowering a high-resolution electronic device into the well to take electromagnetic readings over its entire length. These readings provide important information regarding the condition of the well, which is then used to determine what, if any, remedial work will be performed.

In deciding how often to perform casing inspection logging on its storage wells,

Dominion Energy gas operations supervisor in Ohio showcasing our innovative use of Zero Emissions Vacuum and Compression (ZEVAC®) technology that captures methane before maintenance or inspection and recycles it for use in other parts of the system.

Dominion Energy takes into account a variety of parameters such as well depth, operating pressure, and location. Dominion Energy has a formally documented risk ranking program for its storage wells that continues to evolve as technology and methodology advance.

The company has adjusted the documentation of these processes to address recent PHMSA requirements for underground storage. Its formal risk management strategy includes an initial evaluation of risk based on threats and consequences of potential events. Each storage well is ranked according to its particular risk, and Dominion Energy manages these risks through the application of preventive measures. Feedback and validation measures ensure continual improvement of this initiative, over time. A capital-improvement budget is established each year to make necessary repairs and improvements, such as replacing wellheads and casings, to mitigate potential risk and keep the system operating efficiently.

Storage-specific Integrity programs include:

- Periodic well casing integrity inspections for internal and external corrosion;
- Regular inspections to verify well status and pressure, and to look for signs of atmospheric corrosion, vent gas or leaks;
- Remote monitoring; and
- Monitoring of third-party drilling activities in and around storage pools.

The company continues to pilot new technology to assess different aspects of the integrity of the well casing to identify any issues and address them before they become safety concerns. Dominion Energy has completed well casing inspections on more than 85% of its storage wells. It has plans to expand the program each year, and to complete the remainder of inspections within the PHMSA-specified period of 3 to 8 years. In 2018, PHMSA began its first audits of storage facilities in the U.S. Its audits of Dominion Energy's program and several of its storage facilities have produced no significant findings. Several audits are scheduled in 2019.

Pipeline Integrity Management

Consistent with its core values of Ethics and Excellence, Dominion Energy strives to address both the letter and spirit of applicable regulations through integrity management programs. Similar to the initiatives applied to natural gas storage assets, the company engages in extensive integrity management programs that are tailored to the attributes of its natural gas transmission and distribution assets and operations.

Dominion Energy's Transmission Integrity Management Program addresses the following components:

- High Consequence Areas,
- Threat Identification and Risk Assessment,
- Baseline Assessment Plan,
- Remediation/Prevention,
- Performance and Quality Assurance,
- Management of Change, and
- Communications.

Dominion Energy inspects and assesses its transmission pipelines in numerous ways, including patrols and continuous monitoring by 24/7 gas control centers.

In addition to regular aerial observation and pipeline patrols, transmission pipelines are inspected from the inside with internal inspection tools referred to as "smart pigs." These devices use computerized sensors capable of detecting and reporting anomalies such as dents and corrosion, enabling the company to make appropriate repairs to ensure the integrity of the pipe. Dominion Energy uses smart pigs on more than half of its transmission and storage system — well beyond regulatory requirements.

Dominion Energy continuously monitors the pressure, temperature and flow of gas through remote sensors placed along the pipeline. Remote-controlled safety shutoff valves allow Gas Control operators to stop the flow of gas immediately and isolate individual sections of pipeline if needed.

To prevent external corrosion, the company operates cathodic protection systems on its underground steel assets. In addition to annual monitoring at key locations, it performs detailed corrosion surveys for an average of 1,000 miles of transmission pipeline each year to ensure these protection systems are functioning effectively. Internal corrosion is prevented through

Dominion Energy technician performing a leak detection survey on a storage well.

vigilant monitoring of constituents in the gas stream, evaluating potential impact and applying targeted preventative and mitigation measures. The company also examines internal and external asset surfaces whenever operating and maintenance activities provide such opportunities, in order to validate the effectiveness of its programs.

The company has proactively committed to replace 50 miles of bare transmission pipeline across the Dominion Energy Transmission system by 2020.

Dominion Energy has partnered with the industry to improve overall emergency response times. To support this initiative, Dominion Energy has committed to install an additional 250 remote-controlled or automated valves across its footprint, by 2020.

Dominion Energy's Distribution Integrity Management Program addresses the following elements:

- Knowledge of the Distribution System;
- Threat Identification;
- Evaluation and Ranking of Risk;
- Identification and Implementation of Measures to Address Risks;
- Measurement of Performance, Monitoring of Results, and Evaluating Effectiveness;
- Periodic Evaluation and Improvement;
- Reporting Results; and
- Document and Record Retention.

The company maintains a number of other programs to ensure distribution pipeline safety. These include:

- Enhanced Excavation Monitoring for high-risk excavation sites;
- Damage Investigation to conduct root-cause analysis of damage to pipes;
- Excavator Communications and Training to inform the public and excavators about the importance of safe excavation practices;
- Enhanced Leak Survey to accelerate leak surveys on higher-pressure distribution lines located outside of business districts; and
- Cross-Bore Verification to investigate pipeline projects that were directionally drilled prior to its current damage-prevention procedures.

Additional safety assessments for transmission and storage pipelines occur on both a cyclic and as-needed basis. This redundant system of vigilant monitoring enables Dominion Energy to detect and fix problems in its system long before they present a hazard.

Going forward:

- Dominion Energy has committed to replace 50 miles of bare transmission pipeline by 2020 across the Dominion Energy Transmission system and will continue to inspect and replace bare-steel distribution lines as needed.
- During that period it expects to install an additional 250 remote-controlled or automated valves across the Dominion Energy footprint.
- It has committed to install 20 additional mainline valves on critical areas of its natural gas pipeline systems.
- Its Western-state gas distribution operations plan to implement an enhanced pipeline excavation damage prevention program for safety and to reduce methane emissions.

Protecting the Public

It is critically important that Dominion Energy's customers, contractors and employees know how to take safety precautions around gas infrastructure. Over the past 20 years, third–party damage has been the primary cause of incidents on natural gas pipelines. Dominion Energy conducts public awareness programs to educate landowners near company facilities, to reduce the likelihood of dig-ins or other harm that can cause a release of methane to the atmosphere.

Dominion Energy has long supported laws requiring use of the 811 "Know what's below; call before you dig" one-call system. Anyone planning to do work that disturbs the soil beneath streets, sidewalks, yards, farms or other property is required to call the single designated number. Utilities, authorities and others mark their underground facilities before work begins. Excavators can call a state one-call system or the national number: 811. These one-call programs are a valuable component to protect the company's system and to ensure safe operations.

811®

Know what's **below.**
Call before you dig.

In Ohio, Dominion Energy has teamed with the Cleveland Indians to promote the "Call Before You Dig" 811 safety message since 2017 through signage at Progressive Field and public service advertisements recited during each game on the Indians radio network. The venture builds on similar promotions initiated in 2014 with the NBA's Cleveland Cavaliers and the American Hockey League's Cleveland Monsters at the Rocket Mortgage Fieldhouse.

In Utah, employees make roughly 100 safety presentations each year to community organizations, informing customers about earthquake preparedness, natural gas safety, the safety of high-pressure pipelines near their homes and businesses, ways to identify leaks, and what to do in the event of an incident.

The company conducts campaigns every fall in Utah to encourage customers to have a licensed heating expert check furnaces before winter. The company

partners each year with Utah Poison Control, the Utah Health Department and the Utah Unified Fire Authority to educate the public about carbon monoxide. It also sponsors the annual Utah Safety Council Safety Conference and Expo.

Emergency Preparedness

Thanks in part to extensive safety measures, natural gas emergencies occur very rarely. Those that do often result from external factors, such as excavations carried out near underground pipelines without adequate precautions. Because the potential for emergencies still exists, Dominion Energy also has developed rigorous and comprehensive programs and policies to mitigate them.

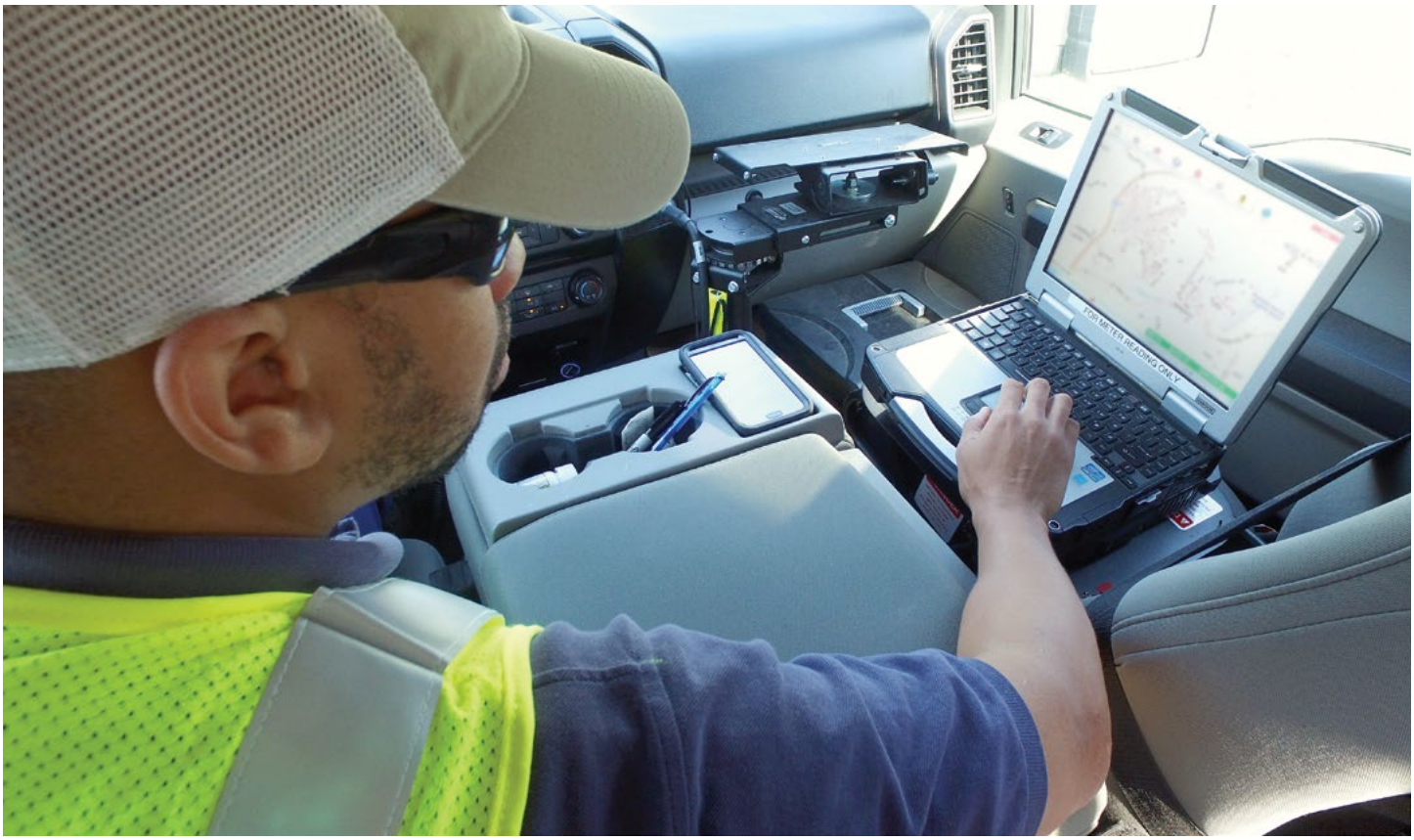
Dominion Energy conducts annual public-liaison meetings with emergency-response agencies. The company maintains and values positive, long-term relationships with fire departments, police departments, and sheriffs' offices in the localities where its infrastructure is located. These sessions cover subjects such as the properties of natural gas, the roles of response agencies and natural gas companies in a potential incident, high level operating protocols and preferred channels of communication.

Dominion Energy has installed remotely-operated valves that can be closed when a pipeline leak or rupture occurs on a transmission pipeline. Such remote operation minimizes gas loss to the atmosphere, by quickly isolating the affected section of pipeline. Compressor stations have similar emergency shutdown systems activated through manual controls. Those systems are tested at least annually.

Dominion Energy has developed response plans for a variety of contingencies that could affect pipelines, compressor stations and storage wells. Those plans delineate specific roles, responsibilities and procedures. When there is an emergency call related to its distribution infrastructure, Dominion Energy personnel are on-site within one hour at least 98% of the time.

These efforts have produced a strong safety record that has received industry recognition. In August 2018, Dominion Energy Ohio received the American Gas Association's (AGA) Safety Achievement Award for excellence in employee safety for large local distribution companies in recognition of their 2017 performance. The company has won the award — the natural gas utility trade group's highest employee safety honor — multiple times. Dominion Energy operations in Utah and West Virginia, as well as Dominion Energy Questar Pipeline and Dominion Energy Transmission, also received AGA Industry Leader in Accident Prevention awards for performance in 2017.[9]

Gas Distribution Meter Reader in West Virginia



[9] Dominion Energy West Virginia, Dominion Energy South Carolina and Dominion Energy Transmission, Inc. have all earned 2018 AGA Safety Achievement Awards for excellence in employee safety. At the time of this Methane Emissions Reduction Report, Dominion Energy West Virginia has experienced over two years since its last federally-recordable employee safety incident.

Glossary of Terms

AVO	Audio, Visual, Olfactory inspections
BCF	Billion cubic feet
DECG	Dominion Energy Carolina Gas Transmission, LLC
DECP	Dominion Energy Cove Point LNG, LP
DEGP	Dominion Energy Gathering & Processing, Inc.
DEO	The East Ohio Gas Company, dba Dominion Energy Ohio
DEQP	Dominion Energy Questar Pipeline, LLC (including Dominion Energy Overthrust Pipeline, LLC)
DETI	Dominion Energy Transmission, Inc.
DEUWI	Questar Gas, dba Dominion Energy Utah, Dominion Energy Idaho, Dominion Energy Wyoming
DEWV	Hope Gas, Inc., dba Dominion Energy West Virginia
BMP	Best Management Practice
CH4	Methane
CO2e	Carbon Dioxide Equivalent
DI&M	Directed Inspection and Maintenance
Dth	Dekatherms
EPA	Environmental Protection Agency
G&B	Gathering and Boosting
GHGRP	Greenhouse Gas Reporting Program
GWP	Global Warming Potential
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
MCF	Thousand cubic feet
MT	Metric Tons
NgSTAR	Natural Gas STAR Program
RNG	Renewable Natural Gas
PHMSA	Pipeline and Hazardous Materials Safety Administration
T&S	Transmission and Storage
ZEVAC®	Zero Emissions Vacuum and Compression

Appendices

Appendix A: Maps of Dominion Energy Storage Assets
Appendix B: EPA NgSTAR summary reports for 2018
Appendix C: Dominion Energy Methane Challenge reports for 2018
Appendix D: List of Additional Sources in Dominion Energy's Enhanced Inventory

Appendix

Appendix A

Maps of Dominion Energy Storage Assets

Appendix B

Dominion Energy EPA Natural Gas STAR (NgSTAR) Program Summary Reports

- DETI (4 pages)
- DEO (4 pages)
- DEWV (4 pages)
- DECG (4 pages)
- DE Wexpro (4 pages)

Appendix C

Dominion Energy 2018 EPA Methane Challenge Program Annual Detailed Reports

- Not available, will be added once published

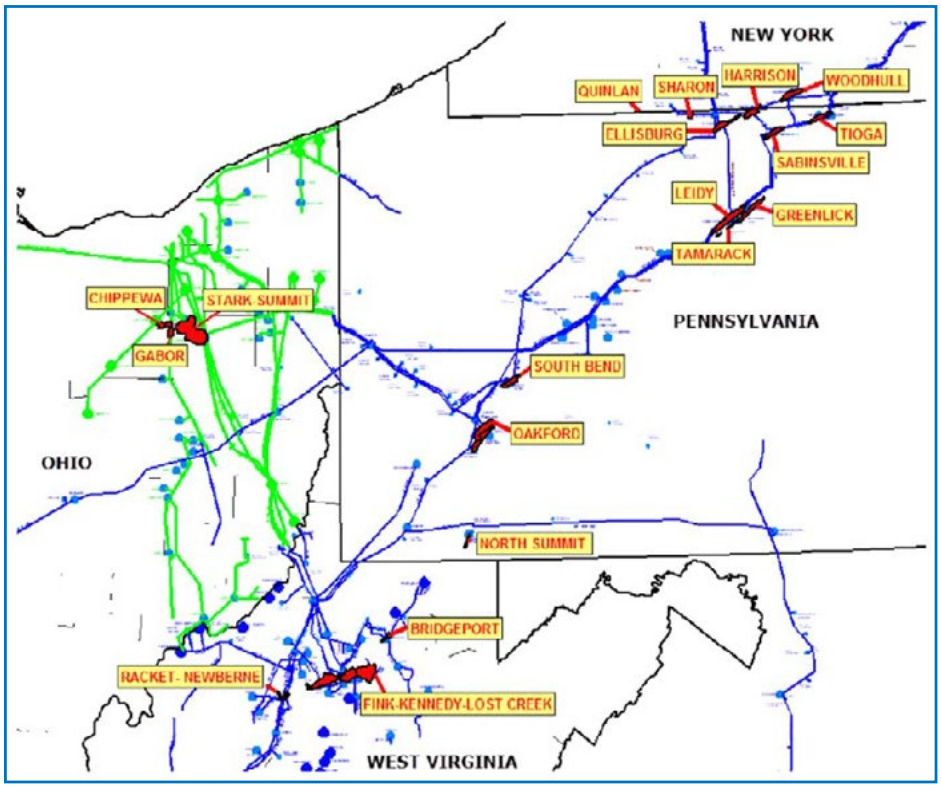
Appendix D

Dominion Energy Table of Sources in Enhanced Methane Inventory

Appendix A

Maps of Dominion Energy Underground Storage Assets

Dominion Energy Storage Assets in the East



Dominion Energy Storage Assets in the West

Dominion Energy Transmission, Inc.

Joined Natural Gas STAR in 2011

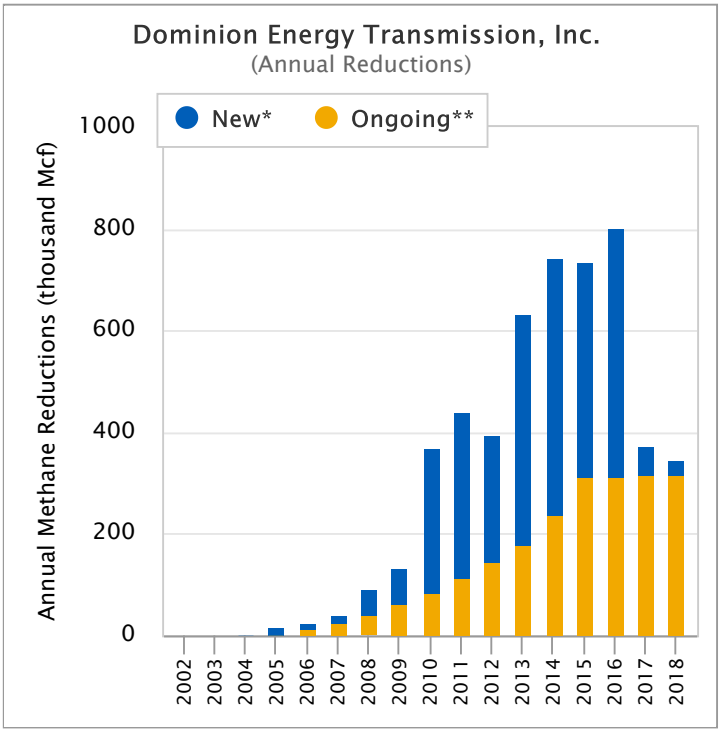
2018 Natural Gas STAR Summary Report

Segment: Transmission

Since the inception of the program in 1993, domestic Natural Gas STAR partners have eliminated more than 1,634,171,832 thousand cubic feet (Mcf) of methane emissions.

359,571,981 Mcf of methane emissions have been reduced in the Transmission Segment.

This report summarizes the voluntary methane emissions reductions achieved by Dominion Energy Transmission, Inc. in the Transmission Segment under the EPA Natural Gas STAR Program.



Reductions for Dominion Energy Transmission, Inc.

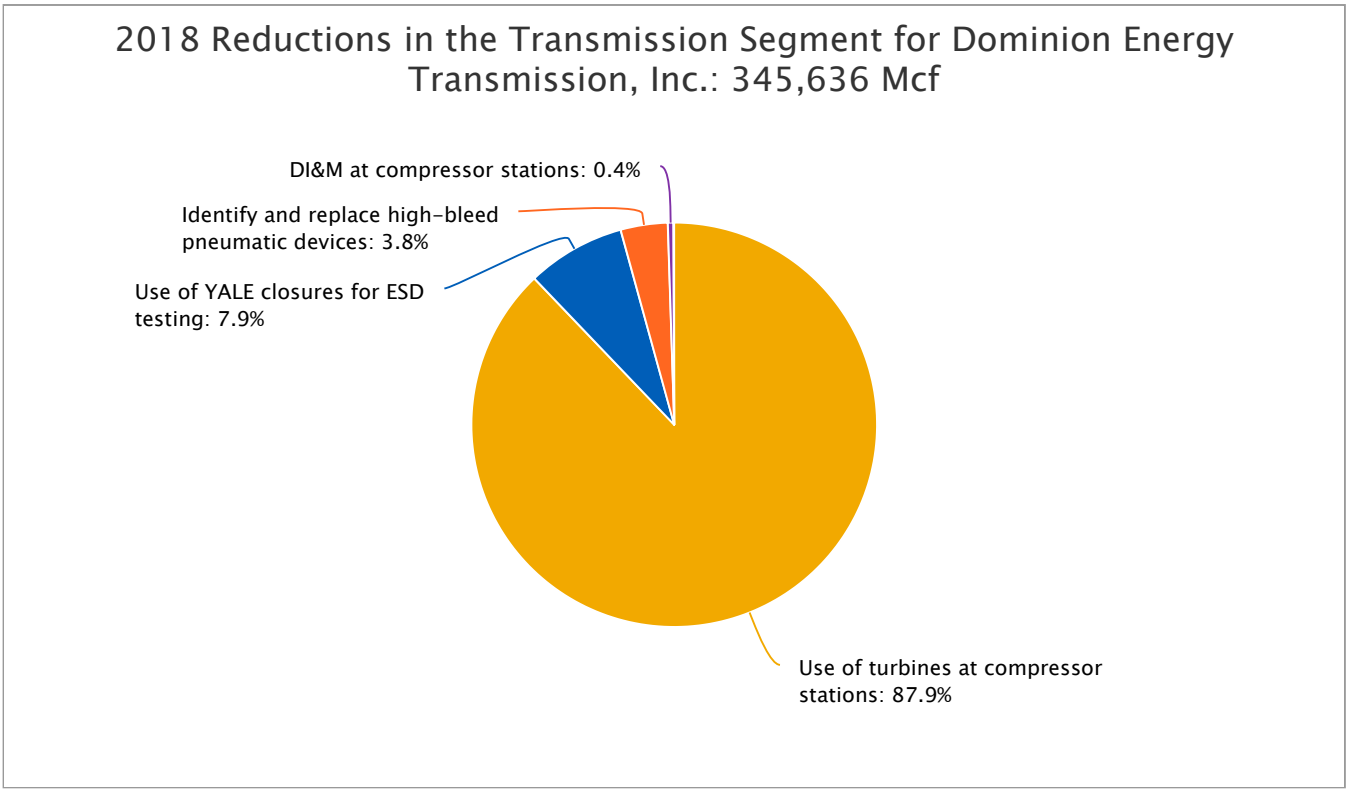
2018	Cumulative
345,636 Mcf New: 29,113 Mcf Ongoing: 316,523 Mcf	**5,157,195 Mcf**

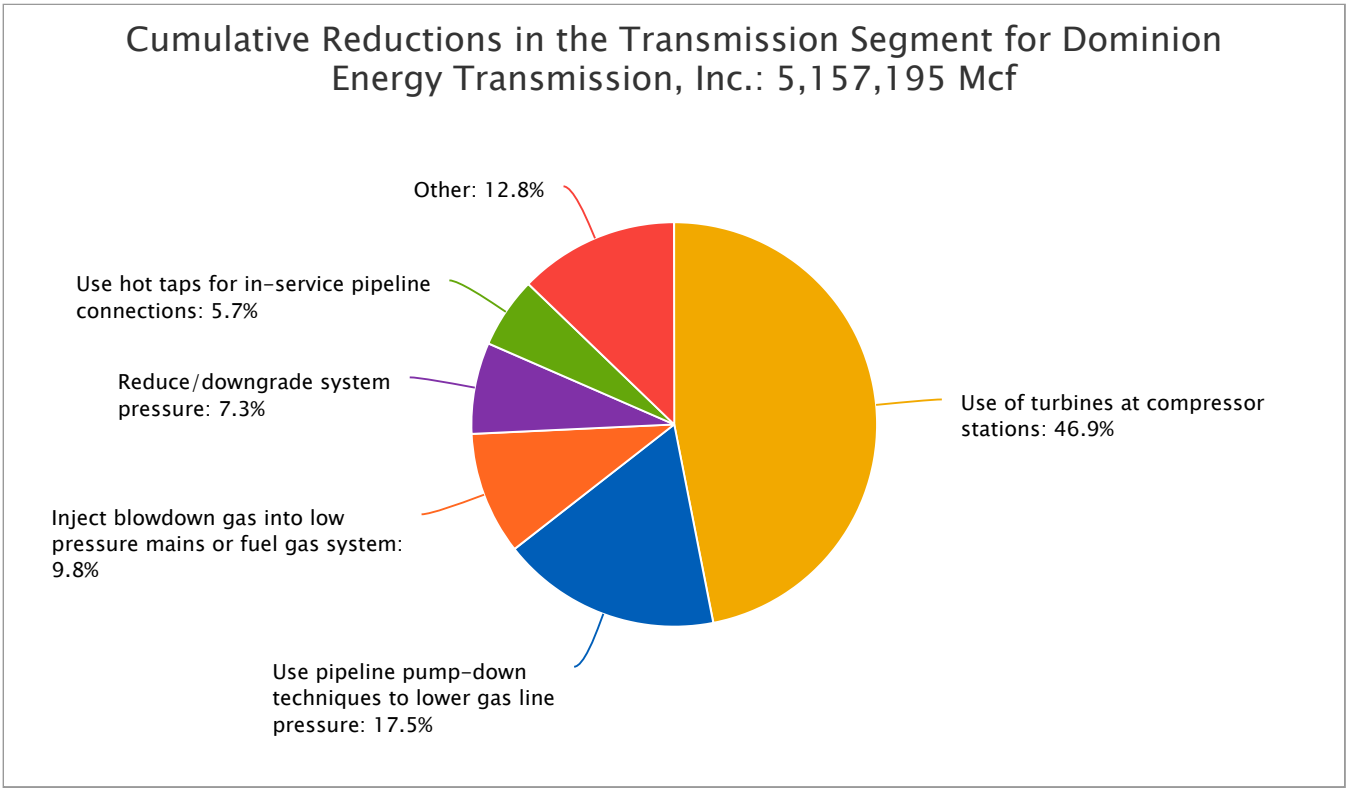
Methane Emission Reduction Equivalencies See EPA's Greenhouse Gas Equivalencies Calculator for additional equivalencies and details about the conversion units.	**2018 (345,636 Mcf)**	**Cumulative (5,157,195 Mcf)**
Metric tons (MT) CO_2 equivalent	165,905 $MTCO_2e$	2,475,444 $MTCO_2e$
CO_2 emissions from the energy used by this many homes in one year	19,869 homes	296,460 homes
Carbon sequestered from this many acres of U.S. forests in one year	195,182 acres	2,912,287 acres
Value of methane saved (at $3 per Mcf)	$1,036,908	$15,471,585

* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Dominion Energy Transmission, Inc. Methane Emission Reduction Technologies and Practices

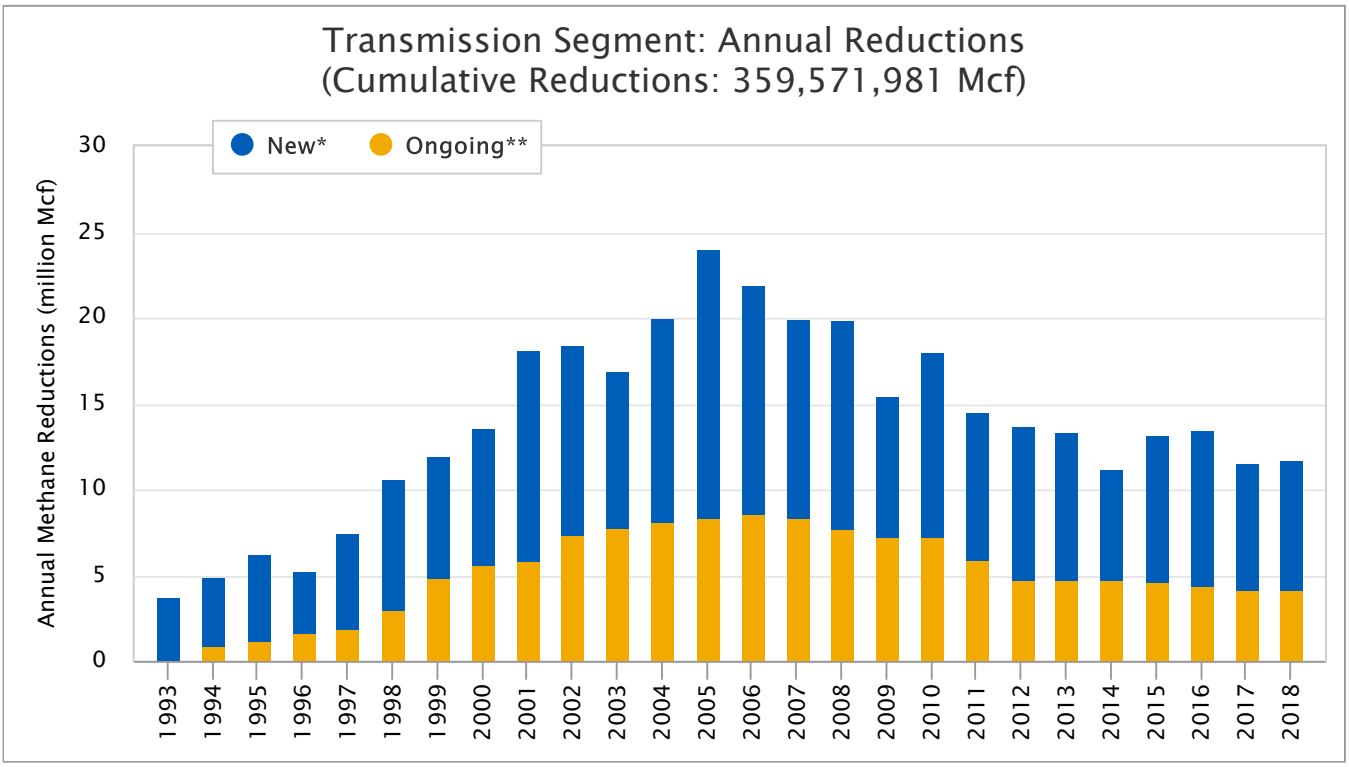


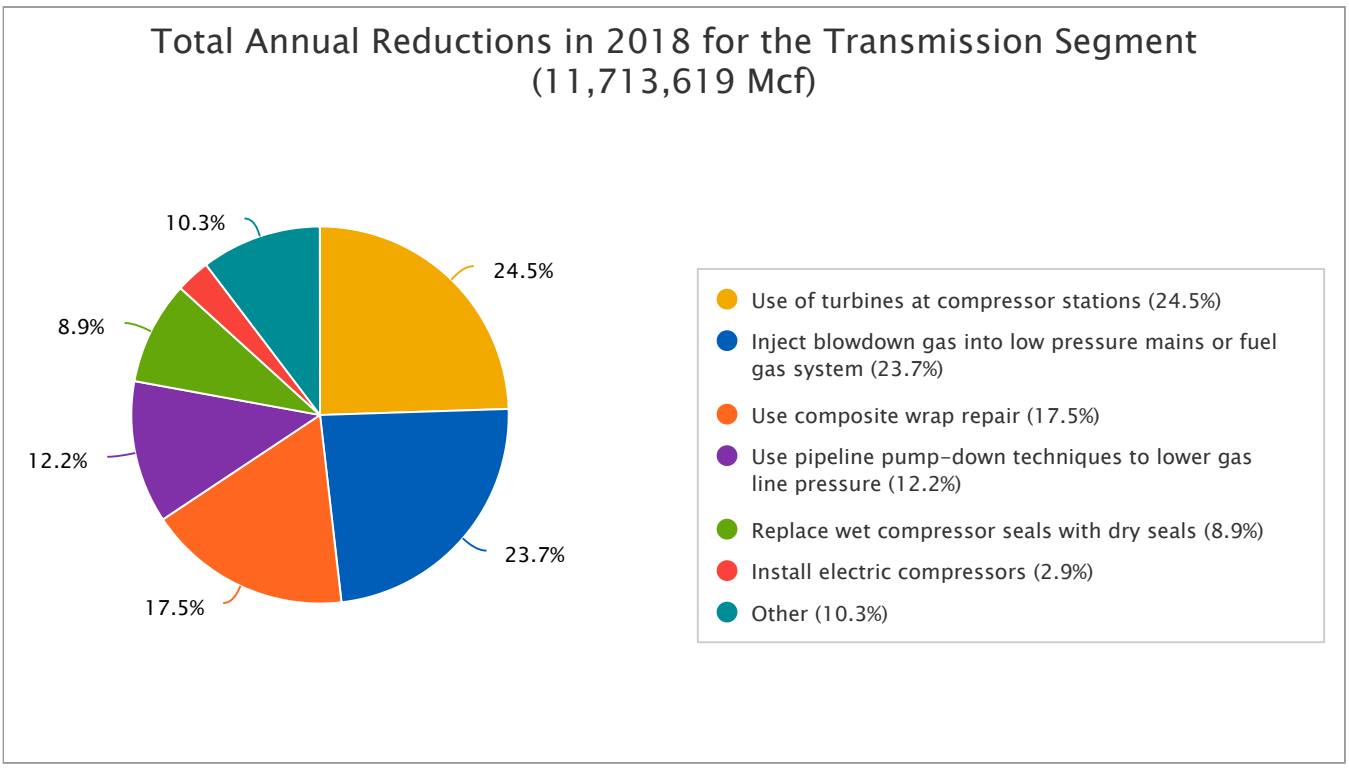


"Cumulative reductions" are all reductions achieved by Dominion Energy Transmission, Inc. in the Transmission Segment since joining the program.

Based on data available as of 11/26/2019

Summary of Technologies and Practices for the Transmission Segment





* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Top Technologies and Practices for the Transmission Segment

Top 10 Technologies and Practices in the Transmission Segment Reported by Partners in the Last 5 Years (2014 to 2018)

Rank	Technology/Practice	Reductions (Mcf)
1	Use of turbines at compressor stations	14,533,973
2	Use pipeline pump-down techniques to lower gas line pressure	13,232,584
3	Use composite wrap repair	11,834,680
4	Inject blowdown gas into low pressure mains or fuel gas system	7,559,078
5	Replace wet compressor seals with dry seals	5,201,682
6	Install electric compressors	2,208,676
7	Use hot taps for in-service pipeline connections	1,316,474
8	DI&M at compressor stations	979,859
9	Use of YALE closures for ESD testing	702,895
10	Pipeline replacement and repair	665,886

Notes:

"Top technologies" are those that led to the greatest cumulative, partner-reported, methane reductions over the specified time period.

Visit the Natural Gas STAR's Recommended Technologies for more information.

United States Environmental Protection Agency

Dominion Energy Ohio

Joined Natural Gas STAR in 2014

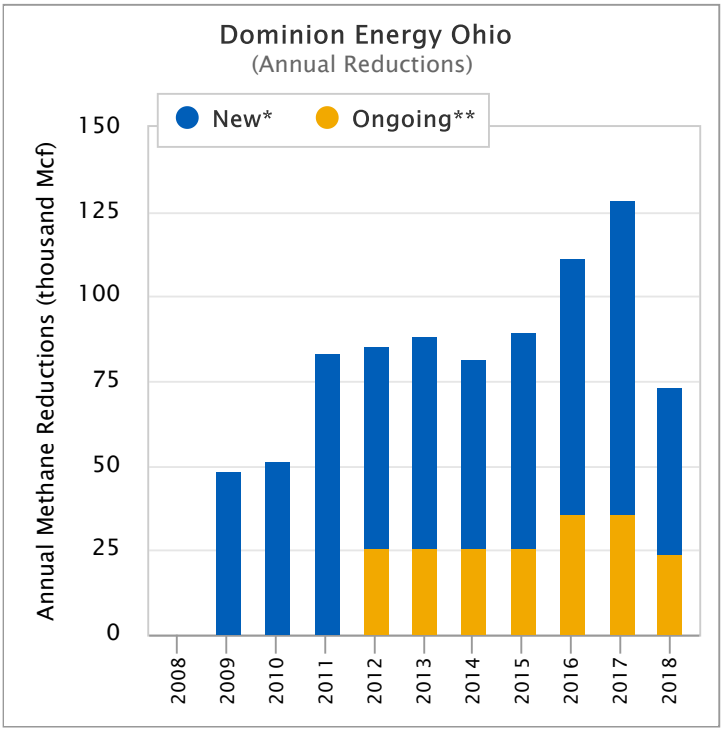
2018 Natural Gas STAR Summary Report

Segment: Distribution

Since the inception of the program in 1993, domestic Natural Gas STAR partners have eliminated more than 1,634,171,832 thousand cubic feet (Mcf) of methane emissions.

53,387,917 Mcf of methane emissions have been reduced in the Distribution Segment.

This report summarizes the voluntary methane emissions reductions achieved by Dominion Energy Ohio in the Distribution Segment under the EPA Natural Gas STAR Program.



Reductions for Dominion Energy Ohio

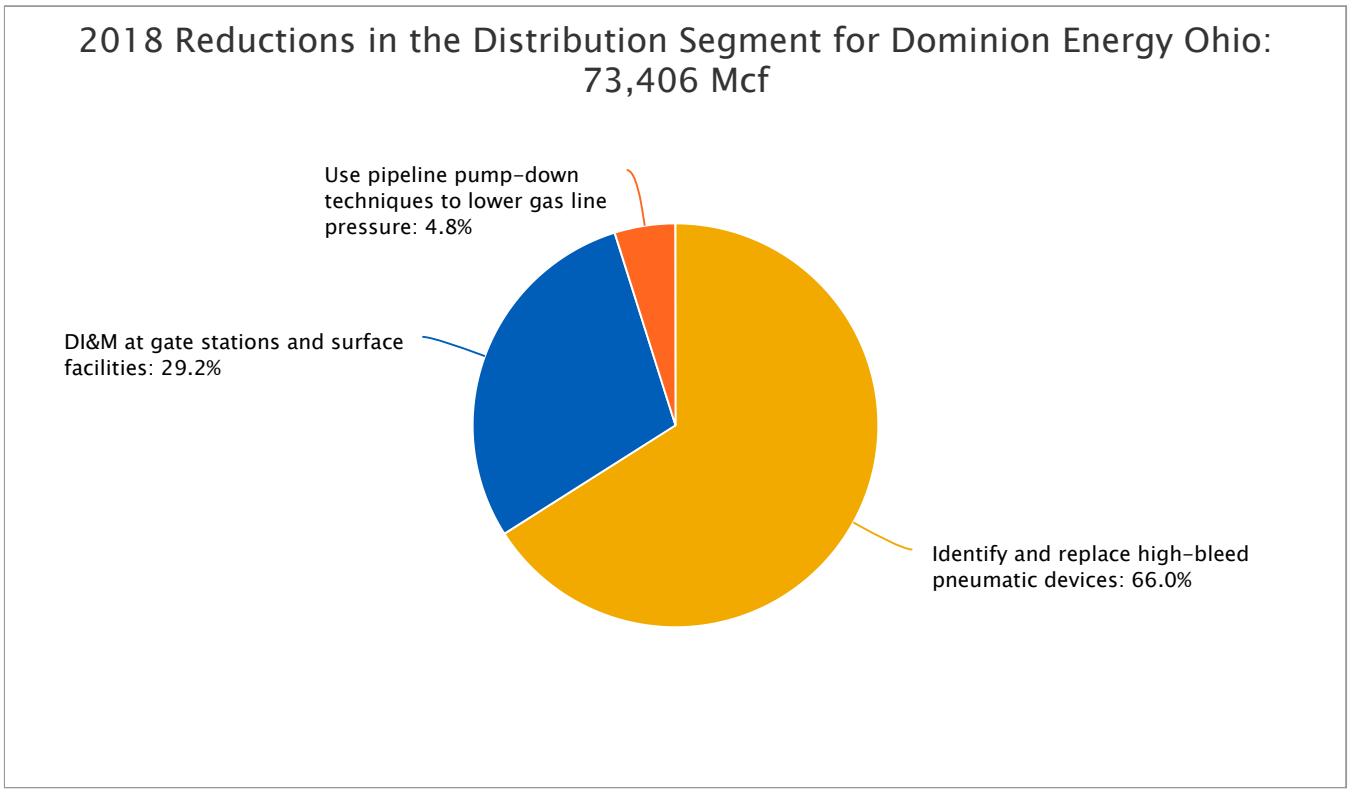
2018	Cumulative
73,406 Mcf New: 49,191 Mcf Ongoing: 24,215 Mcf	**843,039 Mcf**

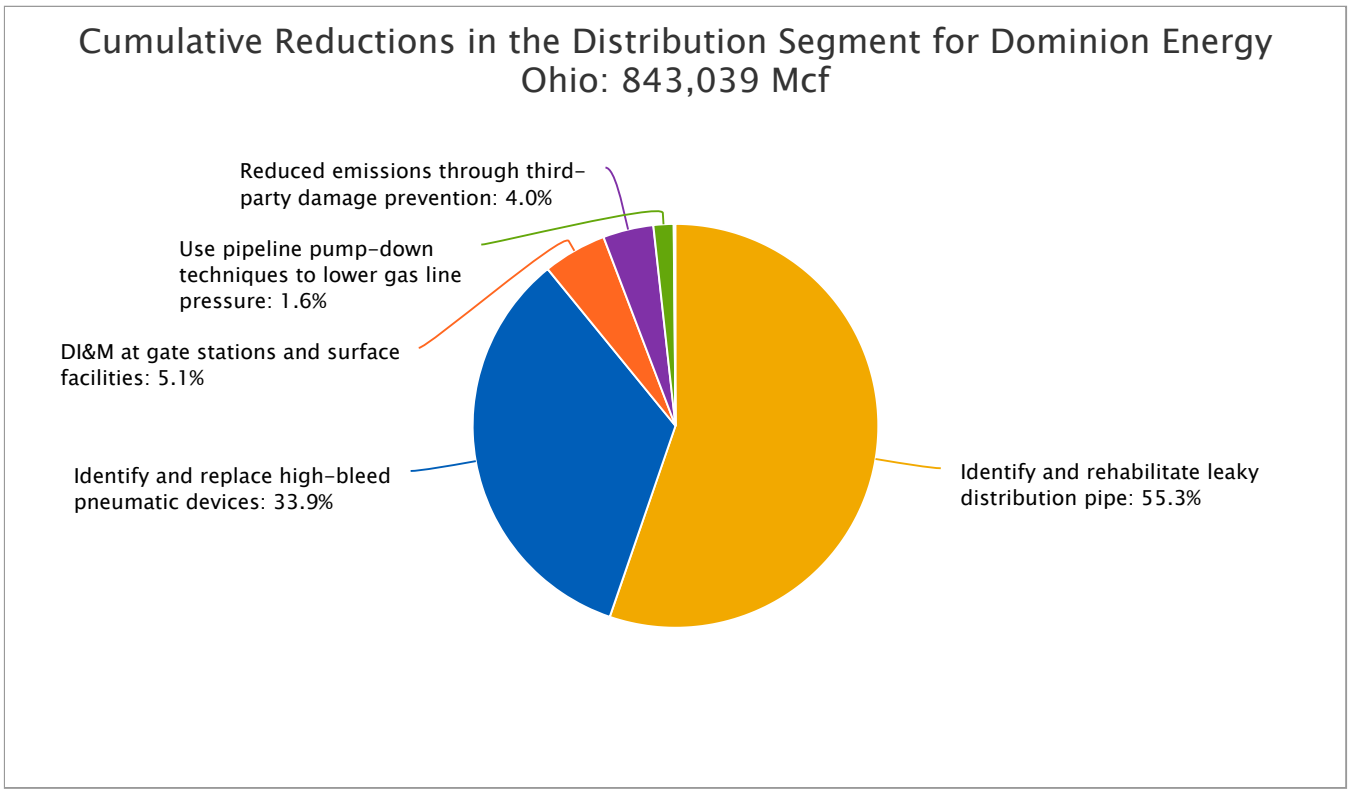
Methane Emission Reduction Equivalencies See EPA's Greenhouse Gas Equivalencies Calculator for additional equivalencies and details about the conversion units.	**2018 (73,406 Mcf)**	**Cumulative (843,039 Mcf)**
Metric tons (MT) CO_2 equivalent	35,235 $MTCO_2e$	404,657 $MTCO_2e$
CO_2 emissions from the energy used by this many homes in one year	4,220 homes	48,462 homes
Carbon sequestered from this many acres of U.S. forests in one year	41,453 acres	476,067 acres
Value of methane saved (at $3 per Mcf)	$220,217	$2,529,116

* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

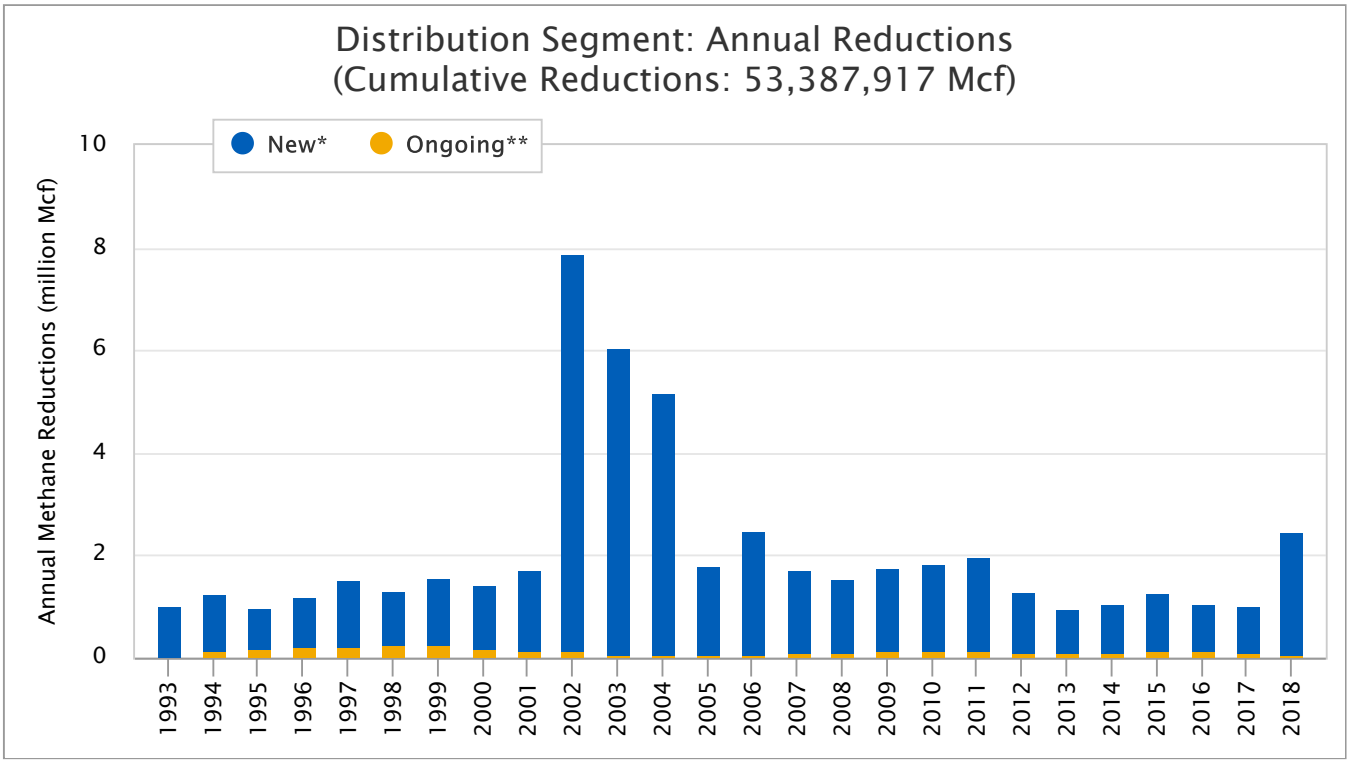
Dominion Energy Ohio Methane Emission Reduction Technologies and Practices

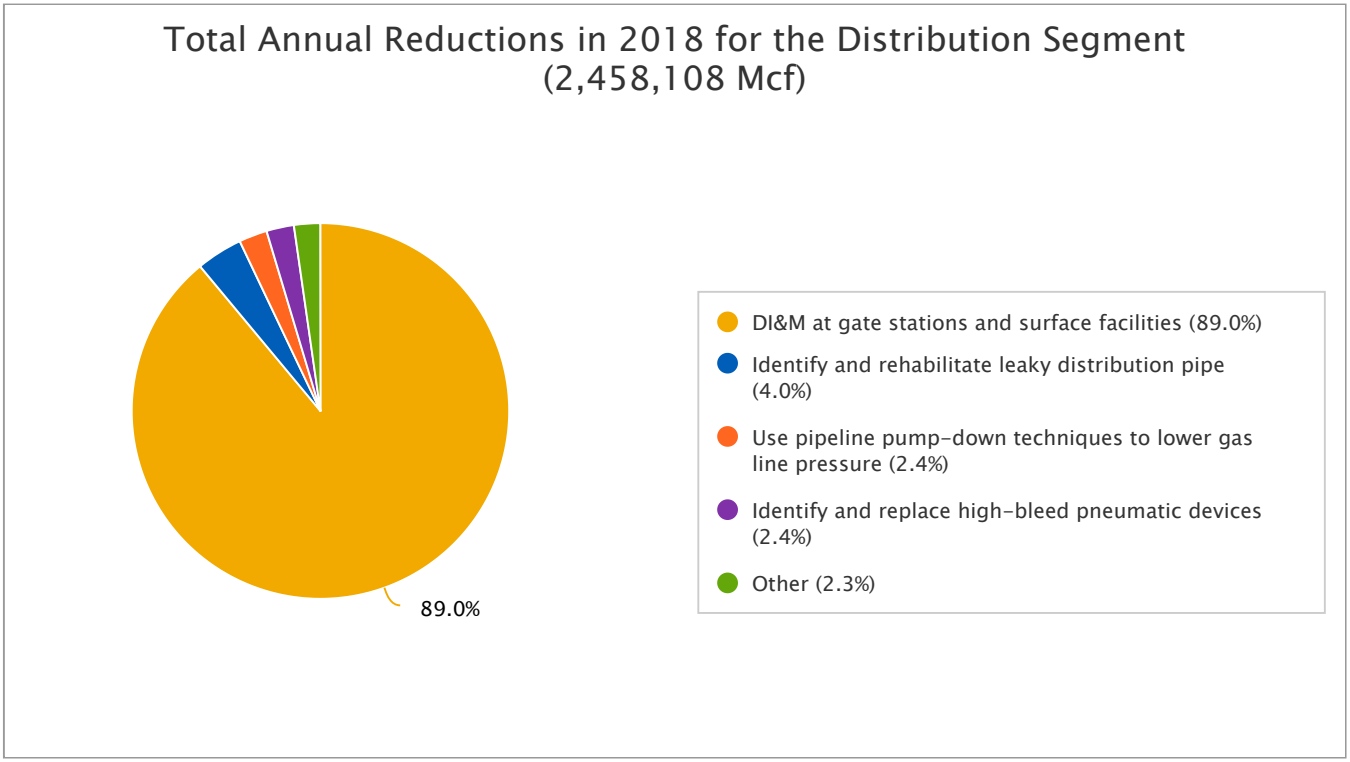




"Cumulative reductions" are all reductions achieved by Dominion Energy Ohio in the Distribution Segment since joining the program.

Summary of Technologies and Practices for the Distribution Segment





* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Top Technologies and Practices for the Distribution Segment

Top 10 Technologies and Practices in the Distribution Segment Reported by Partners in the Last 5 Years (2014 to 2018)

Rank	Technology/Practice	Reductions (Mcf)
1	DI&M at gate stations and surface facilities	2,661,255
2	Identify and rehabilitate leaky distribution pipe	2,620,500
3	DI&M at surface facilities	469,361
4	Identify and replace high-bleed pneumatic devices	259,837
5	Install excess flow valves	255,438
6	Reduced emissions through third-party damage prevention	140,130
7	Convert to instrument air systems	103,232
8	Improve system design/operation	92,560
9	Inject blowdown gas into low pressure mains or fuel gas system	81,973
10	Use pipeline pump-down techniques to lower gas line pressure	80,500

Notes:

"Top technologies" are those that led to the greatest cumulative, partner-reported, methane reductions over the specified time period.

Visit the Natural Gas STAR's Recommended Technologies for more information.

United States Environmental Protection Agency

Dominion Energy West Virginia

Joined Natural Gas STAR in 2015

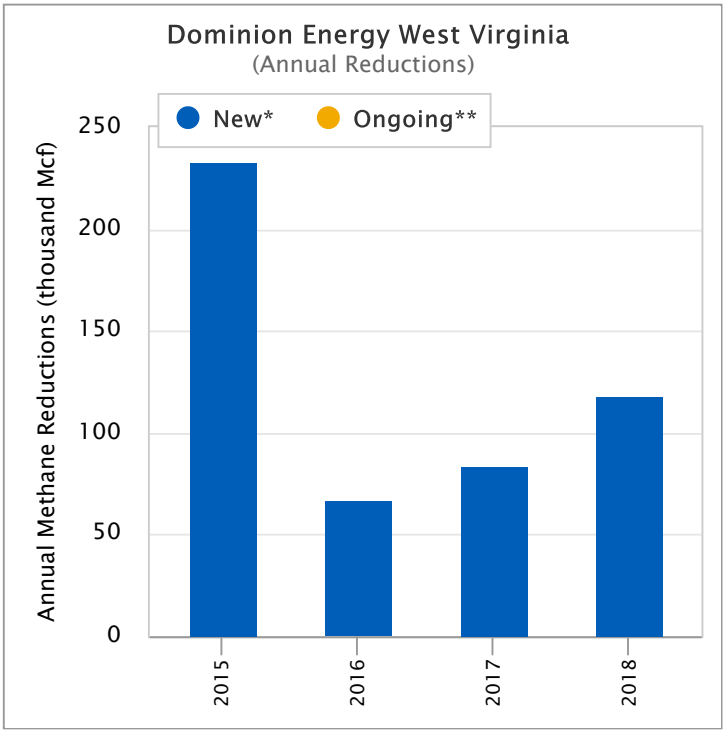
2018 Natural Gas STAR Summary Report

Segment: Distribution

Since the inception of the program in 1993, domestic Natural Gas STAR partners have eliminated more than 1,634,171,832 thousand cubic feet (Mcf) of methane emissions.

53,387,917 Mcf of methane emissions have been reduced in the Distribution Segment.

This report summarizes the voluntary methane emissions reductions achieved by Dominion Energy West Virginia in the Distribution Segment under the EPA Natural Gas STAR Program.



Reductions for Dominion Energy West Virginia

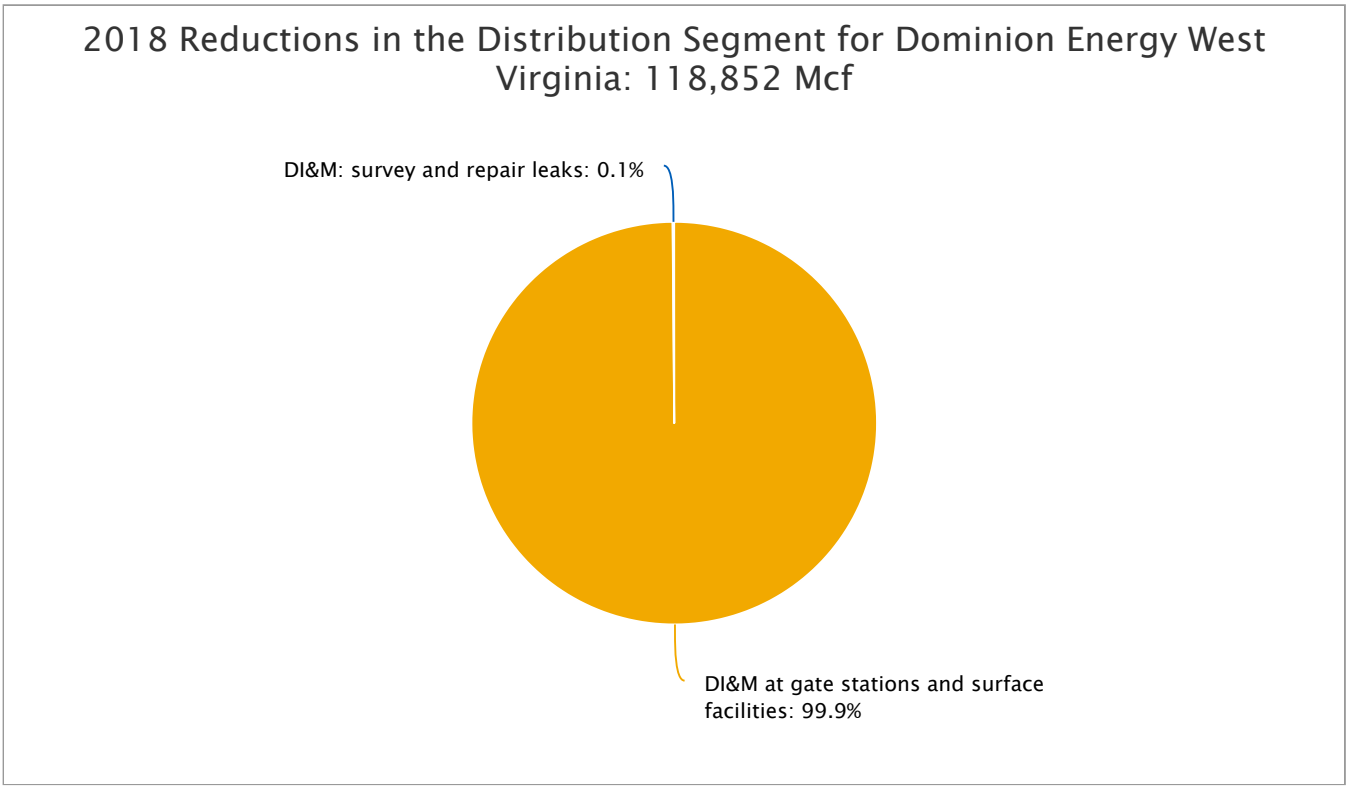
2018	Cumulative
118,852 Mcf New: 118,852 Mcf Ongoing: 0 Mcf	**502,929 Mcf**

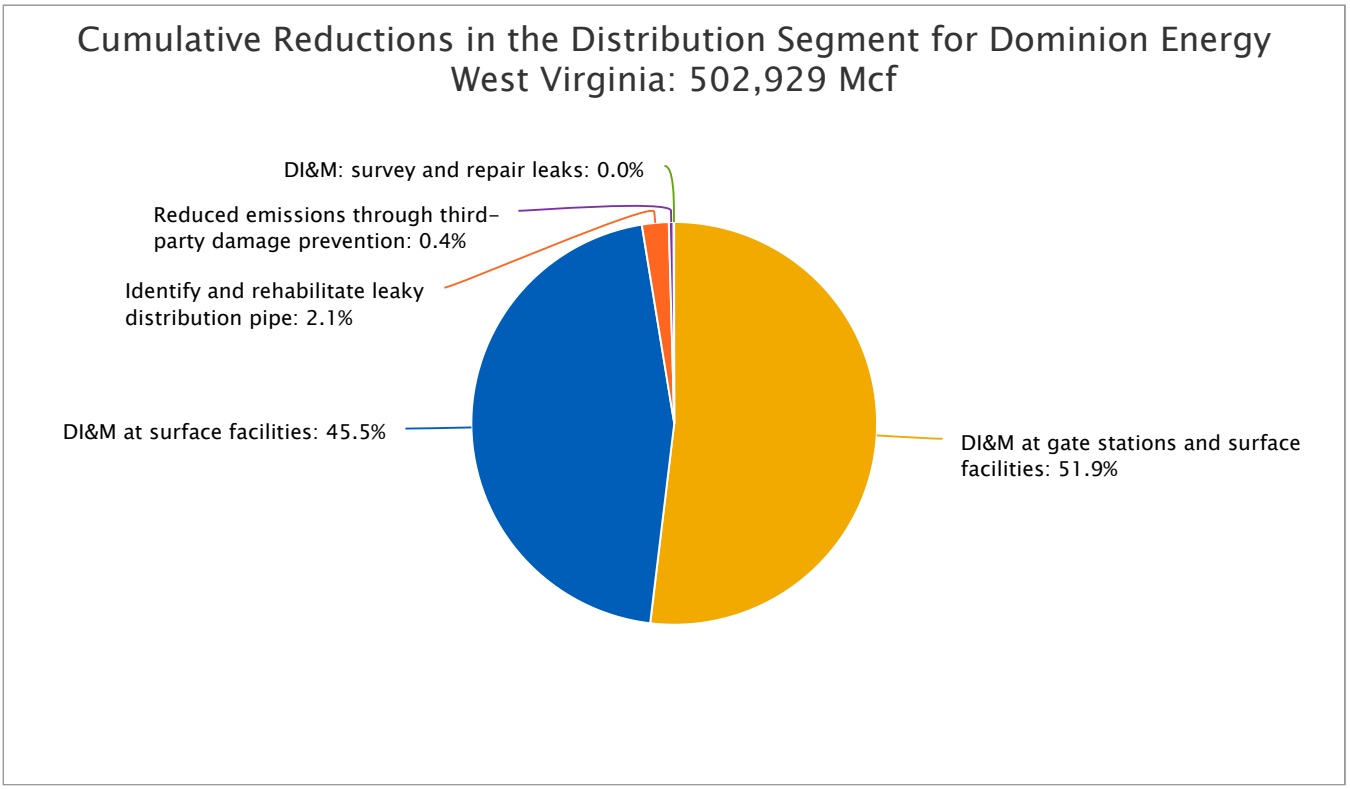
Methane Emission Reduction Equivalencies See EPA's Greenhouse Gas Equivalencies Calculator for additional equivalencies and details about the conversion units.	**2018 (118,852 Mcf)**	**Cumulative (502,929 Mcf)**
Metric tons (MT) CO_2 equivalent	57,049 $MTCO_2e$	241,405 $MTCO_2e$
CO_2 emissions from the energy used by this many homes in one year	6,832 homes	28,911 homes
Carbon sequestered from this many acres of U.S. forests in one year	67,116 acres	284,006 acres
Value of methane saved (at $3 per Mcf)	$356,556	$1,508,788

* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Dominion Energy West Virginia Methane Emission Reduction Technologies and Practices

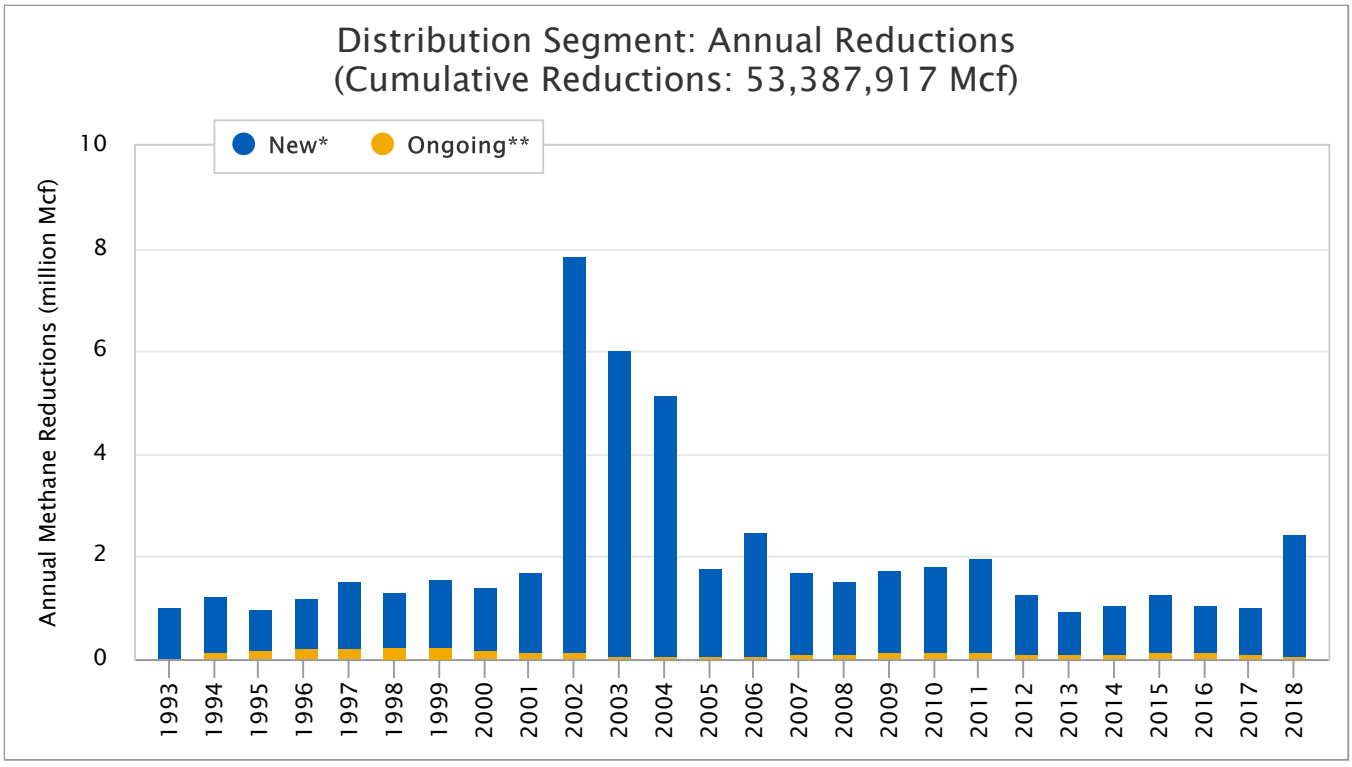


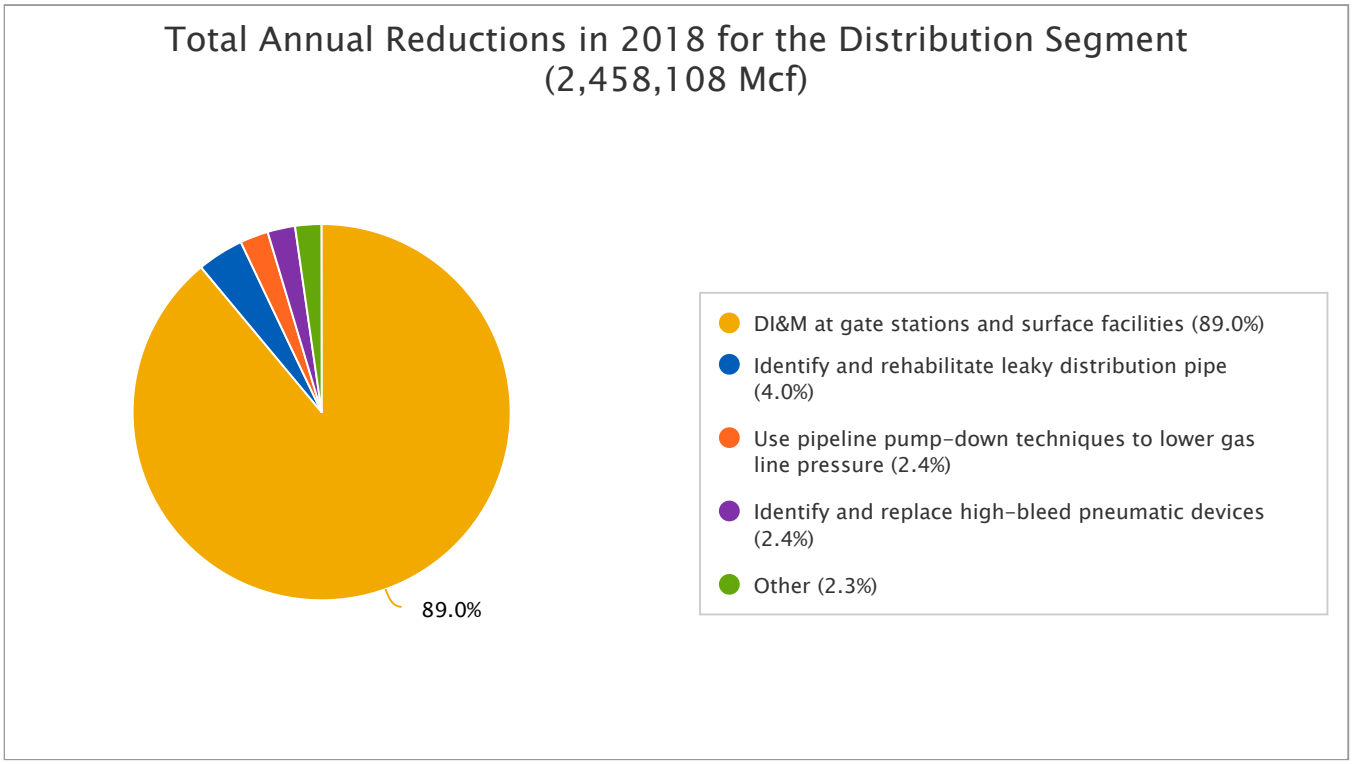


"Cumulative reductions" are all reductions achieved by Dominion Energy West Virginia in the Distribution Segment since joining the program.

Based on data available as of 11/26/2019

Summary of Technologies and Practices for the Distribution Segment





* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Top Technologies and Practices for the Distribution Segment

Top 10 Technologies and Practices in the Distribution Segment Reported by Partners in the Last 5 Years (2014 to 2018)

Rank	Technology/Practice	Reductions (Mcf)
1	DI&M at gate stations and surface facilities	2,661,255
2	Identify and rehabilitate leaky distribution pipe	2,620,500
3	DI&M at surface facilities	469,361
4	Identify and replace high-bleed pneumatic devices	259,837
5	Install excess flow valves	255,438
6	Reduced emissions through third-party damage prevention	140,130
7	Convert to instrument air systems	103,232
8	Improve system design/operation	92,560
9	Inject blowdown gas into low pressure mains or fuel gas system	81,973
10	Use pipeline pump-down techniques to lower gas line pressure	80,500

Notes:

"Top technologies" are those that led to the greatest cumulative, partner-reported, methane reductions over the specified time period.

Visit the Natural Gas STAR's Recommended Technologies for more information.

United States Environmental Protection Agency

Dominion Energy Carolina Gas Transmission

Joined Natural Gas STAR in 2016

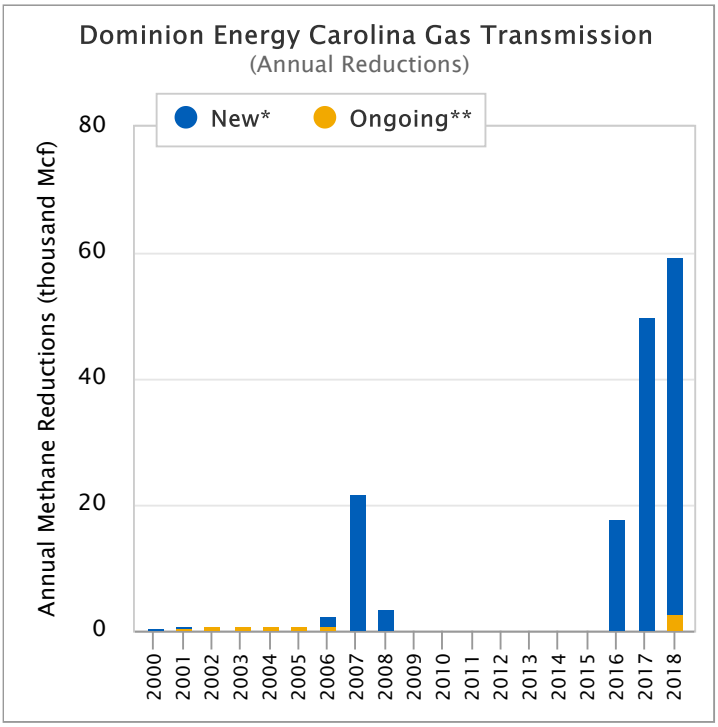
2018 Natural Gas STAR Summary Report

Segment: Transmission

Since the inception of the program in 1993, domestic Natural Gas STAR partners have eliminated more than 1,634,171,832 thousand cubic feet (Mcf) of methane emissions.

359,571,981 Mcf of methane emissions have been reduced in the Transmission Segment.

This report summarizes the voluntary methane emissions reductions achieved by Dominion Energy Carolina Gas Transmission in the Transmission Segment under the EPA Natural Gas STAR Program.



Reductions for Dominion Energy Carolina Gas Transmission

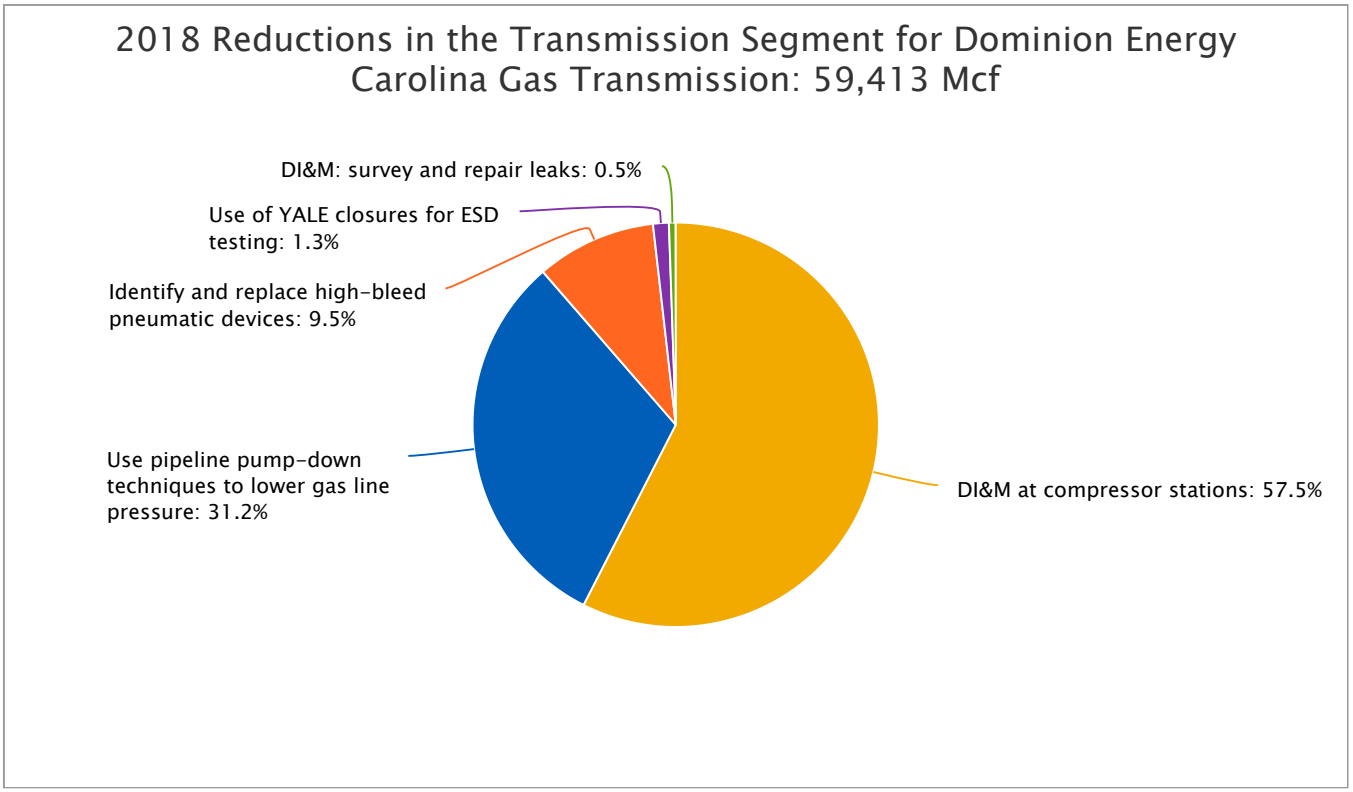
2018	Cumulative
59,413 Mcf New: 56,685 Mcf Ongoing: 2,728 Mcf	**159,733 Mcf**

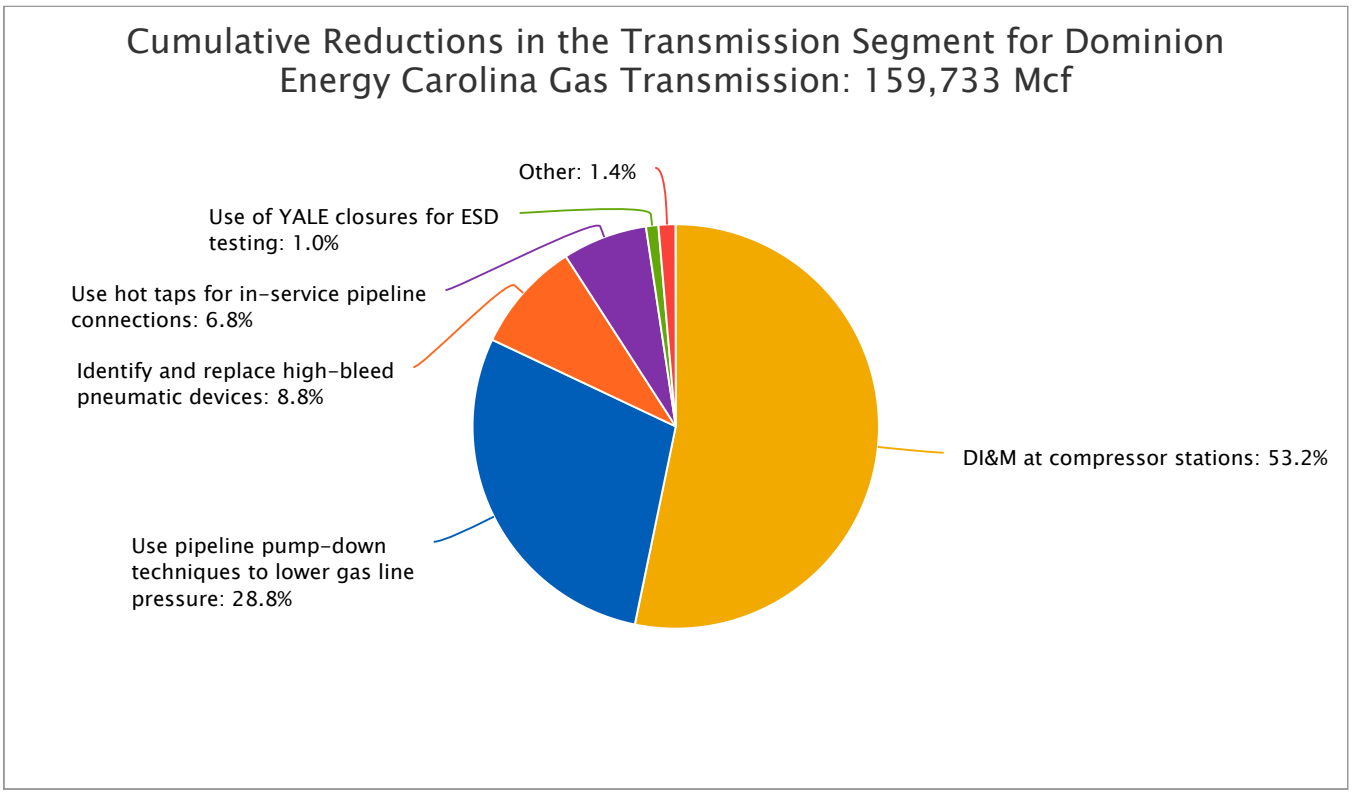
Methane Emission Reduction Equivalencies See EPA's Greenhouse Gas Equivalencies Calculator for additional equivalencies and details about the conversion units.	**2018 (59,413 Mcf)**	**Cumulative (159,733 Mcf)**
Metric tons (MT) CO_2 equivalent	28,518 $MTCO_2e$	76,671 $MTCO_2e$
CO_2 emissions from the energy used by this many homes in one year	3,415 homes	9,182 homes
Carbon sequestered from this many acres of U.S. forests in one year	33,551 acres	90,202 acres
Value of methane saved (at $3 per Mcf)	$178,238	$479,198

* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Dominion Energy Carolina Gas Transmission Methane Emission Reduction Technologies and Practices

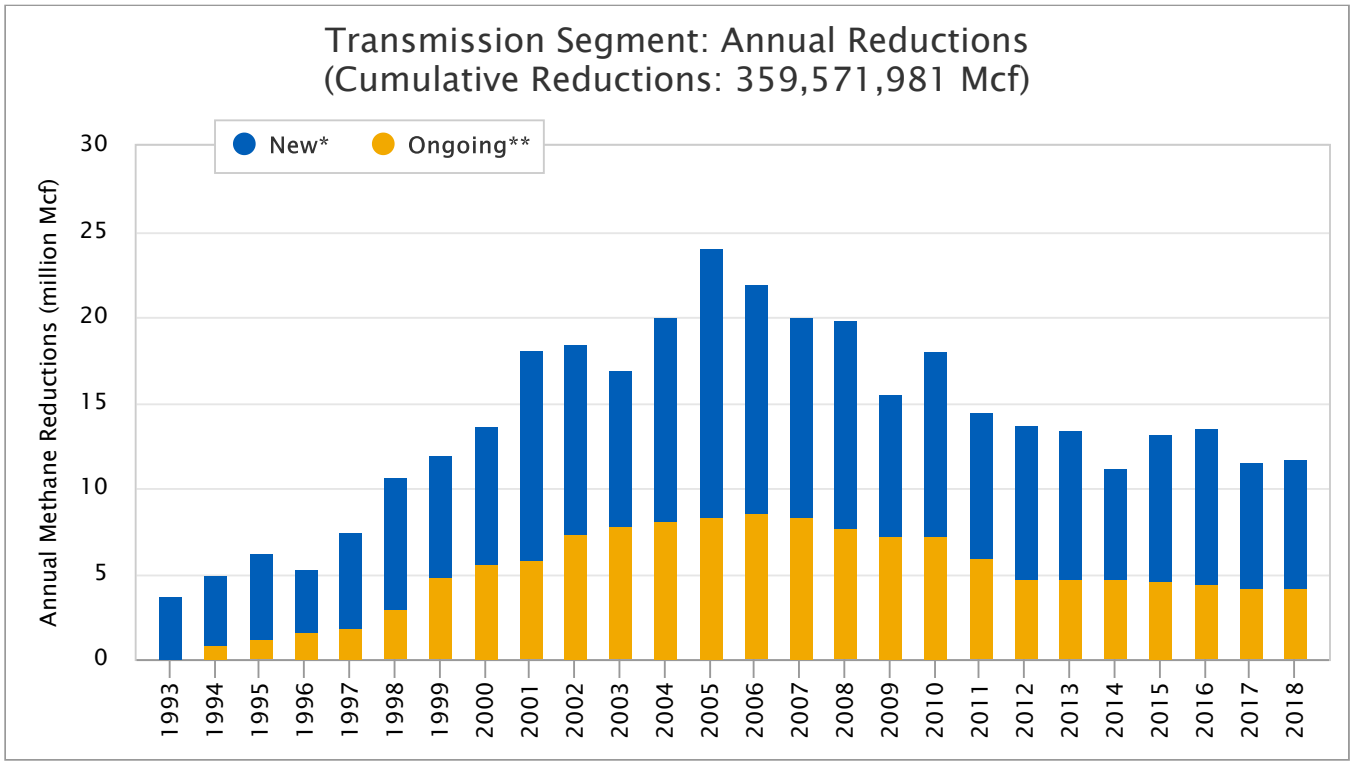


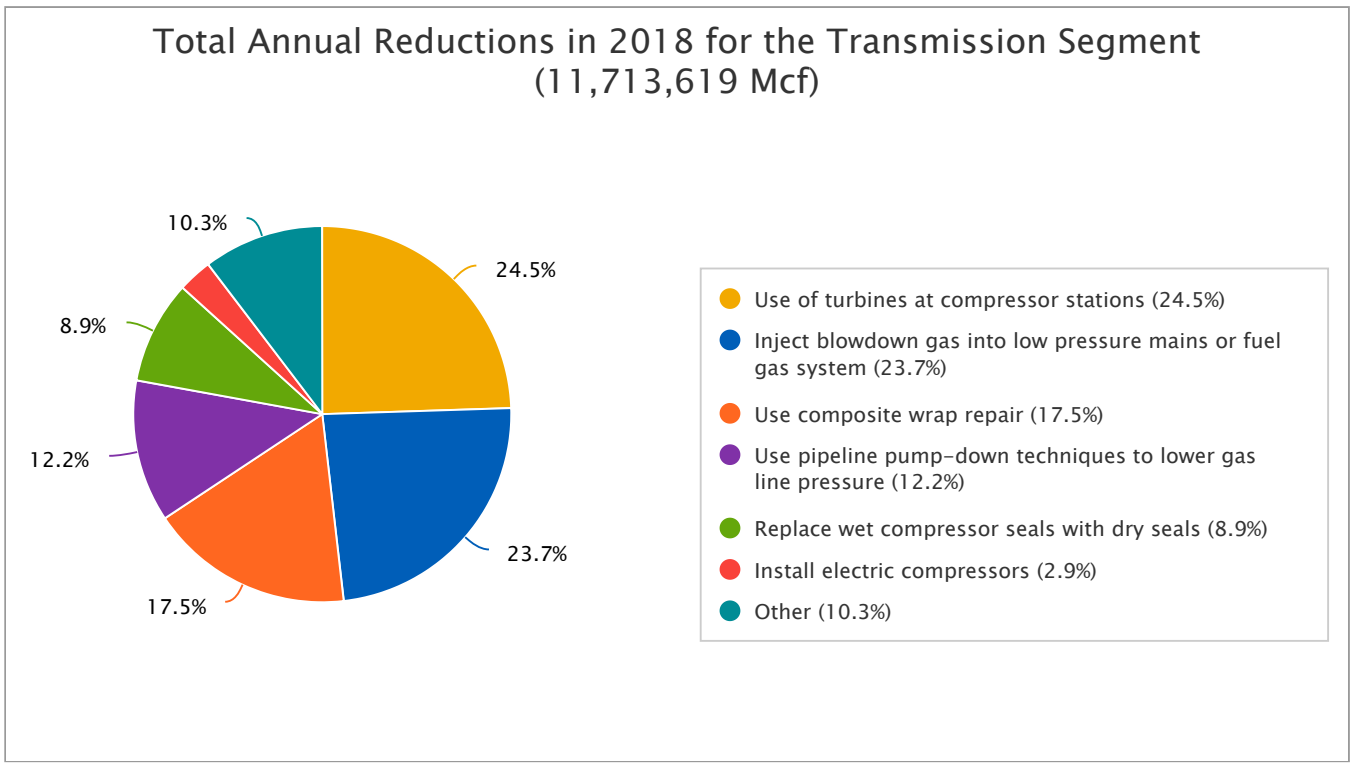


"Cumulative reductions" are all reductions achieved by Dominion Energy Carolina Gas Transmission in the Transmission Segment since joining the program.

Based on data available as of 11/26/2019

Summary of Technologies and Practices for the Transmission Segment





* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Top Technologies and Practices for the Transmission Segment

Top 10 Technologies and Practices in the Transmission Segment Reported by Partners in the Last 5 Years (2014 to 2018)

Rank	Technology/Practice	Reductions (Mcf)
1	Use of turbines at compressor stations	14,533,973
2	Use pipeline pump-down techniques to lower gas line pressure	13,232,584
3	Use composite wrap repair	11,834,680
4	Inject blowdown gas into low pressure mains or fuel gas system	7,559,078
5	Replace wet compressor seals with dry seals	5,201,682
6	Install electric compressors	2,208,676
7	Use hot taps for in-service pipeline connections	1,316,474
8	DI&M at compressor stations	979,859
9	Use of YALE closures for ESD testing	702,895
10	Pipeline replacement and repair	665,886

Notes:

"Top technologies" are those that led to the greatest cumulative, partner-reported, methane reductions over the specified time period.

Visit the Natural Gas STAR's Recommended Technologies for more information.

United States Environmental Protection Agency

NaturalGas EPA POLLUTION PREVENTER

Dominion Energy Wexpro

Joined Natural Gas STAR in 2014

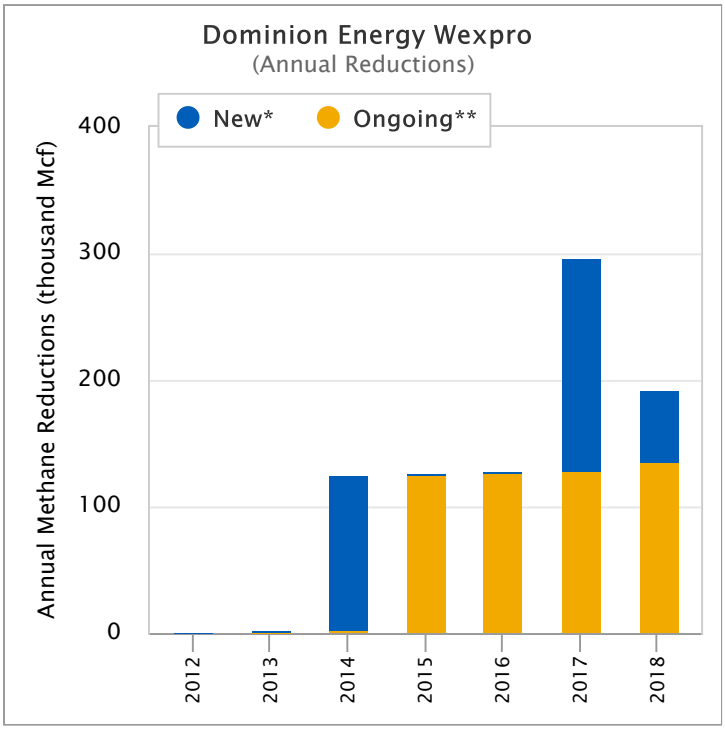
2018 Natural Gas STAR Summary Report

Segment: Production

Since the inception of the program in 1993, domestic Natural Gas STAR partners have eliminated more than 1,634,171,832 thousand cubic feet (Mcf) of methane emissions.

1,184,971,345 Mcf of methane emissions have been reduced in the Production Segment.

This report summarizes the voluntary methane emissions reductions achieved by Dominion Energy Wexpro in the Production Segment under the EPA Natural Gas STAR Program.



Reductions for Dominion Energy Wexpro

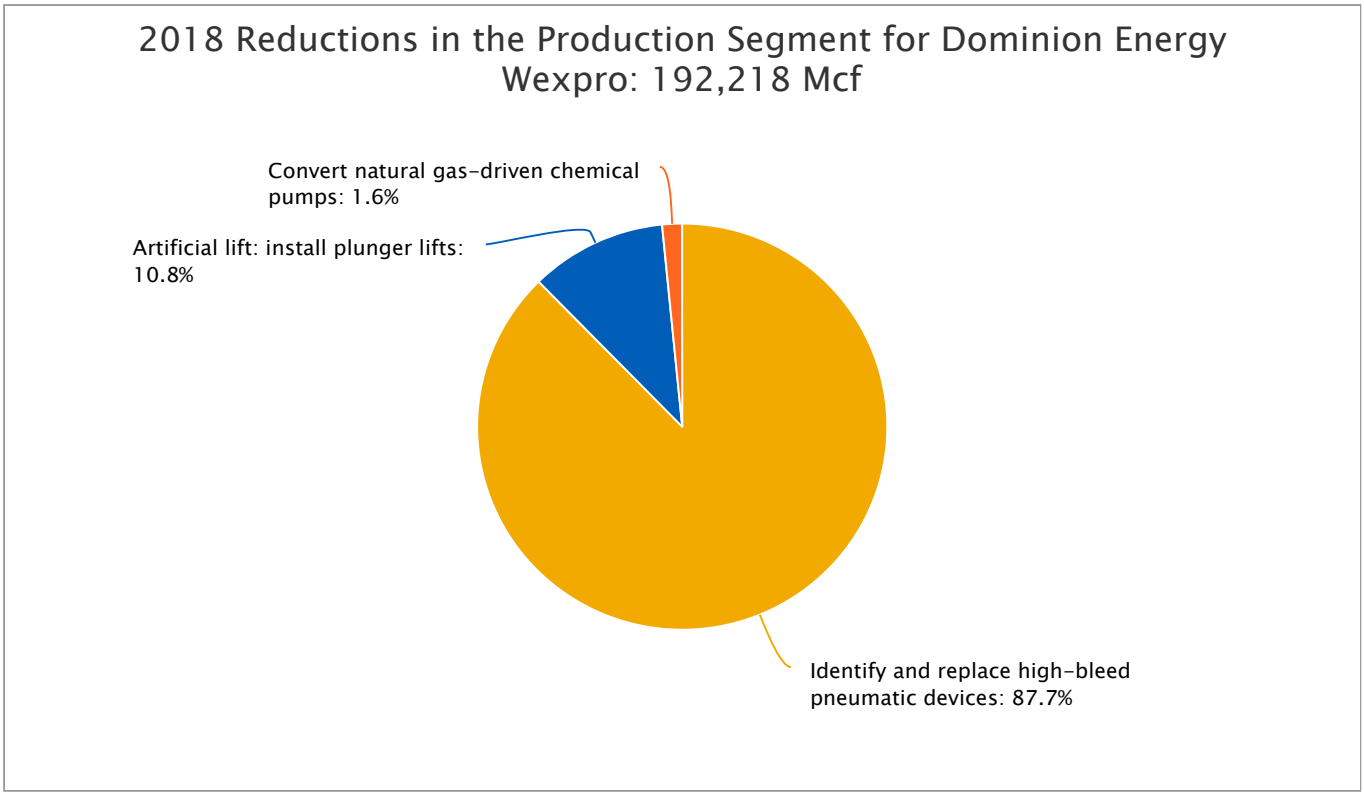
2018	Cumulative
192,218 Mcf New: 56,339 Mcf Ongoing: 135,879 Mcf	**873,474 Mcf**

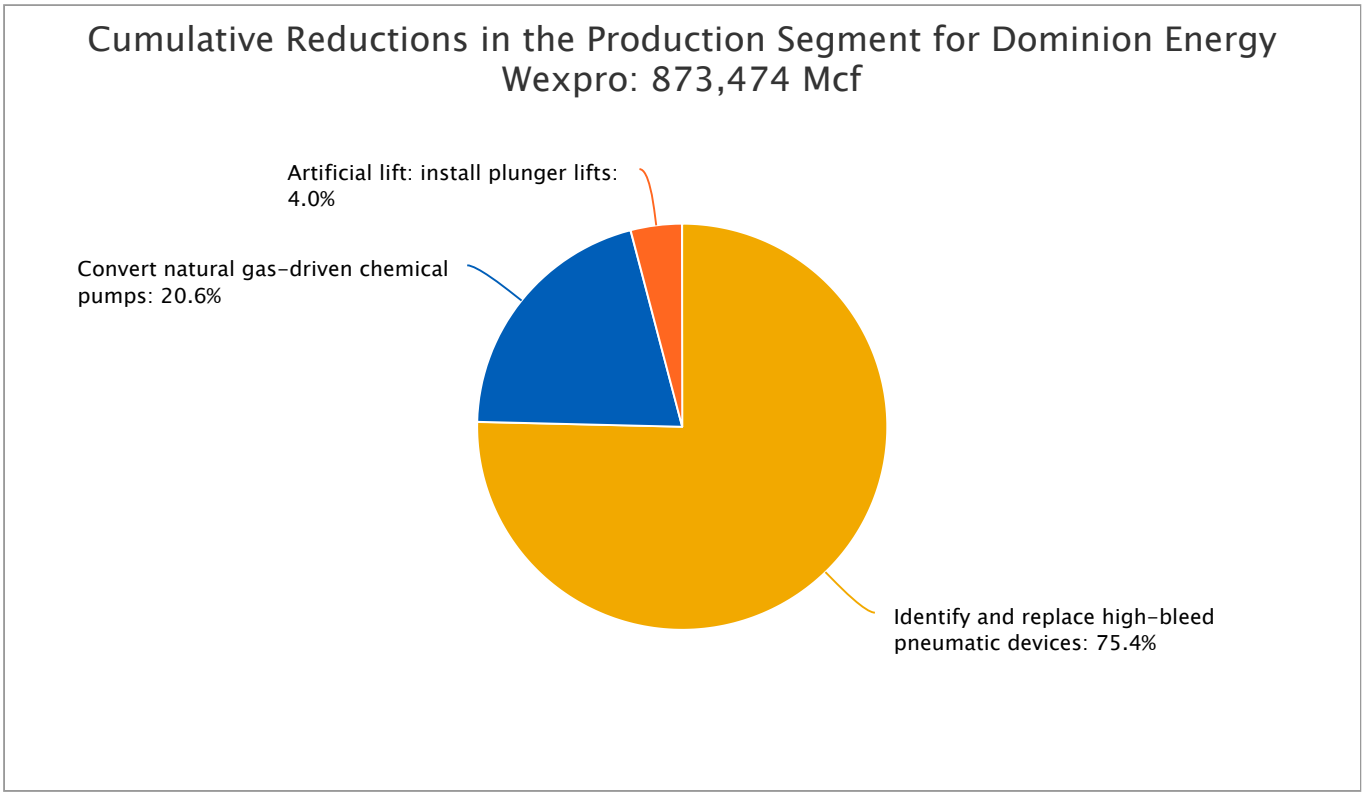
Methane Emission Reduction Equivalencies See EPA's Greenhouse Gas Equivalencies Calculator for additional equivalencies and details about the conversion units.	**2018 (192,218 Mcf)**	**Cumulative (873,474 Mcf)**
Metric tons (MT) CO_2 equivalent	92,264 $MTCO_2e$	419,266 $MTCO_2e$
CO_2 emissions from the energy used by this many homes in one year	11,050 homes	50,211 homes
Carbon sequestered from this many acres of U.S. forests in one year	108,546 acres	493,254 acres
Value of methane saved (at $3 per Mcf)	$576,654	$2,620,422

* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Dominion Energy Wexpro Methane Emission Reduction Technologies and Practices

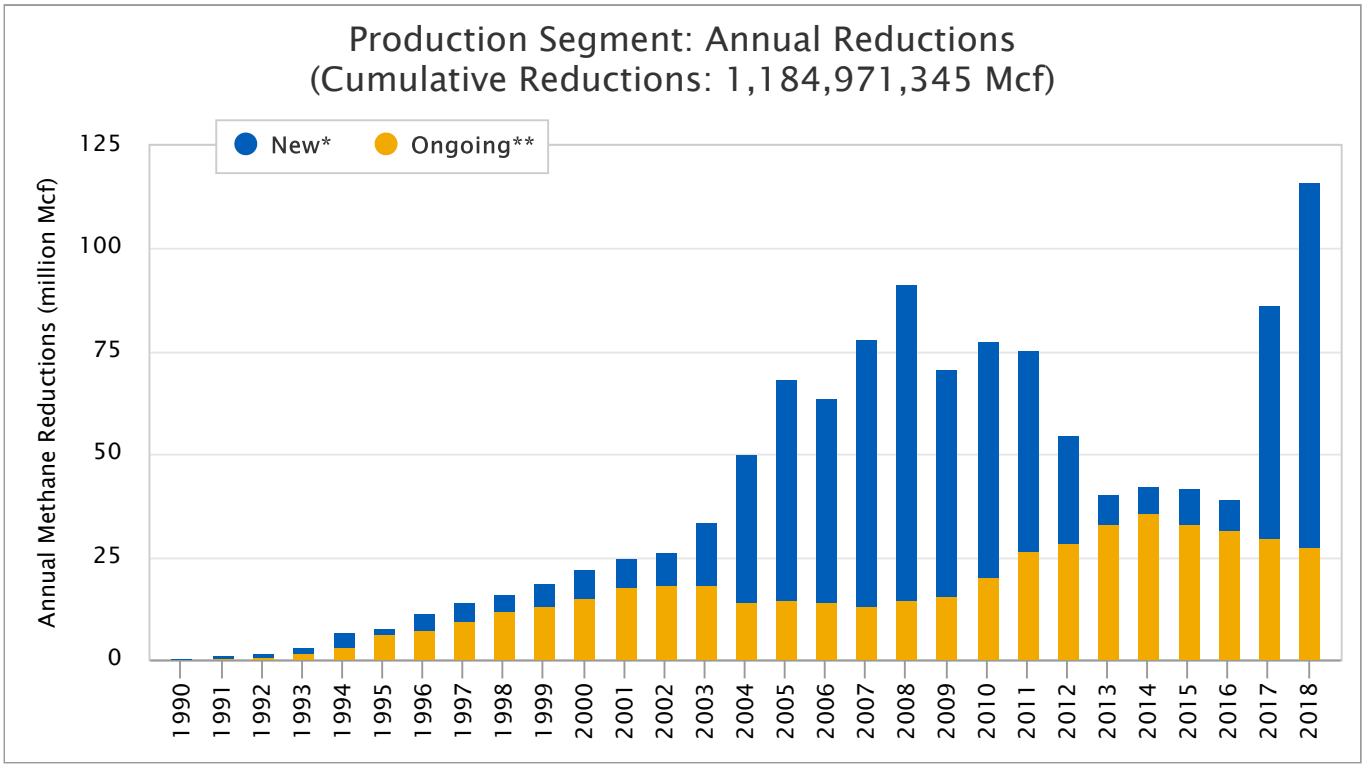


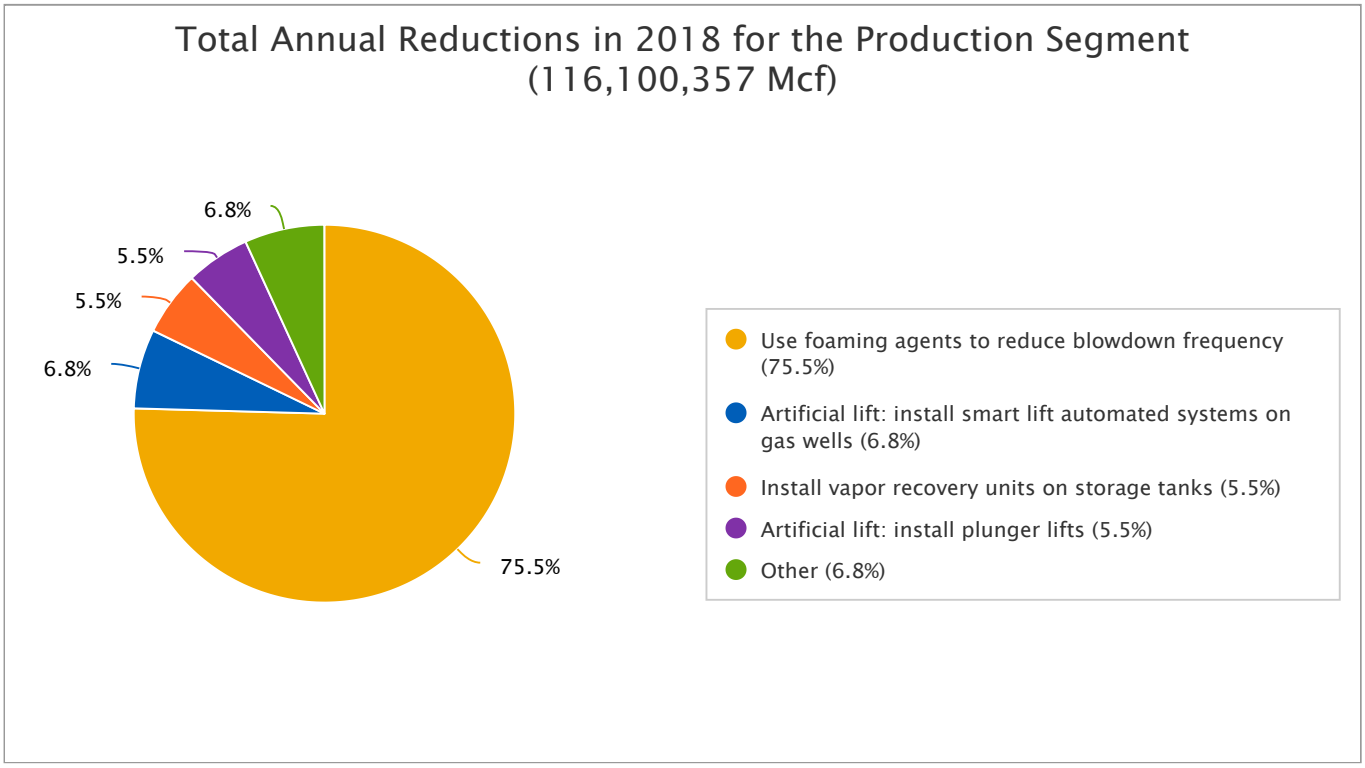


"Cumulative reductions" are all reductions achieved by Dominion Energy Wexpro in the Production Segment since joining the program.

Based on data available as of 11/26/2019

Summary of Technologies and Practices for the Production Segment





* "New" reductions refer to reductions realized the first year an activity is implemented.
** "Ongoing" reductions come from activities that are eligible to accrue methane reductions after the first year the activity is implemented. The length of time these activities can continue to accrue reductions or "sunset date" is specified for each activity.

Based on data available as of 11/26/2019

Top Technologies and Practices for the Production Segment

Top 10 Technologies and Practices in the Production Segment Reported by Partners in the Last 5 Years (2014 to 2018)

Rank	Technology/Practice	Reductions (Mcf)
1	Use foaming agents to reduce blowdown frequency	141,964,125
2	Artificial lift: install smart lift automated systems on gas wells	43,189,891
3	Artificial lift: install plunger lifts	39,473,931
4	Install vapor recovery units on storage tanks	29,143,112
5	Install/convert gas-driven pumps to electric, mechanical, or solar pumps	9,551,900
6	Install no bleed controllers	8,154,852
7	Artificial lift: gas lift	7,525,128
8	Optimize gas well unloading times	7,448,972
9	Install flares	6,011,354
10	Identify and replace high-bleed pneumatic devices	4,793,769

Notes:

"Top technologies" are those that led to the greatest cumulative, partner-reported, methane reductions over the specified time period.

Visit the Natural Gas STAR's Recommended Technologies for more information.

Appendix C Dominion Energy 2018 EPA Methane Challenge Program Annual Detailed Reports

Appendix D

Table of sources not part of traditional EPA GHGRP inventory.

No.	Sources of Methane	Applicable Segments	Calculation Methodology	Reported to EPA under GHGRP
1	Buried pipelines	TPL	ONE Future	No
2	Combustion (emergency units)	Distribution, Gathering, Processing, Storage, Transmission	EPA	No
3	Combustion (compressors)	Gathering, LNG, Processing, Storage, Transmission	Test Data	Yes *
4	Compressor blowdowns	Gathering, Production	ONE Future	No
5	Compressor starts	Gathering, Production	ONE Future	No
6	Dehydrators	Storage, Transmission	EPA	No **
7	Dehydrators (counties not listed in Subpart W spreadsheet)	Gathering	EPA	No **
8	Engine rod packing vents (SBP mode)	Gathering, LNG, Processing, Storage, Transmission	Test Data	No
9	Industrial/commercial meters	Distribution	ONE Future	No
10	Outdoor residential meters	Distribution	ONE Future	No
11	Pipeline blowdowns	Distribution	ONE Future	No
12	Pipeline dig-ins	Distribution, Gathering	ONE Future	No
13	Pneumatic controllers	Processing	EPA	No **
14	Pneumatic pumps	Storage	EPA	No **
15	Pneumatic pumps	Transmission	EPA	No **
16	Production wells (DEO, DETI)	Production	EPA	No **
17	PRV releases	Distribution, Production	ONE Future	No
18	Station blowdowns	Storage	EPA	No **
19	Tanks	Processing, Storage	EPA	No **
20	Tanks (counties not listed in Sub-part W spreadsheet)	Gathering	EPA	No **
21	Turbine dry seals	Processing, Storage, Transmission	Test Data	No
22	Vessels blowdowns	Production	ONE Future	No
23	Well fugitives	Storage	Test Data	Yes *
24	Well venting	Storage	Test Data	Yes *
	All Other Sources	Distribution, Gathering, LNG, Processing, Production, Storage, TPL, Transmission	EPA	Yes

*Note: Report to EPA following EPA methodology. For enhanced corporate inventory, use company test data.

**Note: Use EPA methodology to calculate, however, EPA does not require reporting emissions from this source for the applicable operating segments.

This report contains statements concerning Dominion Energy, Inc.'s ("Dominion Energy") expectations, plans, objectives, future financial performance and other statements that are not historical facts. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. In most cases, the reader can identify these forward-looking statements by such words as "anticipate," "estimate," "forecast," "expect," "believe," "should," "could," "plan," "may," "continue," "target" or other similar words.

Dominion Energy makes forward-looking statements with full knowledge that risks and uncertainties exist that may cause actual results to differ materially from predicted results. Factors that may cause actual results to differ are often presented with the forward-looking statements themselves. Additionally, other factors may cause actual results to differ materially from those indicated in any forward-looking statement. These factors include but are not limited to:

- Unusual weather conditions and their effect on energy sales to customers and energy commodity prices;
- Extreme weather events and other natural disasters that can cause outages and property damage to facilities;
- Federal, state and local legislative and regulatory developments, including changes in federal and state tax laws and regulations;
- Changes to federal, state and local environmental laws and regulations, including those related to climate change, the tightening of emission or discharge limits for greenhouse gases and other substances, more extensive permitting requirements and the regulation of additional substances;
- Cost of environmental compliance, including those costs related to climate change;
- Changes in implementation and enforcement practices of regulators relating to environmental standards and litigation exposure for remedial activities;
- Difficulty in anticipating mitigation requirements associated with environmental and other regulatory approvals or related appeals;
- Risks associated with the operation of nuclear facilities, including costs associated with the disposal of spent nuclear fuel, decommissioning, plant maintenance and changes in existing regulations governing such facilities;
- Fluctuations in energy-related commodity prices;
- Global capital market conditions, including the availability of credit and the ability to obtain financing on reasonable terms;
- Changes in rating agency requirements or credit ratings and their effect on availability and cost of capital;
- Risks of operating businesses in regulated industries that are subject to changing regulatory structures;
- Impacts of acquisitions, divestitures, transfers of assets to joint ventures or Dominion Energy Midstream Partners, LP and retirements of assets based on asset portfolio reviews;
- Changes in demand for Dominion Energy's services, including industrial, commercial and residential growth or decline in Dominion Energy's service areas, changes in supplies of natural gas delivered to Dominion Energy's pipeline and processing systems, failure to maintain or replace customer contracts on favorable terms, changes in customer growth or usage patterns, including as a result of energy conservation programs, the availability of energy efficient devices and the use of distributed generation methods;
- Additional competition in industries in which Dominion Energy operates, including in electric markets in which Dominion Energy's merchant generation facilities operate, and potential competition from the development and deployment of alternative energy sources, such as self-generation and distributed generation technologies, and availability of market alternatives to large commercial and industrial customers;
- Changes in technology, particularly with respect to new, developing or alternative sources of generation and smart grid technologies;
- Changes to regulated electric rates and regulated gas distribution, transportation and storage rates, including LNG storage, collected by Dominion Energy;
- Changes in operating, maintenance and construction costs; and
- Timing and receipt of regulatory approvals necessary for planned construction or growth projects and compliance with conditions associated with such regulatory approvals.

Additionally, other risks that could cause actual results to differ from predicted results are set forth in Item 1A. Risk Factors in Dominion Energy's quarterly reports on Form 10-Q and most recent annual report on Form 10-K.

Dominion Energy's forward-looking statements are based on beliefs and assumptions using information available at the time the statements are made. Dominion Energy cautions the reader not to place undue reliance on their forward-looking statements because the assumptions, beliefs, expectations and projections about future events may, and often do, differ materially from actual results. Dominion Energy undertakes no obligation to update any forward-looking statement to reflect developments occurring after the statement is made.