

2021

Methane Report



Introduction

Dominion Energy is committed to achieving Net Zero carbon and methane emissions for scope 1 electric and gas operations, scope 2 emissions, and material categories of scope 3 emissions by 2050.

In order to track progress towards this goal, the company completes a comprehensive annual corporate inventory of greenhouse gas emissions (including sources not required to be reported to the EPA). This report provides additional details on our Scope 1 2021 corporate inventory of methane emissions.¹ Details regarding other components of Dominion Energy’s GHG inventory and green-energy programs can be found in the [Sustainability and Corporate Responsibility Report](#).

In 2021, the company continued to strategically reposition itself to focus on state-regulated and sustainability-focused utility and gas operations. Recent activities associated with this repositioning primarily include the sale of substantially all of Dominion Energy’s gas transmission and storage operations. Consistent with the GHG Protocol, the company does not take credit for divested assets when tracking and reporting reduction progress towards our Net Zero target. Given this approach, in 2021 Dominion Energy reduced methane emissions from its natural gas infrastructure business by 38 percent (from an adjusted 2010 baseline).



These emissions reductions are due in large part to Dominion Energy’s significant investments to prevent potential methane emissions from entering the atmosphere. These investments include replacing infrastructure, improving processes and systems, pursuing a wide range of voluntary initiatives, investing in innovation, and striving towards best-in-class technical excellence. Since 2010, these cumulative savings efforts have resulted in preventing more than 138,000 metric tons of methane from entering the atmosphere, which is equivalent to taking 744,000 non-EV cars off the road for a year or planting approximately 57 million new trees.²

Dominion Energy Methane Savings (Since 2010)



¹ The majority of Dominion Energy’s methane emissions come from the company’s natural gas operations. Therefore, throughout this report, all references to methane emissions and savings refer only to those emissions originating from Dominion Energy’s natural gas operations (which do not include Cove Point, LLC, for which Dominion Energy has 50 percent ownership but no operational control). Similarly, all references to “Dominion Energy,” and “the company” should be interpreted to refer only to Dominion Energy’s natural gas business.

² Methane savings have been adjusted to exclude all savings associated with transmission and storage assets sold to Berkshire Hathaway Energy in 2020.

Understanding Methane Emissions and Sources

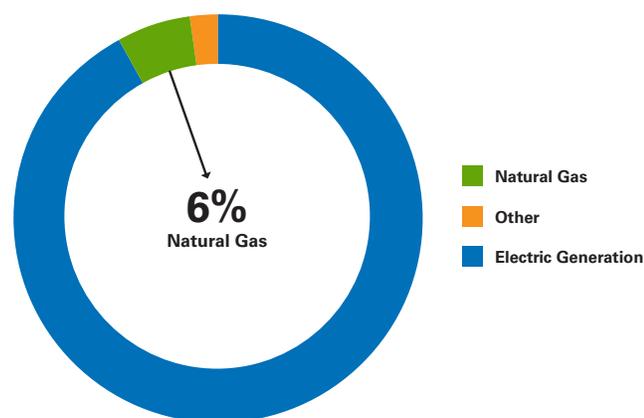
Methane Emissions in the U.S.

In 2020 (the most recent year for which data is available), methane emissions made up approximately 11 percent of all greenhouse gas emissions in the United States. Agriculture continued to be the country’s largest source of methane, accounting for approximately 39 percent — mostly from manure decomposition and the natural digestive process of livestock. The natural gas industry contributed approximately 25 percent of U.S. methane emissions, or approximately 2.8 percent of the national total of carbon dioxide equivalent (CO₂e) emissions.

Methane Emissions in Dominion Energy’s Natural Gas System

As shown in **Figure 1**, emissions from Dominion Energy’s natural gas business accounted for 6 percent of the company’s total direct CO₂e emissions in 2021.

Figure 1: 2021 Dominion Energy CO₂e Emissions^{3 4 5}



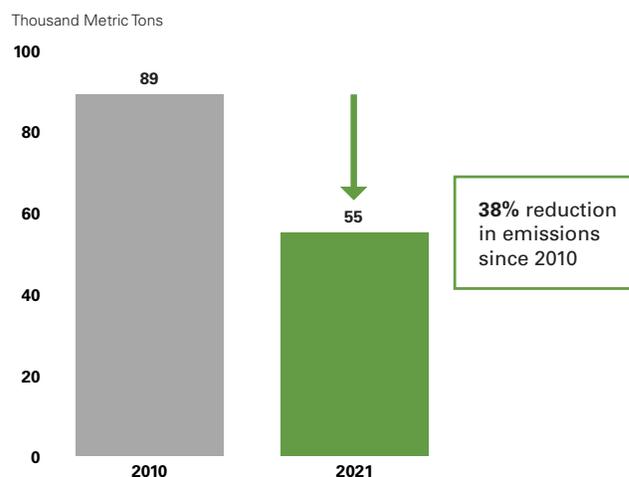
The primary sources of methane emissions from Dominion Energy’s natural gas system are: pneumatic devices; uncoated vintage pipe, valves, and fittings; customer gas meters; and releases due to third-party damages.

Each of these emission sources is subject to a variety of state and federal regulations, and Dominion Energy maintains programs to ensure strict compliance.

Methane Emissions Reductions Progress-to-Date

In 2021, Dominion Energy reduced methane emissions from its natural gas infrastructure business by 38 percent when compared to 2010. As noted previously, consistent with the GHG Protocol, this comparison is on a post-divestment, post-acquisition basis. **Figure 2** shows 2010 baseline emissions and 2021 emissions.

Figure 2: Methane Emissions from Natural Gas Operations Corporate Inventory for 2021⁶



³ Of the 6 percent of Dominion Energy’s CO₂e emissions from natural gas systems, approximately 4 percent was from methane and approximately 2 percent was from CO₂. CO₂ emissions from Dominion Energy’s natural gas business were calculated to be higher in 2021 compared to 2020 due to the new inclusion of small combustion units in the company’s GHG inventory. CO₂e emissions include carbon dioxide, methane, and nitrous oxide only.

⁴ Excludes divested gas transmission and storage assets sold to Berkshire Hathaway Energy in 2020, Questar Pipeline assets sold to Southwest Gas in 2021, and Dominion Energy West Virginia assets sold in 2022.

⁵ “Other” refers to Cove Point, LLC, for which Dominion Energy has 50 percent ownership but no operational control.

⁶ Both baseline and prior-year emissions numbers exclude divested gas transmission and storage assets sold to Berkshire Hathaway Energy in 2020, Questar Pipeline assets sold to Southwest Gas in 2021, and Dominion Energy West Virginia assets sold in 2022; and include Marathon and Trailblazer upstream assets acquired in 2020 and 2021.

Dominion Energy's Methane Emission Savings and Reduction Initiatives

Best Management Practices

Dominion Energy's progress to date in reducing emissions is due in large part to the company's implementation of Best Management Practices (BMPs) that help prevent methane from being emitted from natural gas equipment. **Table 1** details several of the most successful BMPs implemented by Dominion Energy in pursuit of the company's methane emissions reduction commitments.



Table 1: Dominion Energy Best Management Practices for Reducing Methane Emissions

BMP	Description
Voluntary Leak Detection and Repair (LDAR)	Identification and repair of gas leaks above and beyond LDAR activities required by state and federal environmental regulations.
Replacement of Pneumatic Devices	Conversion of high-bleed natural gas-powered pneumatic control systems to low-bleed/no-bleed or instrument air control systems reduces or eliminates methane emissions.
Use of Turbines for Compression	In some cases, replacing older units with turbines reduces emissions caused by methane slip (unburned methane entrained in exhaust released to atmosphere).
Replacement of Vintage Pipelines	Replacement of unprotected steel and cast-iron pipelines and services with plastic or coated steel reduces the potential for leaking methane emissions.
Minimize Maintenance Releases	Includes several methods of reducing methane emissions associated with maintenance activities. For example, pipelines being worked on are bypassed so that natural gas does not flow through them during maintenance work. Pipeline pump-down methods such as portable compression are used to minimize the amount of natural gas contained in a pipeline prior to the line being opened to the atmosphere. Similarly, when natural gas compressors are vented to take them off-line, vented gas can be recovered by connecting vent lines to the fuel gas system or to a low-pressure pipeline.
Install Plunger Lifts	Using plunger lifts to remove fluids that accumulate in gas wells is a cost-effective way of increasing production while reducing methane-emitting well venting.
Excavation Damages	Annual public awareness campaigns, 811 posters, and television advertising to help minimize unintentional releases caused by excavation damage to pipelines.
Hot Taps	Hot tapping is a safe and effective procedure that allows a new pipeline connection to be made while the pipeline remains in service, thereby eliminating the need to shut down the pipeline and vent gas to the atmosphere prior to making the connection.
Rod Packing Replacement	More frequent monitoring and replacement of rod packing systems in reciprocating compressors can minimize leaks and extend the life of compressor rods.
Install Electric Motor Starters	Converting motor starters from natural gas to electric prevents methane emissions from being vented or leaked to the atmosphere.
Install Ultrasonic Meters	Ultrasonic flow rate meters, unlike orifice meters, do not require a pipeline shutdown to calibrate the device, therefore minimizing emissions to the atmosphere.

In addition to implementation of established BMPs, Dominion Energy has several pilot programs in place to seek innovative ways to quantify and reduce methane emissions. For example, our gas distribution businesses performed field measurement studies to validate methane emissions factors for gathering and boosting wet seal compressors and distribution plastic mains. The results of the projects concluded that alternative factors and methodologies using actual operating data more accurately represent methane emissions in these categories. The new calculation methodologies for Gas Distribution are reflected in the 2021 Corporate Inventory (though reporting to the EPA will continue to follow GHGRP protocol).

Natural Gas STAR and Methane Challenge Methane Savings

Dominion Energy has been a founding member or leading participant in several landmark methane emissions savings and benchmarking initiatives, including the EPA’s Natural Gas Star (NgSTAR) Program, the EPA’s Methane Challenge Program, the ONE Future Coalition, and the Natural Gas Sustainability Initiative (NGSI).

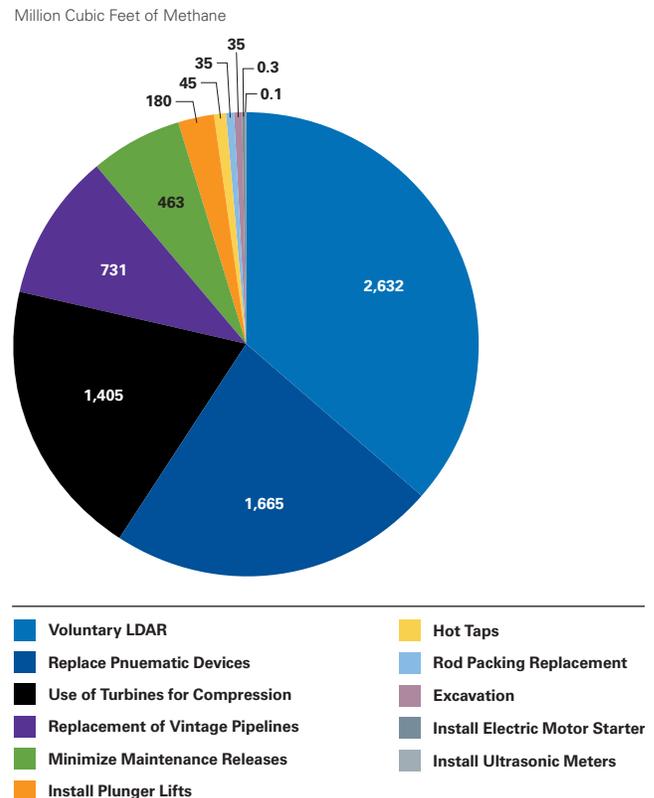
Figure 3 shows cumulative methane emission savings credits calculated under the NgSTAR and Methane Challenge Programs for Dominion Energy’s natural gas businesses, as well as additional savings. Copies of the full reports showing methane emission savings and cumulative credits attributed to Dominion Energy for each NgSTAR and Methane Challenge Report will be available at the links below, once the reports are published by EPA.^{7 8 9}

EPA Partner Profile websites which include Dominion Energy’s annual reports under the Methane Challenge Program:

- [DEUWI](#)
- [DEO & DEWV](#)
- [DEWexpro](#)
- [DEQP \(Now MountainWest Pipeline\)](#)



Figure 3: Cumulative Methane Savings Achieved (2010-2021)



⁷ Emissions for these initiatives are based on the Full Corporate Inventory, which include DEWV and DEQP assets for full year of 2021.

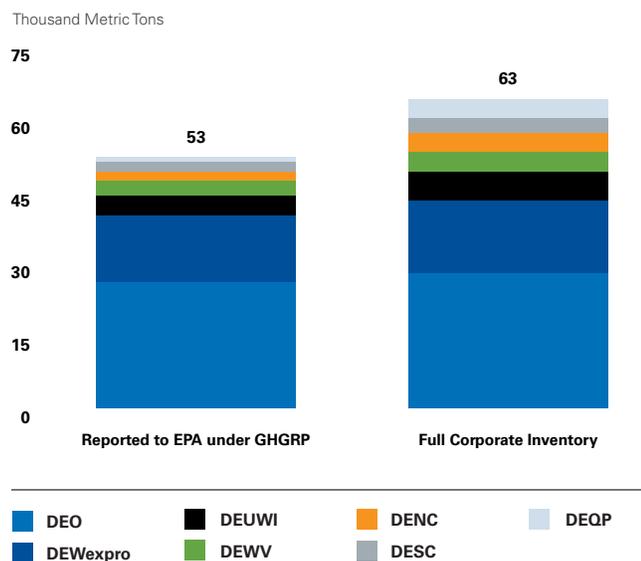
⁸ The 2021 NgSTAR and Methane Challenge reporting periods have not begun, so 2021 savings values have not been finalized.

⁹ In addition to including voluntary savings beyond those from NgSTAR and Methane Challenge programs, minor updates to previous year savings were identified through data verification and have been incorporated for additional accuracy.

How Methane Emissions Are Reported

In the interest of transparency, and because EPA’s reporting requirements exclude emissions from some minor equipment, in 2018 (reporting year 2017) Dominion Energy voluntarily adopted our own corporate inventory, which includes additional emissions sources and alternative calculation methodologies that represent a more accurate and comprehensive accounting of actual emissions across the company’s natural gas businesses. Dominion Energy continues to push for even greater transparency and accountability by integrating new, more representative methods and more comprehensive methane source inventories. **Figure 4** shows the company’s full corporate inventory of methane emissions as compared to the inventory of emissions required to be reported to EPA for 2021.

Figure 4: Dominion Energy Methane: EPA-Reported vs. Full Corporate Inventory for 2021^{10 11}



Additional Details Regarding Methane Emissions

In addition to reporting total annual emissions, Dominion Energy reports emissions on an intensity basis. Methane emissions intensity - which is calculated based on the full corporate inventory - measures methane emissions as a percentage of the total amount of gas that travels through the Dominion Energy gas delivery chain. **Table 2** provides data on total annual methane emissions and methane emissions intensity for Dominion Energy’s natural gas assets based on the company’s full corporate inventory.¹¹ In 2021, Dominion Energy’s methane emissions rate across our entire natural gas infrastructure system was 0.10 percent.

Table 2: Dominion Energy 2021 Methane Emissions by Segment

Natural Gas System Segment	Methane Intensity (%)	Methane Emissions (Metric Tons)
Production ¹²	1.68%	13,854
Gathering & Boosting	0.36%	2,905
Processing	0.07%	67
Transmission & Storage ¹³	0.01%	5,396
Distribution	0.28%	40,473
CNG	0.70%	14
Gas Delivery Chain Total	0.10%	62,709

¹⁰ EPA-reported emissions include DEQP assets and DEWV full year emissions for 2021 as required by EPA.

¹¹ The full corporate inventory includes DEWV and DEQP assets for full year of 2021.

¹² In order to reduce methane intensity, Dominion Energy plans to replace all pneumatic controllers in the Production segment with either low-bleed or no-bleed controller devices.

¹³ Includes LNG storage.

