Methane Challenge Program Implementation Plan

Partner Name

Current As Of (Date)



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Methane Challenge Commitments¹ - BMP Commitment Option

	Source	Start Date	Achievement Year
	Onshore Production		
	Pneumatic Controllers		
	Equipment Leaks/Fugitive Emissions (commitment not finalized)		
	Liquids Unloading (commitment not finalized)		
	Pneumatic Pumps (commitment not finalized)		
	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks		
	Continuous Improvement Source (TBD)		
	Continuous Improvement Source (TBD)		
Gathering and Boosting			
	Pneumatic Controllers		
	Equipment Leaks/Fugitive Emissions (commitment not finalized)		
	Pneumatic Pumps (commitment not finalized)		
	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks		
	Reciprocating Compressors - Rod Packing Vent		
	Centrifugal Compressors - Venting		
	Continuous Improvement Source (TBD)		
	Continuous Improvement Source (TBD)		
Natural Gas (NG) Processing			
	Reciprocating Compressors - Rod Packing Vent		
	Centrifugal Compressors - Venting		
	Continuous Improvement Source (TBD)		
	Continuous Improvement Source (TBD)		
NG Transmission & Underground Storage			
	Reciprocating Compressors - Rod Packing Vent		
	Centrifugal Compressors - Venting		
	Equipment Leaks (Compressor Blowdown and Isolation Valves)		
	Transmission Pipeline Blowdowns between Compressor Stations		
	(Commitment Rate: ; must be 50% or greater)		
	Pneumatic Controllers		
	Continuous Improvement Source (TBD)		
	Continuous Improvement Source (TBD)		
NG Distribution			
	M&R Stations/City Gates (commitment not finalized)		
	Mains – Cast Iron and Unprotected Steel (Commitment Rate:)		
	Services – Cast Iron and Unprotected Steel		
	Distribution Pipeline Blowdowns (Commitment Rate:; must be50% or greater)		
	Excavation Damages		
	Renewable Natural Gas		
	Continuous Improvement Source (TBD)		

¹ Partners may delete unused rows within the table and may duplicate rows and add relevant details as needed (e.g., a corporate parent partner that has different commitments for each LDC can duplicate relevant rows to list the commitments for each LDC).



NorthWestern Energy

Methane Challenge Implementation Plan

Company Background

NorthWestern Energy operates a natural gas system serving about 300,000 natural gas customers in Montana, South Dakota, and Nebraska. Our natural gas system contains over 2,200 miles of high-pressure transmission pipelines, more than 7,400 miles of distribution gas mains and about 285,000 gas service connections. Our gas distribution system is made up of 2,384 miles of cathodically protected coated steel lines and 4,994 miles of plastic line. We do not have any bare steel or cast iron pipelines on our system, which historically have been associated with high leak rates. We move more than 40 billion cubic feet (Bcf) of natural gas through our transmission system annually.

Compressor stations move natural gas through our intrastate transmission pipeline system, to and from our underground storage fields and to city gate stations, where odor is added and pressure is regulated for safe delivery to homes and businesses.

We own and operate 10 transmission, 4 storage, and 8 production compressor stations and 3 underground gas storage fields with a total storage capacity of 17.85 Bcf. We also receive supply from interstate and third-party pipeline sources. Compressor stations inject gas into storage fields during the summer when we can purchase gas at lower cost, transport gas through the system and withdraw gas from storage fields to increase system supply during the winter when demand is highest, and allow us to achieve system supply and demand balancing.

Commitments and Timeframes

NorthWestern Energy is committed to emission reductions across our operations and is setting the ambitious target of a net zero methane emission gas delivery system by 2050. To accomplish this goal, we plan to reduce methane emissions from our natural gas delivery system by 30 percent by 2030 from 2020 levels.

This goal builds on reductions achieved through existing programs. Meeting the challenge of a 30 percent methane emissions reduction will require commitment to new practices, exceptional performance, and innovative solutions. It will also require policy and regulated support.

To reach Net Zero by 2050, we will continue improving our operations with advanced technologies not widely available today and will explore using cleaner fuels such as RNG to further clean our gas supply. In addition, if any emissions remain after these efforts we will deploy carbon credits as an offset to achieve net zero.

Joining the Methane Challenge is one of the steps we are taking towards our goal of Net Zero. NWE was accepted into the Methane Challenge Program in February 2022. We have committed to implementing two Best Management Practice improvements to reduce our methane emissions.

Transmission Pipeline Blowdowns between Compressor Stations

The first BMP that will be implemented is a commitment to maximize blowdown gas recovery and/or emission reductions through utilization of one or more of these options to reduce methane emissions from non-emergency blowdowns by at least 50% from total potential emissions each year. Total potential emissions equal calculated emissions from all planned maintenance activities in a calendar year, assuming the pipeline is mechanically evacuated or mechanically displaced using non-hazardous means down to atmospheric pressure and no mitigation is used.

NWE's natural gas transmission pipelines typically operate under a normal operating pressure in the range of 100-1400 psig. The pipeline systems periodically require maintenance, which could be minor repairs (Class 1, non-emergency repairs) to major repairs (Class 4, requiring new sections of pipe to be installed). Prior to repair of a section of the pipe, the natural gas in the pipe will need to be released either at the operating pressure of the pipe or under reduced pressure. Methane, being the predominant component of natural gas (>95%), is released during the pipeline blowdown. As part of the commitment under the Methane Challenge program, NWE will reduce the methane emissions released during planned blowdown activities. The emissions from pipeline blowdown from unplanned or emergency events are not covered by the commitment, but we will implement best management practices, as feasible, to reduce emissions during such events.

By the end of 2022, NWE will implement a procedure for the tracking of planned outages, the amount of gas that would be released without any emission reduction measures, the emission reduction measures taken to reduce the emissions, and the amount of gas actually released with the use of the emission reduction measures.

NorthWestern Energy will mainly target emission reductions through pressure drawdowns and a reduction in distance between isolation valves using Mueller equipment prior to planned maintenance events. Several other reduction measures will be investigated for future use including but not limited to:

- Routing gas to a compressor or capture system of beneficial use;
- Routing gas to a flare;
- Routing gas to a low-pressure system, temporary resetting or bypassing pressure regulators to reduce system pressure prior to maintenance, or installing temporary connections between high and low pressure systems; and
- Utilizing hot tapping for new pipeline connections (avoiding blowdowns by keeping the pipeline in service and under pressure during the connection).

Milestones and Associated Timeframes

The emissions associated with pipeline blowdowns will be calculated during the planning phase of the projects. Engineers will calculate the amount of gas that would be blown to atmosphere if no emissions reduction measures are taken. This will be documented on the GTS Methane Reduction Blowdown report for the related project. On this same report, the emission reduction measures will be documented along with the new blowdown volume using the emission reduction measures appropriate for the project. These volumes and emissions will be submitted for tracking and recording.

Annually, the Manager of Gas Transmission Engineering and Construction will work with GTS Engineers to develop a list of all the planned outages schedules for the year. The projects will be communicated to the Supervisor of Gas Control in order to plan for pressure reductions or other mitigation measures. Calculations and data will be evaluated by management on a semiannual basis to determine progress toward their commitment. Based on the number of planned pipeline maintenance activities and associated blowdown events planned for a given calendar year, NWE will develop a plan for methane emission during blowdowns.

NG Distribution – Excavation Damages

The second BMP that will be implemented is a commitment to enhance the collection of and report on excavation damages to natural gas distribution pipelines. Excavation damage may include damage to the external coating of the pipe, or dents, scrapes, cuts, or punctures directly into the pipeline itself. Excavation damage often occurs when required One-Call notifications are not made prior to beginning excavation, digging, or plowing activities, or when calls are made but pipe is still damaged. When the location of underground facilities is not properly determined, the excavator may inadvertently – and sometimes unknowingly – damage the pipeline and its protective coating. This source covers both distribution mains and services.

Currently, we work to reduce damage incidents and associated emissions by participating in the Call Before You Dig / 811 system. We also have public safety employees who participate in contractor safety fairs and develop information for contractors on safe digging practices and the dangers associated with excavating near natural gas infrastructure. Similarly, our public safety program promotes safe digging practices for the public. This program, among other things, educates homeowners on the need to call 811 two business days (per MT state law) prior to any digging. The Methane Emissions Reduction committee will work with the Gas System Integrity and Damage Prevention departments to review the ways to collect damage data as well as possible mitigation options for reducing excavation damages. Some of the mitigation options include but are not limited to:

- Conduct incident analyses (e.g., by identifying whether excavation, locating, or One-Call practices were not sufficient) to inform process improvements and reduce excavation damages, or
- Undertake targeted programs to reduce excavation damages and/or shorten time to shutin when damages do occur, including patrolling systems when construction activity is higher, excavator education programs (811, call before you dig), identifying and implementing steps to minimize repeat offenders, and stand-by efforts.

Data Collection and Reporting

The goal is to consolidate the data we already collect, assure the accuracy of the data, and expand our data collection to cover all the metrics required for this portion of the EPA's Methane Challenge by 2027. The data elements include:

- Total number of excavation damages
- Total number of excavation damages per thousand locate calls
- Total number of excavation damages per class location (optional)

- Total number of excavation damages by pipe material (steel, cast iron, copper, plastic etc.) and part of system involved (main, service, inside meter/regulator set, etc.)
- Total number of excavation damages which resulted in a release of natural gas
- Total number of excavation damages which resulted in the pipeline being shut down
- Total number of excavation damages where the operator was given prior notification of excavation activity
- Total number of excavation damages by type that caused excavation damage incidents
- Total number of excavation damages by apparent root cause

Data will be collected and reported on annually. It will also be used to help set a company-specific goal for reducing excavation damages and/or methane emissions from excavation damages.