



Natural Gas STAR Methane Challenge Program Implementation Plan

Partner Name

Current as of (date)

Partner Implementation Manager

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Natural Gas STAR Methane Challenge Program Implementation Plan

Partner Methane Challenge Commitments¹

BMP Commitment Option

	Source	Start Date	Achievement Year
Onshore Production			
<input type="checkbox"/>	Pneumatic Controllers		
<input type="checkbox"/>	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks		
Gathering and Boosting			
<input type="checkbox"/>	Pneumatic Controllers		
<input type="checkbox"/>	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks		
<input type="checkbox"/>	Reciprocating Compressors - Rod Packing Vent		
<input type="checkbox"/>	Centrifugal Compressors - Venting		
Natural Gas (NG) Processing			
<input type="checkbox"/>	Reciprocating Compressors - Rod Packing Vent		
<input type="checkbox"/>	Centrifugal Compressors - Venting		
NG Transmission & Underground Storage			
<input type="checkbox"/>	Reciprocating Compressors - Rod Packing Vent		
<input type="checkbox"/>	Centrifugal Compressors - Venting		
<input type="checkbox"/>	Transmission Pipeline Blowdowns between Compressor Stations		
<input type="checkbox"/>	Pneumatic Controllers		
NG Distribution			
<input type="checkbox"/>	Mains – Cast Iron and Unprotected Steel (<i>Commitment Rate:</i>)		
<input type="checkbox"/>	Services – Cast Iron and Unprotected Steel		
<input type="checkbox"/>	Distribution Pipeline Blowdowns (<i>Commitment Rate:</i>)		
<input type="checkbox"/>	Excavation Damages		

Partner Methane Challenge Commitments

ONE Future Emissions Intensity Commitment Option

Segment:		Intensity Target:		Target Year:	
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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).



Methane Challenge Implementation Plan



Revision Log

Revision Number	Revision Date	Custodian	Revision Details
00	09/19/2016	Chris LaNasa	Document Creation

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1. INTRODUCTION

In March 2016, the U.S. Environmental Protection Agency (EPA) launched the Natural Gas STAR Methane Challenge Program providing a new mechanism for oil and gas companies to make and track commitments to reduce methane emissions. The new program provides a platform for Partners to showcase efforts to reduce methane emissions, improve air quality, and capture and monetize this valuable energy resource. The Methane Challenge Program provides Partners the ability to transparently report systematic and comprehensive actions to reduce methane emissions and be publicly recognized as leaders in reducing methane emissions in the United States (U.S.).

CenterPoint Energy Gas Operations (CNP) became a Founding Partner of the Methane Challenge Program at the Global Methane Forum in Washington, D.C. in March 2016 by making a commitment to implement a best management practice to reduce methane emissions. The *Natural Gas STAR Methane Challenge Program: Partnership Agreement for Best Management Practice (BMP) Commitment* was submitted prior to the Global Forum and is included in **Appendix A**.

The purpose of this Methane Challenge Implementation Plan is to provide an outline of CenterPoint Energy's commitment under the Methane Challenge Program and detail planned participation, such as anticipated rate of progress, key milestones, and context for the Implementation Plans.

2. METHANE CHALLENGE COMMITMENTS

CNP is a natural gas distribution company that operates in several states including Arkansas, Louisiana, Minnesota, Mississippi, Oklahoma, and Texas. CNP has identified the Mains - Cast Iron and Unprotected Steel BMP Commitment to address methane emissions sources. This source is described as distribution mains which natural gas is distributed via pipelines to serve a common source of supply for more than one service line. The source covers cast iron and unprotected steel mains (mains without cathodic protection). The mitigation options include the following:

- Replace cast iron mains with plastic or cathodically protected steel and replace or cathodically protect unprotected steel mains; or
- Rehabilitate cast iron and unprotected steel pipes with plastic pipe inserts, also referred to as slip-lining or u-liners, or cured-in-place liners

In March 2016 CNP submitted the Natural Gas STAR Methane Challenge Program: Partnership Agreement for Best Management Practice (BMP) Commitment which entails CNP's commitment to company-wide implementation of BMPs to reduce methane emissions from key sources by a future target date. The table below outlines the Methane Challenge commitment tier, applicable inventory, and minimum annual replacement rate per the chosen mitigation option.

Tier	Inventory of Cast Iron and Unprotected Steel Mains	% Minimum Annual Replacement/Repair
Tier 1	<500 miles	6.5%
Tier 2	500 - 1,000 miles	5%
Tier 3	1,001 - 1,500 miles	3%
Tier 4	1,501 - 3,000 miles	2%
Tier 5	> 3,000 miles	1.5%

Using the table above, the commitment is based on CNP's inventory of cast iron and unprotected steel mains as of January 1 of the year of commitment. Therefore, as of January 1st, 2016, CNP inventory of cast iron and unprotected steel mains for all states was 1,357 miles which corresponds to Tier 3. However CNP's rate of replacement of cast iron and unprotected steel over the next five years exceeds the Tier 3 rate and has committed to a more aggressive rate of 5% corresponding to Tier 2, to be achieved by 2032.

3. MILESTONES

The following table lists the type of pipe, amount to be replaced and projected milestone date for completion.

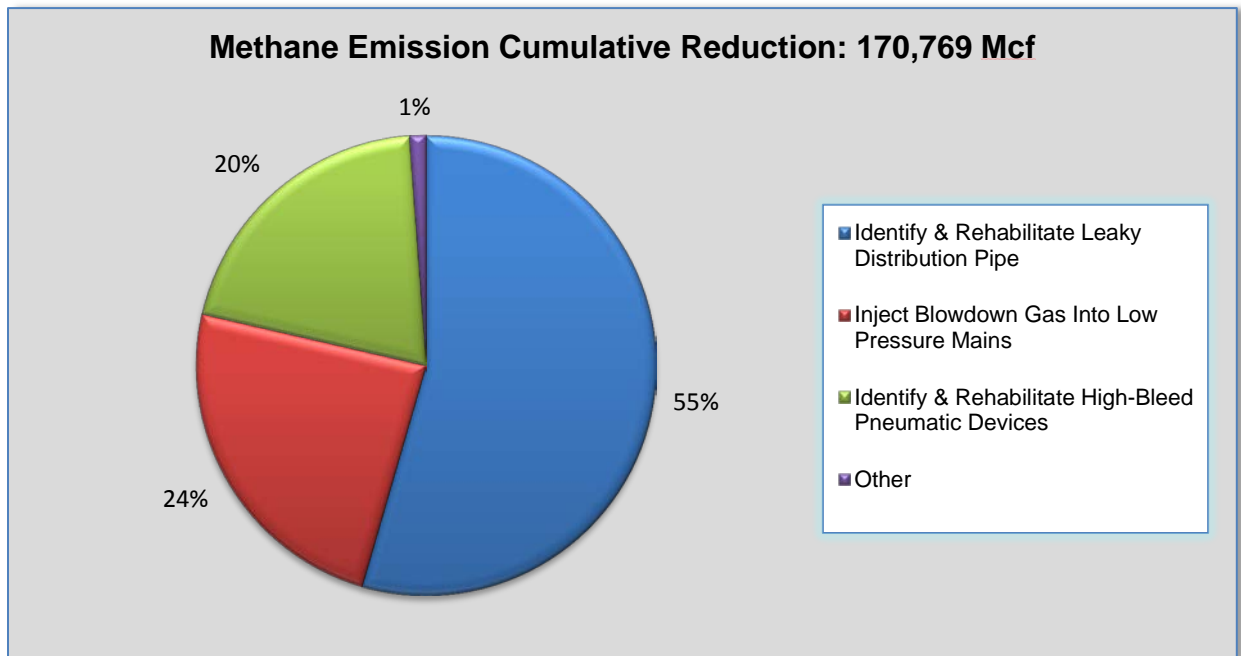
Table 2 - Pipe Replacement Milestones		
Type of Pipe	Replacement Quantity [Miles]	Completion Year
Bare/Coupled Steel	1,191.7	2032
Cast Iron	165.4	2018

5. HISTORICAL HIGHLIGHTS

CenterPoint Energy joined the EPA Natural Gas STAR Program in 1997 and continues to submit annual reporting for this program. Since joining the STAR Program, CenterPoint Energy Minnesota Gas Operations has achieved cumulative methane emissions reductions of over 170,000 million cubic feet (Mcf) through key BMPs which include:

- Identifying and Rehabilitating Leaky Distribution Pipe;
- Injecting Blowdown Gas Into Low Pressure Mains; and
- Identifying and Rehabilitating High-Bleed Pneumatic Devices

The graph below shows the distribution of methane emissions reductions using these BMPs.



CenterPoint Energy has found the STAR Program an important tool to move forward with system improvements to not only ensure system safety but to minimize methane emissions.