



## Natural Gas STAR Methane Challenge Program Implementation Plan

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**Partner Name**

**Current as of (date)**

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### Partner Implementation Manager

Name:

Title:

Address:

City/State/Zip:

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# Natural Gas STAR Methane Challenge Program Implementation Plan

## Partner Methane Challenge Commitments<sup>1</sup>

### BMP Commitment Option

Source		Start Date	Achievement Year
<b>Onshore Production</b>			
<input type="checkbox"/>	Pneumatic Controllers		
<input type="checkbox"/>	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks		
<b>Gathering and Boosting</b>			
<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		
<b>Natural Gas (NG) Processing</b>			
<input type="checkbox"/>	Reciprocating Compressors - Rod Packing Vent		
<input type="checkbox"/>	Centrifugal Compressors - Venting		
<b>NG Transmission &amp; Underground Storage</b>			
<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		
<b>NG Distribution</b>			
<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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<sup>1</sup> 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).



## Milestones/Timeframes for Meeting Commitments:

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To meet the established goals under EPA's Methane Challenge, Knoxville Utilities Board (KUB) has developed an implementation plan to complete two of the best management practices outlined in the program. The selected practices include the removal of all remaining cast iron piping in KUB's system, as well as data collection and submittal per the excavation damages best management practice program. Further discussion of the implementation details is detailed below.

### 1. Mains-Cast Iron and Unprotected Steel Mains

KUB's first commitment is to remove of all remaining cast iron main in the system. KUB has a long standing gas main replacement program that has proactively replaced a substantial amount of lower performing pipe materials from its natural gas system. Specifically, KUB has replaced approximately 150 miles of cast iron and ductile iron piping over the life of the program with over 70 miles of pipe replaced since 2006. At the time of enrollment in the Methane Challenge Program on March 30, 2016, KUB had 6,211 feet of cast iron (CI) mains in service at three locations in its natural gas distribution system. This 6,211 feet of cast iron is less than 1% of KUB total mains of its natural gas distribution system (~2,300 miles). The cast iron pipe was located at the following locations:

Location	Type	Footage
Riverline Phase 3	Cast Iron	5,999
Farragut Drive at Holston Hills	Cast Iron	50-100
Broadway Viaduct	Cast Iron	112

In the summer of 2016, KUB completed the removal of the Riverline Phase 3 Cast Iron Piping (5,999 feet) and Farragut Drive at Holston Hills piping (only 14 feet of pipe found during excavation), which effectively removed 98% of the remaining cast iron piping in KUB's system. The remaining project, the Broadway Viaduct, contains approximately 112 feet of CI main (2% of KUB's 2016 cast iron total) and will be completed in conjunction with a Tennessee Department of Transportation project in early 2017. The minimal annual replacement rate for Tier 1 Utilities (defined by EPA as <500 miles of CI and Unprotected Steel Mains) is 6.5%.

### 2. Excavation Damages

KUB's second commitment involves the enhancement and submittal of excavation damage information to the EPA. By selecting the excavation damages option as one of its commitments, KUB is required to conduct incident analyses and collect/report information for excavation damages based on a variety of criteria. These criteria may include the following: submittal of metrics including total number of damages, total number of damages per thousand locate calls, total number of damages which resulted in the release of natural gas, total number of damages which resulted in the pipeline being shut down, total number of excavation damages on pipelines with supervisory control and data acquisition, and total number of excavation damages where the operator was given prior notification of excavation activity. Additionally, EPA is requesting that enrollees submit metrics on the pipe material, part of system involved (main, service or meter), cause type (contractor, homeowner, utility, etc), and root cause (i.e. no one call notification, improper excavation practices, etc). KUB has an extensive and existing excavation damages/damage prevention program already in place that meets many of the criteria for this option and will begin submitting this information in calendar year 2017.

As required by this commitment, KUB has also recently conducted a thorough review of its excavation damage program, identifying targeted areas to increase the effectiveness of the program. These targeted areas and action



items are listed below:

1. KUB will create a "Safe Digging Guide for Excavators" to distribute to excavators in the local area. This guide will help increase awareness for local excavators about requirements prior to excavating. (December 2016)
2. KUB will increase homeowner education by increasing KUB's community outreach/public awareness through its representation at local HOA meetings, community events, and public meetings in order to educate homeowners and the community about natural gas lines. (June 2017)
3. KUB will monitor digging activities by creating a Safe Digging Hotline for internal use. KUB will promote the hotline internally and track information received. (December 2016)
4. KUB will assess its KUB contractor awareness program and implement improvements that include the following:
  - a. KUB will conduct yearly tailgate meetings on safe excavations with all KUB contractors and their employees. (December 2016)
  - b. KUB will develop and conduct a training program for contractors that have excessive at fault damages over a one year period. This program will include development of an excessive at fault damage rate, and development of a training class that highlights damage prevention laws and excavation safety. (December 2017)
5. KUB will take additional steps to decrease the possibility of excavation damages in its "Back Lot Line Mains Program." This will include the following steps: (December 2017)
  - a.) KUB will evaluate and strategically install pipeline markers in Back Lot Line areas in compliance with KUB written standards.
  - b.) KUB will develop targeted public awareness messages for residents who reside in neighborhoods where mains have been installed behind buildings.

In summary, KUB proposes implementing the above programs to reduce its 5 year average of its natural gas excavation damage metric, which at the end of calendar year 2015 was 4.7. KUB has set a goal of a 0.1 rate reduction in its natural gas system excavation damage metric per year for calendar year's 2016-2020 with a goal of achieving a natural gas excavation damage rate of less than 4.2 at the end of calendar year 2020.