

# Natural Gas STAR Methane Challenge Program Implementation Plan

Partner	Name
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**Current as of (date)** 

# **Partner Implementation Manager**

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Title:	
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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							
	Onshore Production									
	Pneumatic Controllers									
	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks									
	Gathering and Boosting									
	Pneumatic Controllers									
	Fixed Roof, Atmospheric Pressure Hydrocarbon Liquid Storage Tanks									
	Reciprocating Compressors - Rod Packing Vent									
	Centrifugal Compressors - Venting									
Natural Gas (NG) Processing										
	Reciprocating Compressors - Rod Packing Vent									
	Centrifugal Compressors - Venting									
NG Transmission & Underground Storage										
	Reciprocating Compressors - Rod Packing Vent									
	Centrifugal Compressors - Venting									
	Transmission Pipeline Blowdowns between Compressor Stations									
	Pneumatic Controllers									
NG Distribution										
	Mains – Cast Iron and Unprotected Steel (Commitment Rate: )									
	Services – Cast Iron and Unprotected Steel									
	Distribution Pipeline Blowdowns (Commitment Rate: )									
	Excavation Damages									

# **Partner Methane Challenge Commitments**

### **ONE Future Emissions Intensity Commitment Option**

Segment:	Intensity Target:	Target Year:	

<sup>&</sup>lt;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).





#### ONE Future Coalition Implementation Plan for Natural Gas STAR Methane Challenge Program

Methane Challenge commitments and projected timeframe for meeting commitments (as specified in the Partnership Agreement) [Provide information on steps for achieving commitments such as anticipated rate of progress, key milestones, or other context.]

Southwestern Energy is currently the third largest producer of natural gas in the lower 48 United States. Our primary operations areas are the Fayetteville Shale in Arkansas and the Marcellus Shale in Pennsylvania and West Virginia with additional operations in Louisiana and Colorado.

SWN supports science-based, smart policies that foster prudent practices for our industry and are implemented in a consistent manner. In 2014, SWN co-founded the Our Nation's Energy (ONE) Future coalition, a group of eight companies dedicated to reducing methane emissions across the natural gas value chain. ONE Future seeks to reduce emissions to an average annual leak/loss rate of no more than 1 percent of gross U.S. natural gas production by 2025.

SWN commits to the following methane intensity target (employing the Supplementary Technical Information for ONE Future Commitment Option and the ONE Future's Methane Emissions Estimation Protocol): 0.36% of gross production by 2025.

If SWN's methane emissions intensity is estimated to be less than 0.36%, SWN will ensure that its methane emissions intensity from US onshore production and gathering operations addressed in this implementation plan will continue to be maintained at or below 0.36% through application of appropriate cost effective methane abatement control technologies in future years (i.e. there will not be any backsliding of methane intensity rates above 0.36%). SWN may use novel R&D, Marginal Abatement Cost (MAC) studies like the ICF 2016 report commissioned by ONE Future to inform its decision on abatement options. SWN will apply the appropriate cost effective abatement options to ensure our Methane Challenge commitments are met. In addition, SWN will continue to implement its Leak Detection and Repair (LDAR) program at its facilities and submit annual progress report to the EPA's Methane Challenge unit on or before June 30th of each year.

Plans (if any) for actions to be evaluated and implemented [For example, further expansion of Methane Challenge commitments]

As noted above, should SWN's methane intensity rate (as computed by the EPA Methane Challenge ONE Future Supplementary Technical Information and ONE Future's Methane Emissions Estimation Protocol) be less than 0.36%, SWN commits to a "no backsliding" goal whereby its methane intensity rate will not exceed 0.36% in future years for the operating areas addressed in this implementation plan. As the ONE Future option is a company-wide program, all SWN assets in the addressed operating areas of this implementation plan are included in the program.

#### Additional Information/Context (optional)

[Provide other information about historical actions in advance of joining Methane Challenge, or other information on how the Program will be implemented.]

SWN has participated in the EPA Gas STAR Program. Our cumulative reported natural gas reductions since beginning that program in 2006 are more than 44.2 billion cubic feet.

	Segment*										
Name or ID	Prod	G&B	Proc	T&S	Trans PL Company	LNG Stor	LNG I/E	Distr	Calendar Year(s) of Implementation**	Comments	
Fayetteville Shale Operating Area	X								2016-2025		
Northeast Appalachia Operating Area	Х								2016-2025		
Southwest Appalachia Operating Area	X								2016-2025		
Sandwash Operating Area	X								2016-2025		
Warhawk Operating Area	Х								2016-2025		
DGC (Desoto Gathering Company)		Х							2016-2025		

#### \*Definitions (some operations/assets may fall into more than one category):

**Production:** For purposes of the Methane Challenge Program, onshore petroleum and natural gas production means all equipment on a single well-pad or associated with a single well-pad (including but not limited to compressors, generators, dehydrators, storage vessels, engines, boilers, heaters, flares, separation and processing equipment, and portable non-self-propelled equipment, which includes well drilling and completion equipment, workover equipment, and leased, rented or contracted equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of petroleum and/or natural gas (including condensate). This equipment also includes associated storage or measurement vessels, all petroleum and natural gas production equipment located on islands, artificial islands, or structures connected by a causeway to land, an island, or an artificial island. Onshore petroleum and natural gas production also means all equipment on or associated with a single enhanced oil recovery (EOR) well pad using CO2 or natural gas injection. A production facility means all natural gas equipment on a single well-pad or associated with a single well-pad and CO2 EOR operations that are under common ownership or common control including leased, rented, or contracted activities by an onshore natural gas production owner or operator and that are located in a single hydrocarbon basin as defined in 40 CFR 98.238. Where a person or entity owns or operates more than one well in a basin, then all onshore natural gas production equipment associated with all wells that the person or entity owns or operates more than one well in a basin, then all onshore natural gas production equipment associated with all wells that the person or entity owns or operates in the basin would be considered one facility.

Gathering and Boosting: For purposes of the Methane Challenge Program, onshore petroleum and natural gas gathering and boosting means gathering pipelines and other equipment used to collect petroleum and/or natural gas from onshore production gas or oil wells and used to compress, dehydrate, sweeten, or transport the petroleum and/or natural gas to a natural gas processing facility, a natural gas transmission pipeline, or a natural gas distribution pipeline. Gathering and boosting equipment includes, but is not limited to, gathering pipelines, separators, compressors, acid gas removal units, dehydrators, pneumatic devices/pumps, storage vessels, engines, boilers, heaters, and flares. Gathering and boosting equipment does not include equipment reported under any other industry segment defined in subpart W. Gathering pipelines operating on a vacuum and gathering pipelines with a gas to oil ratio (GOR) less than 300 standard cubic feet per stock tank barrel (scf/STB) are not included in this industry segment (oil here refers to hydrocarbon liquids of all API gravities).

A gathering and boosting facility for purposes of reporting under Methane Challenge means all gathering pipelines and other equipment located along those pipelines that are under common ownership or common control by a gathering and boosting system owner or operator and that are located in a single hydrocarbon basin as defined in 40 CFR 98.238. Where a person owns or operates more than one gathering and boosting system in a basin (for example, separate gathering lines that are not connected), then all gathering and boosting equipment that the person owns or operates in the basin would be considered one facility. Any gathering and boosting equipment that is associated with a single gathering and boosting system, including leased, rented, or contracted activities, is considered to be under common control of the owner or operator of the gathering and boosting system that are part of any other industry segment defined in subpart W.

Gas Processing: For purposes of the Methane Challenge Program, natural gas processing means the separation of natural gas liquids (NGLs) or non-methane gases from produced natural gas, or the separation of NGLs into one or more component mixtures. Separation includes one or more of the following: forced extraction of natural gas liquids, sulfur and carbon dioxide removal, fractionation of NGLs, or the capture of CO2 separated from natural gas streams. This segment also includes all residue gas compression equipment owned or operated by the natural gas processing plant. This industry segment includes processing plants that fractionate gas liquids, and processing plants that do not fractionate gas liquids but have an annual average throughput of 25 MMscf per day or greater.

A natural gas processing facility for the purposes of reporting under the Methane Challenge is any physical property, plant, building, structure, source, or stationary equipment in the natural gas processing industry segment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

**Transmission and Storage:** For purposes of the Methane Challenge Program, onshore natural gas transmission compression means any stationary combination of compressors that move natural gas from production fields, natural gas processing plants, or other transmission compressors through transmission pipelines to natural gas distribution pipelines, LNG storage facilities, or into underground storage. A transmission compressor station includes equipment for liquids separation, and tanks for the storage of water and hydrocarbon liquids. Residue (sales) gas compression that is part of onshore natural gas processing plants are included in the onshore natural gas processing segment and are excluded from this segment.

Underground natural gas storage means subsurface storage, including depleted gas or oil reservoirs and salt dome caverns that store natural gas that has been transferred from its original location for the primary purpose of load balancing (the process of equalizing the receipt and delivery of natural gas); natural gas underground storage processes and operations (including compression, dehydration and flow measurement, and excluding transmission pipelines); and all the wellheads connected to the compression units located at the facility that inject and recover natural gas into and from the underground reservoirs.

A natural gas transmission compression facility or underground natural gas storage facility for the purposes of reporting under the Methane Challenge is any physical property, plant, building, structure, source, or stationary equipment in the natural gas transmission compression industry segment or underground natural gas storage industry segment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

Alternate Facility Definition, Transmission Pipeline Company: For facilities covered under the ONE Future Emissions Intensity Commitment Option that do not report to Subpart W (only), a natural gas transmission compression facility or underground natural gas storage facility for the purposes of reporting under the Methane Challenge consists of an aggregation at the "Transmission Pipeline Company" level of the facilities described in the previous paragraph. See Onshore Natural Gas Transmission Pipeline definition below.

LNG Storage: For purposes of the Methane Challenge Program, LNG storage means onshore LNG storage vessels located above ground, equipment for liquefying natural gas, compressors to capture and re-liquefy boiloff-gas, re-condensers, and vaporization units for re-gasification of the liquefied natural gas. A LNG storage facility for the purposes of reporting under the Methane Challenge is any physical property, plant, building, structure, source, or stationary equipment in the LNG storage industry segment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas.

LNG Import and Export: For purposes of the Methane Challenge Program, LNG import equipment means all onshore or offshore equipment that receives imported LNG via ocean transport, stores LNG, re-gasifies LNG, and delivers regasified natural gas to a natural gas transmission or distribution system. LNG export equipment means all onshore or offshore equipment that receives natural gas, liquefies natural gas, stores LNG, and transfers the LNG via ocean transportation to any location, including locations in the United States. A LNG import and export facility for the purposes of reporting under the Methane Challenge is any physical property, plant, building, structure, source, or stationary equipment in the LNG import and export equipment industry segment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas.

Onshore Natural Gas Transmission Pipeline: For purposes of the Methane Challenge Program, onshore natural gas transmission pipeline means all natural gas pipelines that are a Federal Energy Regulatory Commission rate-regulated Interstate pipeline, a state rate-regulated Intrastate pipeline, or a pipeline that falls under the "Hinshaw Exemption" as referenced in section 1(c) of the Natural Gas Act, 15 I.S.C. 717-717(w)(1994).

An onshore natural gas transmission pipeline facility for the purpose of reporting under the Methane Challenge is the total U.S. mileage of natural gas transmission pipelines owned or operated by an onshore natural gas transmission pipeline owner or operator. If an owner or operator has multiple pipelines in the United States, the facility is considered the aggregate of those pipelines, even if they are not interconnected.

Distribution: For purposes of the Methane Challenge Program, natural gas distribution means the distribution pipelines and metering and regulating equipment at meteringregulating stations that are operated by a Local Distribution Company (LDC) within a single state that is regulated as a separate operating company by a public utility commission or that is operated as an independent municipally-owned distribution system. This segment also excludes customer meters and regulators, infrastructure, and pipelines (both interstate and intrastate) delivering natural gas directly to major industrial users and farm taps upstream of the local distribution company inlet.

A natural gas distribution facility for the purposes of reporting under the Methane Challenge is the collection of all distribution pipelines and metering-regulating stations that are operated by an LDC within a single state that is regulated as a separate operating company by a public utility commission or that are operated as an independent municipally-owned distribution system.