

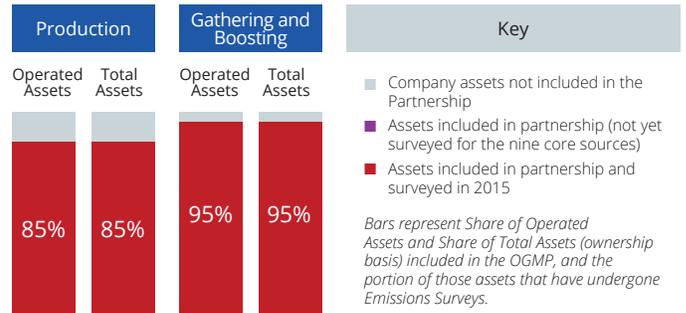
INTRODUCTION TO SOUTHWESTERN ENERGY

Southwestern Energy Company (SWN) was the first to join the OGMP, and is the only United States company currently participating. In the initial reporting year, over 85% of Production operations and 95% of Gathering and Booster operations were included in the program. SWN reported an estimated 13,819 metric tons of methane reductions. The company also implemented mitigation on sources in which they were unable to report methane reductions (e.g. liquids unloadings, compressor rod packings) due to measurement or underlying calculation requirements. Through the OGMP, SWN seeks to demonstrate leadership and share best practices with industry peers.

PROGRESS IN MITIGATING METHANE EMISSIONS

For each asset surveyed, OGMP partners screen for the presence of each of the nine core OGMP sources. Sources found to be present are then further analyzed to quantify the number of sources overall, the number of sources mitigated, and the mitigation technology or practice being used. For unmitigated sources, OGMP partners also quantify the methane emissions in order to evaluate that source for mitigation feasibility (emissions levels are not part of public reporting).

SCOPE OF PARTICIPATING ASSETS AND EMISSIONS SURVEY PROGRESS



CORE SOURCES PRESENT AT SURVEYED ASSETS

Pneumatic Controllers and Pumps	<input checked="" type="checkbox"/>
Fugitives	<input checked="" type="checkbox"/>
Centrifugal Compressors with Wet Seals	<input type="checkbox"/>
Reciprocating Compressors	<input checked="" type="checkbox"/>
Glycol Dehydrators	<input checked="" type="checkbox"/>
Storage Tanks	<input type="checkbox"/>
Liquids Unloading	<input checked="" type="checkbox"/>
Hydraulically Fractured Completions	<input checked="" type="checkbox"/>
Casinghead gas	<input type="checkbox"/>

Core Sources Present at Surveyed Assets	Mitigation Progress (%)	Total Sources Identified as Present	Emissions Reduced under Program (metric tons CH ₄)
Natural gas driven pneumatic controls and pumps	83	9,510	190
Fugitive equipment and process leaks	100	3	2,520
Reciprocating compressors rod seal/packing vents	100	418	0
Glycol dehydrators	100	128	0
Well venting for liquids unloading	39	3,693	0
Well venting/flaring during well completion for hydraulically fractured wells	100	285	11,109
	<div style="display: flex; justify-content: space-between;"> Mitigated prior to the program Mitigated within the program Unmitigated </div>		
	Total identified sources mitigated to date		

Note: With the exception of Fugitive Equipment and Process Leaks, the "Total Sources Identified as Present" column indicates the actual number of equipment or component sources or emissions events. For Fugitive Equipment and Process Leaks, the source is counted on an asset-wide basis, so the number of sources indicates the number of assets counted within the Emission Surveys. Finally, because leaks can occur at random, Fugitive mitigation action must happen on an annual basis for the source to count as mitigated. Therefore all Fugitive mitigation shows as occurring "within the program," even if the practice was in place prior to joining OGMP.

Mitigation Actions by Source*

Natural gas driven pneumatic controls and pumps

- Intermittent controllers confirmed to only emit during the de-actuation portion of a control cycle.
- Pneumatic pumps driven by solar or electric power.

Glycol dehydrators

- Dehydrator has a flash tank separator that directs gas to beneficial use or flare; no stripping gas is used in the reboiler.

Fugitive equipment and process leaks

- DI&M program in which leaking components are generally repaired within 12 months of identification.

Well venting for liquids unloading

- Gas lift or wellhead compression is used to remove or reduce liquids in the well.

Reciprocating compressors rod seal/packing vents

- Rod packing is vented to the atmosphere and rings are replaced at least every 26,000 hours or no less frequently than every three years.
- Rod packing is vented to the atmosphere, and annual emissions measurement is conducted to identify and replace rings/rods creating excessive seal/packing leakage.

Well venting/flaring during well completion for hydraulically fractured wells

- Reduced emission (green) completions are implemented, and flowback gas is routed to sales or flare as soon as feasible rather than vent to the atmosphere.

Methodology(ies) Used to Quantify Unmitigated Emissions*

Natural gas driven pneumatic controls and pumps

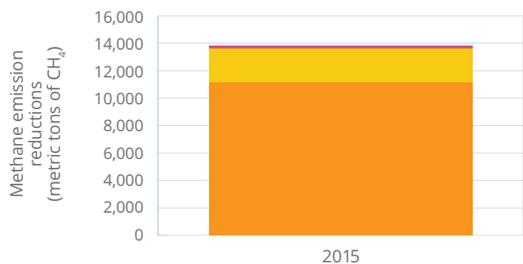
- Emission factors provided in OGMP Technical Guidance Document Number 1

Well venting for liquids unloading

- Engineering calculation as described in OGMP Technical Guidance Document Number 7

*More detailed descriptions of these actions and methodologies are found in OGMP's Technical Guidance Documents.

Methane Emissions Reductions Under the Program



Emission Source

- Natural gas driven pneumatic controls and pumps
- Fugitive equipment and process leaks
- Well venting/flaring during well completion for hydraulically fractured wells

SOUTHWESTERN ENERGY'S BACKGROUND

Southwestern Energy Company (SWN) is an independent energy company engaged in natural gas and oil exploration, development and production, natural gas gathering and marketing. SWN's core operating areas include Arkansas, Pennsylvania and West Virginia in the United States. In 2015, SWN was the third largest producer of natural gas in the United States with approximately 6,150 wells producing 976 billion cubic feet of natural gas. SWN is a co-founder of Our Nations Energy Future Coalition and EPA Natural Gas STAR Methane Challenge participant.

ABOUT THE PARTNERSHIP

The Climate and Clean Air Coalition (CCAC) has created a voluntary initiative to reduce methane emissions in the oil and gas sector: the CCAC Oil & Gas Methane Partnership. The CCAC officially launched the Partnership at the UN Secretary General's Climate Summit in New York in September 2014. To learn more about this Partnership, visit www.ccacoalition.org/en/content/ccac-oil-gas-methane-partnership.