

METHANE EMISSIONS TRACKING & DATA REPORT 2017

SoCalGas® takes pride in its long-standing commitment to reducing methane emissions from our natural gas system. We were the first California utility to publish a map that shows the general locations of sites where non-hazardous methane emissions have been detected. SoCalGas also produces an Annual Report of emissions, in compliance with California Public Utilities Commission (CPUC) and California Air Resources Board (CARB) regulations.

ADOPTING INNOVATIVE DETECTION TECHNOLOGIES

SoCalGas is a leader in using, or supporting the development of, many new technologies that allow the company to detect and repair non-hazardous leaks more quickly than ever. Some of these include:

- Using infrared cameras to check for leaks after new pipelines are installed;
- Special fiber optic cable that detects methane leaks and third-party damage to pipelines;
- Infrared “point” sensors that can detect leaks before they can be smelled by people;
- Using drones and other methods of aerial survey to spot emissions from above;
- Employing algorithms that use our [Advanced Meter](#) system to identify unusual levels of natural gas consumption that could indicate a leak at customers’ homes or businesses.

In August of 2016, SoCalGas began using an innovative technology to capture natural gas released during pipeline replacement or safety maintenance and testing. This special process allows for gas to be saved for later use while eliminating noise and emissions that would otherwise occur. SoCalGas is committed to using this innovative technology whenever its application is suitable.

ADDRESSING EMISSIONS

To address non-hazardous leaks in the company’s natural gas system, SoCalGas is conducting a comprehensive repair plan. Repair efforts were accelerated in early 2017, with the goal of repairing 50 percent of the leak backlog by the end of 2017. SoCalGas anticipates repairing all currently identified non-hazardous leaks by the end of 2018.

In addition, SoCalGas is continuing its focus on preventing third-party pipeline damage. All contractors performing excavation work for SoCalGas are now required to have completed the “Gold Shovel” program. Gold Shovel Standard certified excavators must have a demonstrated

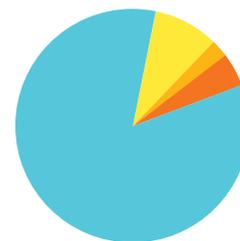
commitment to high safety standards and continued training in industry best practices. Through this process SoCalGas now has more visibility into the overall excavation safety of the contractors they hire as well as the ability to make contractors revise their excavation plans, provide additional training to their crews, and prevent unsafe contractors from bidding on company jobs.



Know what's below.
Call before you dig.

UNDERSTANDING THE LATEST DATA

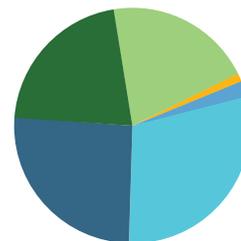
Based on this year’s SB1371 “Natural Gas Leakage Abatement” annual emission reporting calculation requirements, the overall emissions estimate for SoCalGas in 2016 is 2.7 billion cubic feet (BCF). This calculation does not include emissions from the natural gas leak at our Aliso Canyon storage reservoir, which are estimated at 0.99 BCF in 2016, and included in this year’s report. SoCalGas remains committed to mitigating the actual emissions of natural gas from the leak.



Emissions by GHG

CO ₂	84%
CH ₄	9.0%
N ₂ O	2.7%
High-GWP	4.3%

2015 Total CA Emissions: 440.4 MMTCO₂e



Sources of CH₄ in California

Landfill	21%
Industrial	20%
Other	1%
Ag-Other	3%
Ag-Enteric Fermentation	29%
Ag-Manure	26%

2015 Total CH₄ Emissions: 39.6 MMTCO₂e

To put natural gas emissions in context, very little of California’s total greenhouse gas emissions typically come from methane from natural gas systems. Most of California’s methane emissions - 80 percent - come from the agriculture and waste industries. SoCalGas delivers more than 99.5 percent of the natural gas we bring into our system. Consequently, these regulations address less than one-half of one percent of this energy source.





DECARBONIZING OUR PIPELINE SYSTEM TO TACKLE CLIMATE CHANGE

While non-hazardous leak repair will have an effect on greenhouse gas emissions in California, SoCalGas is also working on ways to address large sources of methane emissions and turn them into renewable natural gas. Eighty percent of methane emissions in California come from waste streams, like landfills and farms. Further, recent studies have shown that, since 2006, the predominate methane emissions rise in the atmosphere has been from agriculture and livestock and not from thermogenic sources like natural gas systems.¹ SoCalGas wants this wasted methane to be harnessed so that instead of contributing to climate change it can be distributed through our existing pipeline infrastructure to heat homes, cook meals, fuel heavy-duty trucks, or generate electricity as renewable energy.

Studies show California could produce enough renewable natural gas from organic waste each year to replace 75 percent of the smog-producing diesel fuel used by vehicles in our state. In fact, studies show that existing organic waste alone could supply more than 15 percent of our current natural gas demand if converted to pipeline quality renewable natural gas.

SoCalGas is taking initiatives to make it easier for renewable gas production facilities to connect to its natural gas pipeline system.² We are prepared to make infrastructure investments to maximize the production and use of renewable natural gas. And we are eager to partner with critical California industries like farms, landfills and others to develop biomethane programs and help build the market for renewable natural gas.

1. https://socalgas.com/regulatory/documents/r-15-01-008/R1501008-SCG-2017_Annual_Report_Q1Q7.pdf
2. <https://www.arb.ca.gov/cc/inventory/background/ch4.htm>
3. <http://science.sciencemag.org/content/352/6281/80>
4. <https://www.socalgas.com/smart-energy/renewable-gas>

Residential: 1-800-427-2200

Commercial: 1-800-427-2000

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