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**SoCalGas and SDG&E Comment Letter on CEC IEPR Methane Symposium**

*Additional submitted attachment is included below.*



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June 21, 2016

California Energy Commission  
Docket Office  
1516 Ninth Street  
Sacramento, CA 95814-5512

**Subject: Methane Emissions from California's Natural Gas System: Challenges and Solutions, Docket No. 16-IEPR-02**

Dear Commissioners:

Southern California Gas Company (SoCalGas) and San Diego Gas and Electric (SDG&E) thank the California Energy Commission (CEC) for hosting the Joint Agency Symposium on Methane Emissions from California's Natural Gas System: Challenges and Solutions (Methane Symposium), as part of the 2016 Integrated Energy Policy Report (IEPR) Update proceeding, on June 6-7, 2016.

The Joint Agencies' (CEC, California Public Utilities Commission (CPUC), and California Air Resources Board (ARB)) two-day workshop fostered an informative dialogue among interested parties regarding emerging technologies, latest research and areas for improvement in an effort to inform sound policies going forward.

We often hear in California that natural gas is a transitional resource to a clean and renewable energy future. Technology will demonstrate, however, that natural gas is a foundational fuel, not just a bridge fuel, to a clean energy future. Looking forward, natural gas will be a foundation for new energy pathways, delivering energy with virtually no combustion emissions and addressing emissions levels associated with the use of electricity. Ongoing efforts to reduce emissions and improve overall energy efficiency will continue to reshape our natural gas technology and end-uses.

**Sound Science Must Drive Policy Decisions**

Given today's political atmosphere, it is more important than ever to allow science and facts to drive policy. We support all efforts to understand the nature of these issues and continue funding research to promote energy efficiency and lower emitting equipment. To support climate adaptation and manage risks, we must look at a portfolio of options that deliver cost-effective pathways toward clean, yet affordable energy and a resilient California energy structure.

SoCalGas has been an industry leader on climate issues, and was a founding member of Federal Environmental Protection Agency's (EPA) Natural Gas STAR program over two decades ago where we voluntarily made efforts to reduce methane in the amount of 2.5 billion cubic feet so far. We aren't stopping either. Earlier this year both SoCalGas and SDG&E joined the EPA Methane Challenge to continue our voluntary reduction efforts. The Methane Symposium, in the context of the CEC 2016 IEPR Update, raised the issue of whether natural gas has a future as an energy source. The narrow focus of the Methane Symposium was methane from natural gas systems; however, it did not consider that most of the methane is coming from organic sources. There was no discussion on the main contributor to methane in the California atmosphere and how the natural gas system is an actual solution to reducing this biogenic contribution.

If we want to address the impact of methane emissions on climate change, then we will need to rely on expanding the gas pipeline infrastructure to interconnect with the organic sources of methane. As the most recent greenhouse gas (GHG) emissions inventory in California shows, organic sources represent over 75% of methane to atmosphere, creating an opportunity for us to deliver organic methane as a renewable energy resource to customers.<sup>1</sup> Limiting use of natural gas for political reasons undermines the necessity of pipeline delivery of methane for energy use. The CEC's IEPR should not undermine the fact that methane can be renewable.

### ***A Recent Study and the Latest EPA Inventory Indicate Emissions have Gone Down in the Natural Gas Distribution Sector***

From 2013 to 2014, SoCalGas participated in a nationwide study with the Environmental Defense Fund (EDF) and a dozen other natural gas distribution companies that found emissions have decreased in the natural gas distribution sector by as much as 36% on the low end and over 70% on the high end. These findings are now reflected in the latest EPA GHG inventory, which shows that annual emissions from these systems declined 74 percent from 1990 to 2014.<sup>2</sup> The comprehensive study published in Environmental Science & Technology and led by Dr. Brian Lamb of Washington State University (WSU) concluded that the modernization of the distribution systems, deployment of better leak detection technologies, together with agency regulations and voluntary reductions, have led to lower emissions.<sup>3</sup> For example, the California Investor-Owned Utilities (IOUs) have eliminated cast iron pipes that continue to plague the older systems on the East Coast. SoCalGas and SDG&E efficiently deliver to our customers over 99% of the gas we receive into the system each year.

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<sup>1</sup> California Air Resources Board 2014 Greenhouse Gas Emission Inventory, Sources of Methane in California. Available at <http://www.arb.ca.gov/cc/inventory/background/ch4.htm>.

<sup>2</sup> U.S. Environmental Protection Agency *Inventory of U.S. Greenhouse Gases and Sinks: 1990–2014*, Available at <https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html>

<sup>3</sup> Direct Measurements Show Decreasing Methane Emissions from Natural Gas Local Distribution Systems in the United States, March 31, 2015, Lamb, et al. Available at <http://pubs.acs.org/doi/abs/10.1021/es505116p>.

### ***A Recent Study from New Zealand Scientists Indicates that Methane in the Atmosphere Is Predominately Biogenic and Likely Related to Increased Rice Cultivation and Livestock for Food Production***

Public policy should be rooted in sound science. The latest international science shows that methane in the atmosphere is predominately coming from biogenic sources such as rice cultivation (i.e. agriculture) and dairies. We have solutions to capture those sources and inject them into our pipeline system. The CEC should not limit the opportunities and synergies of organic sources of methane with the natural gas system.

According to Dr. Hinrich Schaefer, an atmospheric scientist at the National Institute of Water and Atmospheric Research in Wellington, New Zealand, and lead author of a recent study, increasing methane levels are caused not by fossil fuel production but rather by wetlands or, more likely, agriculture.<sup>4</sup> He states, "That means we have to find ways to reduce methane emissions from rice agriculture, beef and dairy farming while still feeding the world's population if we want to mitigate climate change."

Even more recently, data compiled by the United Nations showed an increase in GHG emissions from farming and food production. "Greenhouse gases released from the growing of crops and livestock directly increased by a little more than 1 percent in 2014, compared with a year prior."<sup>5</sup> By contrast, fossil fuels accounted for about half a percent increase in the amount of GHG growth in the same time period.

### ***EPA's Own National GHG Emissions Inventory Showed Similar Enteric Trends Regarding Methane Generation***

According to EPA, enteric fermentation is the largest anthropogenic source of methane emissions in the United States. In 2014, methane emissions from enteric fermentation totaled to 164.3 MMT CO<sub>2</sub> equivalent, or 22.5% of total CH<sub>4</sub> emissions. This increase in enteric emissions from 1990 to 2014 generally follows the increase in cattle populations. Landfills are the third largest anthropogenic source of CH<sub>4</sub> emissions in the United States (148 MMT CO<sub>2</sub> Equivalent), accounting for 20.2% of total CH<sub>4</sub> emissions in 2014. From 1990 to 2014, CH<sub>4</sub> emissions from landfills decreased by 71.6 MMT CO<sub>2</sub> equivalent (38.4 percent), with small increases occurring in some interim years. This downward trend in overall emissions can be attributed to a 21% reduction in the amount of decomposable materials (i.e., paper and paperboard, food scraps, and yard trimmings) discarded in municipal solid waste (MSW) landfills over the time series (EPA 2010) and an increase in the amount of landfill gas collected and combusted (i.e., used for energy or flared), which has more than offset the additional CH<sub>4</sub> emissions resulting from an increase in the amount of municipal solid waste in landfills.

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<sup>4</sup> "A 21st-century shift from fossil-fuel to biogenic methane emissions indicated by CH<sub>4</sub>," Available at <http://science.sciencemag.org/content/352/6281/80>, April 1, 2016, Schaefer, et al.

<sup>5</sup> See "Climate Impacts From Farming Are Getting Worse," [http://www.climatecentral.org/news/farmings-climate-impact-rises-20445?utm\\_source=Inside+Climate+News&utm\\_campaign=321b866fd0-Today's+Climate12\\_10\\_2014&utm\\_medium=email&utm\\_term=0\\_29c928ffb5-321b866fd0-327747457](http://www.climatecentral.org/news/farmings-climate-impact-rises-20445?utm_source=Inside+Climate+News&utm_campaign=321b866fd0-Today's+Climate12_10_2014&utm_medium=email&utm_term=0_29c928ffb5-321b866fd0-327747457), June 14, 2016, by Climate Central.

Methane emissions from manure management have increased by 65% since 1990, from 37.2 MMT CO<sub>2</sub> Equivalent in 1990 to 61.2 MMT CO<sub>2</sub> equivalent in 2014. The majority of this increase was from swine and dairy cow manure, since the general trend in manure management is one of increasing use of liquid systems, which tend to produce greater CH<sub>4</sub> emissions.

***There are Health Benefits Related to Reducing Methane from Organic Sources, Especially for Disadvantaged Communities***

The ARB's Proposed Short-Lived Climate Pollutant (SLCP) Reduction Strategy notes that agriculture, dairies and landfills contribute over 75% to California's methane inventory.<sup>6</sup> Accordingly, ARB recognizes the utilization of organic waste streams-- including capturing biogas to be used as a transportation fuel, injected into natural gas pipelines, and used to generate on-site renewable electricity and heat--as a critical strategy to reducing methane emissions.

Methane emissions (primarily from agriculture, dairies, and landfills) will continue to be part of California's GHG inventory as they have historically, even with aggressive control technology. Capture and management of these methane emissions will have a proportionately greater impact than efforts to control CO<sub>2</sub> emissions because of the higher global warming potential of methane. Combustion of methane, i.e. conversion to CO<sub>2</sub>, reduces its global warming potential by a factor of more than 20 times. Therefore, combustion of captured or recovered methane emissions, such as renewable natural gas (RNG), will play an important role in current and future plans to reduce global warming. Accordingly, California's natural gas system is crucial to transporting RNG from organic sources to fuel transportation and electricity sectors, and could eventually displace fossil natural gas in residential and industrial sectors.

In addition, increasing the use of RNG as a transportation fuel would not only reduce methane emissions from organic waste streams, but also reduce black carbon by displacing diesel in older, conventionally fueled heavy-duty vehicles. RNG provides the single best opportunity for California to achieve both air quality and climate change goals in the on-road heavy-duty transportation sectors. Equally important, major reductions of cancer-causing toxic air contaminants can immediately be realized in disadvantaged communities adjacent to freeways and areas of high diesel engine activity, where relief is most urgently needed. This strategy would directly benefit the economically disadvantaged communities adjacent to dairies and transportation corridors traveled by trucks fueled with RNG by reducing emissions of SLCPs, improving air and water quality, and boosting economic growth. Extending natural gas infrastructure to these disadvantaged communities in conjunction with dairy-RNG pipeline interconnections could also present an opportunity to transition stationary diesel and propane end-uses to cleaner burning natural gas appliances.

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<sup>6</sup> CARB Short-Lived Climate Pollutant Reduction Proposed Strategy, 2016

**SoCalGas and SDG&E Commend ARB for Using the 100-year Global Warming Potential (GWP) Value in the State's GHG Inventory**

We acknowledge that some stakeholders have urged ARB to use a GWP value based on a 20-year time-horizon for methane, but commend ARB for underscoring during the Methane Symposium the importance of a continued use of the 100-year GWP value in the State's GHG inventory. Utilizing the 100-year GWP value ensures consistency across California and federal GHG regulatory programs, including for example, ARB's Low Carbon Fuel Standard (LCFS).

SoCalGas and SDG&E thank the CEC for the opportunity to comment and reiterate the important role natural gas serves in meeting today's energy and air quality challenges, and will continue to serve for the long term. It is an abundant domestic resource with an extensive, reliable delivery system, which provides the opportunity for the United States to gain energy independence from foreign oil; and provide affordable energy to keep consumer prices low and help businesses remain competitive. Please do not hesitate to reach out for more information.

Sincerely,

/s/ Tim Carmichael

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