From: Mendoza, Jerilyn L
To: Schenlle, Elizabeth@ARB; Wade, Samuel@ARB; Ingram, Wes@ARB; Kolesko, Kevin@ARB
Cc: Kotowski, Jack@ARB; Vergara, Floyd@ARB; Corey, Richard@ARB; Chang, Edie@ARB; Minter, George I; Morris, Jennifer H; Smith, Allison; Peacock, Tanya
Subject: RE: URGENT: SCIENTIFIC STUDY - Direct Measurements Show Decreasing Methane Emissions from Natural Gas Local Distribution Systems in the United States
Date: Monday, April 06, 2015 6:28:05 PM
Attachments: Scientific.pdf
Resending with article attached. My apologies.

SoCalGas
Sempra Energy utility

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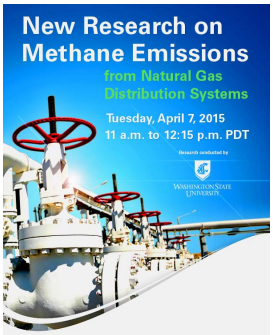
Cc: Kotowski, Jack@ARB; 'floyd.vergara@arb.ca.gov'; Corey, Richard@ARB; Chang, Edie@ARB; Minter, George I; Morris, Jennifer H; Smith, Allison; Peacock, Tanya
Subject: URGENT: SCIENTIFIC STUDY - Direct Measurements Show Decreasing Methane Emissions from Natural Gas Local Distribution Systems in the United States

For your consideration as you prepare the LCFS GREET 2.0 Model for final review by the California Air Resources Board in July, 2015, the Southern California Gas Company respectfully requests you review and incorporate the findings in the attached scientific article, "Direct Measurements Show Decreasing Methane Emissions from Natural Gas Local Distribution Systems in the United States." The article was peer-reviewed and published by Environmental Science and Technology. The study and its findings were released to the public on Tuesday, March 31, 2015. The primary investigator and author, Dr. Brian Lamb of Washington State University, made an in-person presentation to key ARB and California Energy Commission staff on Thursday, April 2 in the morning at the Cal-EPA Building in Sacramento, as well as a public presentation in person and via webinar in coordination with the California Public Utilities Commission that same afternoon. Please advise immediately if there is a separate process for submitting this study for formal ARB consideration related to the LCFS GREET 2.0 Model.

The following is the study abstract:
"Fugitive losses from natural gas distribution systems are a significant source of anthropogenic methane. Here, we report on a national sampling program to measure methane emissions from 13 urban distribution systems across the U.S. Emission factors were derived from direct measurements at 230 underground pipeline leaks and 229 metering and regulating facilities using stratified random sampling. When these new emission factors are combined with estimates for customer meters, maintenance, and upsets, and current pipeline miles and numbers of facilities, the total estimate is 393 Gg/yr with a 95% upper confidence limit of 854 Gg/yr (0.10% to 0.22% of the methane delivered nationwide). This fraction includes emissions from city gates to the customer meter, but does not include other urban sources or those downstream of customer meters. The upper confidence limit accounts for the skewed distribution of measurements, where a few large emitters accounted for most of the emissions. This emission estimate is 36% to 70% less than the 2011 EPA inventory, (based largely on 1990s emission data), and reflects significant upgrades at metering and regulating stations, improvements in leak detection and maintenance activities, as well as potential effects from differences in methodologies between the two studies."

Supporting information for the article, including the following, is available free of charge at the following website: http://pubs.acs.org:
"Project overview; study scope; local natural gas distribution systems; sampling approach; sampling strategy; stratified random sampling; representativeness of the LDC sampling regions; sample selection; emission rate measurement methods; high flow component leak measurements at TDTS and M&R facilities; surface enclosure underground pipeline leak measurements; tracer ratio leak methods for facility and pipeline leaks; isotopic methane sampling; mobile methane mapping; probabilistically modeling of mean and upper bound emission factors; probabilistic modeling methods; probabilistic modeling results; underground pipeline emissions; pipeline leak measurement results; tracer ratio results; isotopic analyses; pipeline emission factor analysis; national extrapolation of emissions from pipeline leaks; M&R facility emissions; vented
emission measurements; odorizers; pneumatic controllers; tracer ratio results; M&R facility emission factor analysis; national extrapolation of emissions from M&R facilities; national emission inventory; references; glossary; and additional figures and tables."

Finally, Dr. Lamb will be presenting his findings again via webinar at 11am on Tuesday, April 7. Please see the information below for registration details.



Join us for a one-hour educational webinar on April 7th to hear the latest research on methane emissions from local distribution of natural gas and how the data will be used to estimate emissions from distribution systems nationally.

The Environmental Defense Fund (EDF) is coordinating a series of 16 studies on methane emissions across the natural gas supply chain. On March 31, Washington State University (WSU) will publish results of its latest field study measuring methane emissions from local natural gas utility distribution systems. The new study reflects significant changes to previous estimates on methane emissions from the distribution sector.

The webinar will feature WSU's lead researcher for the report, a representative of EDF and representative from Southern California Gas Company to talk through the research findings, research methodology, and implications for California's methane emissions policy.

Webinar speakers include:

- Dr. Brian Lamb, Laboratory for Atmospheric Research, **Washington State University**
- Tim O' Connor, Senior Attorney & Director, California Climate, **Environmental Defense Fund**
- Moderator: Deanna Haines, Director of Gas Engineering, **Southern California Gas Company**

Who Should Attend:

- Environmental Leaders
- Legislators
- Legislative Staff
- Agency Representatives
- Regulatory Agency Representatives

To register, please cut and paste the following address into your browser; you will be directed to the registration site.

https://globalevents.webex.com/mw0401lp13/mywebex/default.do?nomas=true&siteurl=globalevents&service=6&rnd=0.7567123878191747&main_url=https%3A%2F%2Fglobalevents.webex.com%2Fec0701lp13%2Feventcenter%2Fevent%2FeventAction.do%3FtheAction%3Ddetail%26confViewID%3D135160465429%26EMK%3D4832534b0000000209e9fd7bb14e37950a801347e61d5e3dc3f90bc8b00afabd70975e4dc8efa6ca0%26%26%26siteurl%3Dglobalevents

Questions? Please contact:
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Please contact me with any questions or concerns. Thank you.

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