L.A. Basin methane emissions found up to 61 percent higher than estimates

Tony Barboza, Los Angeles Times, 1-14-15

A new study that used a mountaintop sensor to measure air pollution in the Los Angeles Basin found emissions of methane, a potent greenhouse gas, are up to 61% higher than government estimates.

The study published Monday in the journal Atmospheric Chemistry and Physics, is the latest to reveal official emissions inventories that underestimate the amount of the planet-warming pollutant being released into the atmosphere.

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While the research was not designed to pinpoint specific sources of methane, it employed a new technique to measure the gas that could provide important clues about where it is being released in Los Angeles and other major cities.

"This is a tremendous result from a scientific experiment," said Charles Miller, a research scientist at NASA's Jet Propulsion Laboratory and coauthor of the study. "For the first time, we have the capability of making maps, or images, of the distribution of methane across the L.A. basin."

Government and university scientists measured emissions from September 2011 to October 2013 using a remote sensor on Mt. Wilson, about 5,700 feet high in the San Gabriel Mountains. They estimated that more than 430,000 tons of methane are released each year across the region, more than would be expected by adding up emissions from all sources inventoried by the California Air Resources Board.

Scientists took measurements using a spectrometer, an instrument that can detect pollutants in the air based on the way the gases alter sunlight. They pointed the device at more than two dozen Southern California landmarks, including Angel Stadium in Anaheim and the Santa Anita Park racetrack in Arcadia, taking snapshots every 90 minutes to measure concentrations of methane and calculate a basin-wide estimate of methane emissions.

Scientists detected hot spots near major landfills, in Pasadena and across a 15-mile-wide area straddling eastern L.A. County and northern Orange County. The methane detected probably came from a variety of sources, including natural gas pipelines, vehicles, waste facilities, farms and naturally occurring seeps like the La Brea Tar Pits, they said.

California air quality regulators, who participated in the study with scientists at NASA/JPL, Caltech and the University of Michigan, said it was part of a longstanding effort to better understand where methane is being released.

Bart Croes, research director for the Air Resources Board, said the agency's own studies have also shown higher than previously estimated methane emissions. Later this year, the agency expects to release an improved statewide methane inventory and a new plan to control the pollutant.

Carbon dioxide from burning fossil fuels is the biggest contributor to climate change, but methane is many times more effective at trapping heat in the atmosphere. Scientists are uncertain about the amount of

methane being released each year from major sources like landfills, dairy farms, and oil and gas operations.

A study last year found that natural gas drilling sites in Pennsylvania were releasing methane at rates 100 to 1,000 times greater than federal regulators had estimated. Another study used satellite data to detect a higher-than-estimated hot spot of methane in the Four Corners area of the Southwest.

The latest research in Los Angeles is part of the Megacities Carbon Project that is testing new techniques to monitor trends in greenhouse gas emissions in urban areas with over 10 million residents.

The results are consistent with several previous studies of methane in Southern California, the scientists said.