

NEWS POLLUTION, CLIMATE

EPA boosts estimate of U.S. methane emissions

Contributions from natural gas, oil and landfills rise

BY THOMAS SUMNER 7:03PM, APRIL 15, 2016



METHANE MISMATCH A new report by the Environmental Protection Agency revises upward its estimates of U.S. methane emissions, such as those from natural gas wells, by more than 3.4 million metric tons.

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The U.S. Environmental Protection Agency, criticized for understating how much methane the United States spews into the atmosphere, has boosted its estimate of total U.S. methane emissions by 13 percent. That's an increase of more than 3.4 million metric tons of the greenhouse gas and has the same long-term global warming impact as a year's worth of emissions from about 20 million cars.

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The new calculation, released in an EPA report April 15, revises the agency's U.S. methane emission estimates for 2013 to 28.859 million metric tons, up from the agency's previous estimate of 25.453 million metric tons. Two-thirds of that increase comes from the natural gas and petroleum sectors, with much of the rest coming from landfills. The report also provides the first estimate of methane emissions for 2014, a slight increase to 29.233 million metric tons.

Globally, methane emissions account for about a quarter of human-caused global warming. Several studies over the last few years have suggested that EPA significantly underestimated the U.S. share of those emissions (*SN Online: 4/14/16*).

While the new methane estimates are "a step in the right direction," the agency still has a ways to go, says David Lyon, an environmental scientist at the Environmental Defense Fund. Even with the higher methane estimates, the agency is still undercounting U.S. emissions by about 20 to 60 percent, Lyon says. EPA's reporting influences U.S. regulation of methane-producing industries such as agriculture and fossil fuel production.

A sizable portion of the still-at-large methane probably comes from "super emitters," methane sources that contribute a disproportionate share of total emissions. These sources are typically malfunctioning equipment, making them difficult for EPA to account for.

Citations

Environmental Protection Agency. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. April 15, 2016.

Environmental Protection Agency. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013. April 15, 2015.

Further Reading

T. Sumner. EPA underestimates methane emissions. Science News Online, April 14, 2016.

T. Sumner. 195 nations approve historic climate accord. *Science News*. Vol. 189, January 9, 2016, p. 6.

L. Beil. Getting creative to cut methane from cows. *Science News*. Vol. 188, November 28, 2015, p. 22.

T. Sumner. Rate of atmospheric carbon dioxide rise unprecedented. *Science News*. Vol. 187, May 30, 2015, p. 15.

G. Popkin. Methane emissions may be far higher than estimated. Science News Online, November 25, 2013.

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Oliver Draeger · 4 days ago
A heretic could draw the conclusion that methane is the ideal fossil energy source because we actually reduce the greenhouse effect by burning it. Given the fact that global warming is assumed to boost decomposition of submarine methane hydrate and thus contributes to a positive feedback cycle in global warming, it even seems reasonable that we find and burn all methane hydrate resources as fast as possible in order to decelerate global warming.How ironic.
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John Turner → Oliver Draeger · 3 days ago
Yes, but the the problem is spillage and leakage. A methane hydrate mine might spill methane during operation, and since spilled methane is a thousand times as potent a greenhouse gas as burnt methane you basically have to be better than 99.9% efficient at scavenging the gas to merely break even.

As for leakage, methane leakage is rife in today's methane economy. Muckraking reporters who've done their own methane concentration maps of the LA basin (by paying testing labs to cruise the boulevards in instrumented vans) have shown that in Los Angeles alone there's at least 0.5% leakage of the total methane consumed in the region. 99.5% efficiency doesn't sound bad until you consider that the leaked methane quintuples the nearterm greenhouse impact of the area's methane consumption.

If the same 99.5% rule of thumb holds for the nation, then America is actually doing herself damage by expanding her methane economy.

One way to get around this is to "shift" the methane. You can make fuelstuffs from methane that aren't potent greenhouse gases, then move those fuelstuffs around in place of methane. Stuff like anhydrous methanol, say.

Long before current climate-change concerns, there was serious talk in the US about promoting methanol as a successor fuel to gasoline. Main downside? Lower caloric recovery per gallon, tendency to "get wet"

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Oliver Draeger → John Turner · 3 days ago
I agree to the risky side of the idea. However elsewhere they talk about ~33 times greenhouse potency of methane compared to CO2, so your figure should rather be 97% efficiency requirement or less than 3% leakage for break even, if I'm not wrong. And that is a way more comfortable distance to your mentioned 0.5% observed leakage.

After all my point was intended more as a figurative one, in order to illustrate that there are high sensitivities involved in the greenhouse business, which makes it difficult to make reliable predictions. YMMV
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manderso · 3 days ago
Since the Sanders revolution started, methane has risen in the country astronomically.
^ | v • Reply • Share ›

Dano2 · 3 days ago
NatGas is quickly unbecoming the bridge fuel. Can we stop our dangerous polluting in time?

Best,

D
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Ryan_Dyne — Fer sure! Oh! so that in turn directly implies that its efficiency is <<< 1. Hmmm; hadn't had that occur to me; thanks! Ok - and d.u.h. (on my part).

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