

Mapping methane sources in Paris

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A potent greenhouse gas, methane is released by many sources, both human and natural. Large cities emit significant amounts of methane, but in many cases the exact emission sources are unknown. Now, researchers reporting in ACS' *Environmental Science & Technology* have conducted mobile measurements of methane and its sources throughout Paris. Their findings suggest that the natural gas distribution network, the sewage system and furnaces of buildings are ideal targets for methane reduction efforts.

In cities, major sources of atmospheric methane include heating systems, landfills, wastewater and road transport. Plans for reducing [greenhouse gas emissions](#) have been enacted for the city of Paris, but to be successful in reducing [methane emissions](#), sources in the city need to be precisely mapped and quantified. To draw a baseline to assess future mitigation policies and actions, Sara Defratyka and colleagues conducted repeated mobile measurements around the city to identify methane leaks.

The researchers conducted 17 street-level surveys throughout Paris from September 2018 to March 2019. The team used either vehicle-mounted instruments or portable instruments for walking measurements to detect methane and its probable source, based on the gas's isotopic signature. A total of 90 potential methane leaks were detected in Paris, with 27 of them identified. Of these, 63% of emissions came from natural gas distribution networks, 33% from sewage networks and 4% from heating furnaces of buildings.

Based on these findings, the researchers estimated that the total methane emission rate of Paris is about 190 metric tons per year. The actual number is likely higher because not all streets were surveyed, and the method does not report mobile methane sources from road transport, the researchers say.

More information: Sara M. Defratyka et al, Mapping Urban Methane Sources in Paris, France, *Environmental Science & Technology* (2021). [DOI: 10.1021/acs.est.1c00859](https://doi.org/10.1021/acs.est.1c00859)

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