



Aerial view of Aliso Canyon and the Porter Ranch neighborhood.
Photo: LA County Department of Public Health.

Almost exactly 10 years ago, I got a call from a Los Angeles city leader asking if I'd be willing to attend a town hall in Porter Ranch, California, to help field questions about the unfolding disaster that was the [Aliso Canyon natural gas leak](#), to provide background on environmental law for the discussion. As many of you know and may even remember, the Aliso Canyon natural gas storage facility leaked an enormous amount of gas into nearby neighborhoods for four months, unabated (and, at least initially, undetected and then unacknowledged by the storage facility's operator). The negative health effects of the massive gas leak on local communities are still being studied, including [by UCLA](#). The leak is widely regarded as among our most serious recent environmental disasters. I showed up to the town hall to find thousands of residents rightfully angry, scared, and confused about how this could have happened in one of the most highly regulated states in the country. I'll admit I was probably not very helpful, and I definitely could not provide the answers they deserved.

On Saturday, at an event at COP30 in Belém, Brazil, I heard CPUC President Alice Reynolds speculate that if California had had the tools then that it has today to detect large methane leaks, the state would have been far better able to respond

promptly to the disaster. That’s almost certainly true. The extent of Aliso Canyon’s emissions came to light almost randomly as the event unfolded, in part because of one [especially intrepid researcher](#) who happened to be nearby, equipped, and ready to fly over the site with one of the very few planes then outfitted to detect methane aerially. But all of that took time — the leak had been active for a couple of weeks before that happened.



CPUC President Alice Reynolds (center) speaks on the “Methane Reduction Roadmaps” panel at COP30 with MacKenzie Huffman of Carbon Mapper (left) and Shattyk Tastemirova of Kazakhstan.

Methane remote sensing has come a long, long way. Today, multiple satellite instruments, including one launched with California’s support, can detect methane from orbit, at scales ranging from large individual point sources to continental-scale regions. Regulators in California get daily updates on leak detections, allowing them to work quickly and directly with operators when large leaks are seen. This has resulted in real victories and greenhouse gas emission reductions, as the California

Air Resources Board described in [an analysis it just released](#). (You can read more about these satellites and how they work [here](#).) California has company. The global effort to reduce methane emissions has been a major focus of COP30 in Brazil. There's an active and ever-expanding community of advocates, NGOs, philanthropies, and governments working to drive down super pollutants like methane.

But we've only scratched the surface of how to use these new data. Policymakers, operators of emitting facilities, and communities are still exploring how to use these tools to help achieve their goals — and they could use help. It turns out that methane emissions data alone are often not enough to drive action without significant amplification and public education. UCLA is launching a project that we hope will help. The Emmett Institute's [STOP Methane Project \("Spotlight on Top Plumes"\)](#) aims to make the new data more visible, understandable, and usable in guiding and motivating efforts to cut emissions.

ANNOUNCING:

UCLA's STOP Methane Project (Spotlight on Top Plumes)

Check out our new
user-friendly ranking
of super-polluting
methane emissions
across multiple sectors.

UCLA School of Law
**Emmett Institute on Climate
Change & the Environment**

We will do this by disseminating publicly available, science-based information about the most extreme emissions sources, in a form easily understandable by operators of emitting facilities, legal and regulatory authorities, and the public, to provide accountability and to motivate and assist in identifying and acting on the highest-priority emissions to cut, with breakdowns by emissions sector and region. Because of methane's outsized role in driving global warming in the near term, every increment of methane reduction is a real opportunity, as many folks at COP30 [are emphasizing](#) (calling methane reductions the equivalent of a "climate emergency brake," given how fast acting they are). Information like this can help direct efforts where they are needed most.

To kick us off, we just released our [Spotlight on the Top 25 Plumes in '25: Oil and Gas Sector](#), a list of oil and gas sites with the largest detected hourly emissions rates worldwide in 2025 (so far). It turns out that many of the oil and gas

sites with the most extreme emission rates come from just a handful of countries — with Turkmenistan dominating the list, and Venezuela and Iran also cracking the top 5. Earlier this month, we published the [Spotlight on the Top 25 Plumes in '25: Waste Sites](#), a list of waste sites and landfills with the largest observed methane emissions rates globally for 2025. (Trivia time: Two U.S. cities have landfills on the global top 25 list. Can you guess which?)

Spotlight on the Top 25 Plumes in '25: Oil and Gas Sector

	Location	Emission rate (metric tons/hr)	Date range observed	Open the data and see on a map
1	Esenguly, Balkan, Turkmenistan	10.0	Feb 04 - Jul 22	Data link
2	Esenguly, Balkan, Turkmenistan	9.6	Feb 02 - Jul 13	Data link
3	San José de Guanipa, Anzoátegui, Venezuela	7.8	Oct 03 - Oct 10	Data link
4	Esenguly, Balkan, Turkmenistan	7.5	Feb 04 - Jul 13	Data link
5	Ramhormoz County, Khuzestan, Iran	7.1	Apr 24 - Jun 26	Data link

We compiled these Top 25 in '25 lists using public data from the nonprofit Carbon Mapper, a leading source of remote-sensed methane emissions data and analysis. (You can read more about Carbon Mapper [here](#), and find its own recently released list of top persistent methane emitters across major oil and gas countries [here](#) — which complements our Top 25 list really nicely.)

We will regularly update these lists to provide an ongoing resource for journalists, industry leaders, policymakers, and the public. As the project expands, we will also

draw on additional data sources to provide context to understand the impact and significance of specific large emitters, including on public health.

Stay tuned and subscribe to updates from the project [here](#).