Emissions return to pre-pandemic levels in nation's largest oilfield

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A study accepted this week in the journal *Atmospheric Chemistry and Physics* finds that methane emissions in the Permian Basin of Texas and New Mexico have rebounded to the same levels seen prior to last year's oil price crash and industry downturn.

The findings are based on data gathered as part of EDF's ongoing

Permian Methane Analysis Project (PermianMAP) to measure and report on emissions across the nation's largest oil and gas producing basin. Collection methods informing this study included aircraft surveys and readings from a network of remote sensors installed at towers located throughout the Permian.

Scientists found that from March to April in 2020 emissions plunged 60%, as the impacts of COVID-19 and volatile oil prices unfolded and caused a decrease in Permian drilling activity, but have now returned to pre-pandemic levels. This momentary drop in emissions partially resulted from a decline in new wells drilled and reduced flaring of associated gas, which recent research has shown significantly contributes to Permian methane emissions.

The reduction in emissions was much larger than the 10% dip in production observed during this time period. The study authors believe the reason for the disproportionate drop is that operators in the Permian have historically produced more gas than the region's facilities—including both upstream and midstream—can manage, straining the system and resulting in the highest emissions observed from any U.S. oil and gas basin. A comparatively small drop was enough to relieve that pressure, thereby reducing emissions.

"The fact that Permian methane levels have returned to pre-COVID highs as drilling levels continue to increase confirms we need more state and federal oversight of oil and gas operations to manage this emissions problem," said EDF scientist and lead author David Lyon. "Emissions from flaring and overloaded midstream sites can no longer fly under the policy radar. This science should put those problems squarely in policymakers' scopes in Texas, New Mexico and at the federal level."

Reducing oil and gas methane emissions remains the fastest, most cost-effective way to slow the rate of global warming today. In a Jan. 20

executive order, President Biden committed to reinstate and expand federal methane regulations for oil and gas facilities.

Meanwhile, regulators under Gov. Michelle Lujan Grisham in New Mexico are also in the process of advancing two sets of regulations to reduce methane waste and associated air pollution from the oil and gas industry. The state's venting and flaring rule is expected to be finalized this week, but a separate and necessary air pollution rule from the New Mexico Environment Department is still being drafted and will be critical as it addresses leaks which are 70% of the pollution problem in New Mexico.

"This methane pollution resurgence in the nation's largest oilfield spotlights the importance of robust federal protections," said EDF senior attorney Rosalie Winn. "Curbing emissions in the Permian Basin and nationwide is critical to reducing the United States' climate footprint and achieving the Biden administration's goals."

More information: David R. Lyon et al. Concurrent variation in oil and gas methane emissions and oil price during the COVID-19 pandemic, *Atmospheric Chemistry and Physics* (2020). DOI: 10.5194/acp-2020-1175

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