Reducing gas flaring throughout the United States would provide substantial economic and environmental benefits, according to a new issue brief by an expert in the Center for Energy Studies at Rice University's Baker Institute for Public Policy.

"Reducing Oilfield Methane Emissions Can Create New US Gas Export Opportunities" is authored by Gabriel Collins, the Baker Botts Fellow in Energy and Environmental Regulatory Affairs at the Baker Institute.

"Flaring and venting of gas in West Texas's Permian Basin—and certain other parts of the U.S.—have reached sufficient scale that taken in aggregate, the argument of 'burning gas to allow oil extraction' increasingly looks like 'wasting one resource to produce another,'" Collins wrote. "Regulators in Texas—the flaring capital of the U.S.—have thus far proven highly deferential to industry on the issue of flared and vented gas, even allowing producers to flare when they are connected to a functional pipeline gathering system."

The amount of gas that analysts estimate was flared in the Permian Basin during the third quarter of 2019, if multiplied by four, could yield as much as 4.8 million metric tons of exportable liquefied natural gas (LNG) on an annual basis if captured and liquefied, Collins said. That volume would exceed the nameplate capacity of a world-class LNG train such as what Cheniere Energy has built at its Sabine Pass facility, he said.

"Flaring is a lost opportunity with compounding economic and environmental costs as well," Collins wrote. "Burning gas to heat a home, power an industrial process or generate electricity all emit CO₂, but they also create value. But when gas is flared, CO₂ and other combustion products are emitted, and no value is created. If unburned gas is vented, the environmental impacts are even worse since methane creates much stronger greenhouse effects than CO₂ does. And in either case, the venting or flaring means that society lost an opportunity to supplant coal with cleaner, lower-emission natural gas."

At current flaring and venting rates, if all wasted gas in the Permian Basin was captured and liquefied, it could fill a Q-Max LNG carrier (the world's largest carrier size) every 10 days, Collins said. If that vessel went to China and discharged its cargo into a power plant, it could likely displace approximately 440,000 metric tons of coal burned to generate electricity.

Over the course of a year, nearly 18 million metric tons of coal could be displaced using the wasted gas of just one U.S. oil and gas play, Collins said. "Even if U.S. gas did not go directly to China due to barriers erected during the ongoing Sino-American trade war, its presence in the marketplace would free up LNG molecules from other exporters that could then flow to China," Collins wrote. "Data from the World Bank suggests that in 2018, petroleum operations across the entire U.S. flared an estimated 14.1 billion cubic meters of..."
gas—equivalent to 8.7 million metric tons per year of 
LNG. In energy terms, this is equivalent to more 
than one-third of the total LNG volume that U.S. 
firms actually exported that year."

"'Being green while making green' is a winning 
combination," Collins wrote. "Actions that improve 
environmental well-being are most effective and 
sustainable when they yield a bona fide economic 
benefit. This certainly would be the case with 
policies to reduce flaring and venting of natural gas 
in the US, as doing so would free up gas molecules 
for export to customers worldwide seeking cleaner, 
more secure gas supplies. Reducing flaring also 
helps reduce emissions of carbon dioxide, fine 
particulates and other potentially harmful 
substances. The U.S. has both an 
opportunity—especially in the Permian Basin—as well 
as the scale (nearly one-fourth of global natural gas 
production) to make a global difference by 
addressing local flaring and venting problems."

Collins conducts a range of globally focused 
commodity market, energy, water and 
environmental research. In addition to his research 
on shifts in China's domestic oil consumption 
structure, he focuses on oil field water issues, 
evolutions in the global gasoline market, water 
governance and groundwater valuation in Texas 
and the nexus between food, water and energy.

**More information:** Reducing Oilfield Methane 
Emissions Can Create New U.S. Gas Export 
Opportunities. [https://www.bakerinstitute.org ... 
1919-ces-methane.pdf](https://www.bakerinstitute.org ... 1919-ces-methane.pdf)

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