

Natural resources

Gas flaring lights up Texas skies amid US oil boom

As US oil output surges, companies are burning the gas they cannot squeeze onto pipelines



Since the McDonald Observatory began measurements in mid-2015, average sky brightness due to artificial light has spread from 14% to 43% in the area
© Alamy

Gregory Meyer in New York JANUARY 4, 2019

The powerful telescopes of Texas's McDonald Observatory aim at some of the darkest night skies on the planet. But a dome of light is creeping closer on the northern horizon.

The glow emanates from the booming oilfields of the Permian Basin, lit up by flares of burning natural gas. So much gas has bubbled up from the oil wells in the area that it has overwhelmed pipelines needed to take it to market. Rather than wait for new gas pipelines to arrive, bottling up lucrative oil production in the process, energy companies are incinerating the methane.

Flaring means the gas will never be used by consumers. It is also forgone revenue for energy producers and tax authorities. The pollution emitted is significant, even if carbon dioxide released in flaring traps far less heat in the atmosphere than methane gas.

But producers say it [pays more](#) to sell their oil immediately and waste the gas by burning it. Since the McDonald Observatory began measurements in mid-2015, average sky brightness due to artificial light has spread from 14 per cent to 43 per cent in the area, says Bill Wren, special assistant to the observatory superintendent.

"There's no operator that would want to flare," says Kyle McGraw, chairman of the Permian Basin Petroleum Association and an executive with Legacy Reserves, a small oil and gas company in Midland, Texas. "I would rather sell my [gas] product. It has value to me. But you wouldn't shut

your whole property in and not sell your most valuable product in order to wait for your less valuable product.”

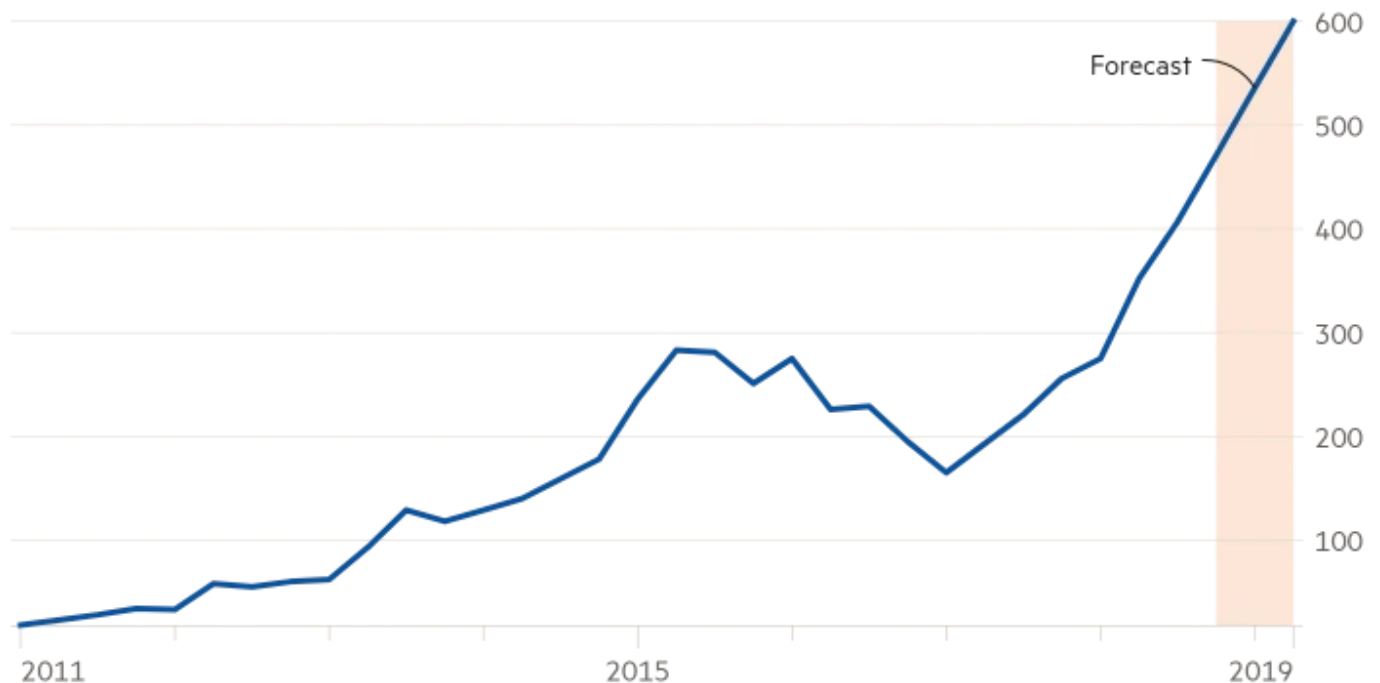
The US government estimates the basin’s oil production has risen by nearly 1m barrels per day in the past year to 3.8m b/d, as the US has [regained its position](#) as the world’s largest crude producer. The amount of gas flared in the Permian, meanwhile, averaged 209m cubic feet per day in 2017, according to data compiled by Rystad Energy, a research company. In the third quarter of 2018 it hit a record 407m cu ft/d — roughly the consumption of the state of Nebraska. By the second quarter of 2019 it will surpass 600m cu ft/d, the consultancy estimates.

Artem Abramov, Rystad’s head of shale research, says clients in Russia and the Middle East are “a little bit surprised by how large the [flaring] volumes are.”

While those places flare less than 1 per cent of their gas, in the Permian it exceeds 3.5 per cent, he says. In North Dakota’s [Bakken formation](#), the second-biggest shale oil region, flaring rates are even higher.

Natural gas flaring lights up the Permian Basin

Million cu ft/d, by quarter



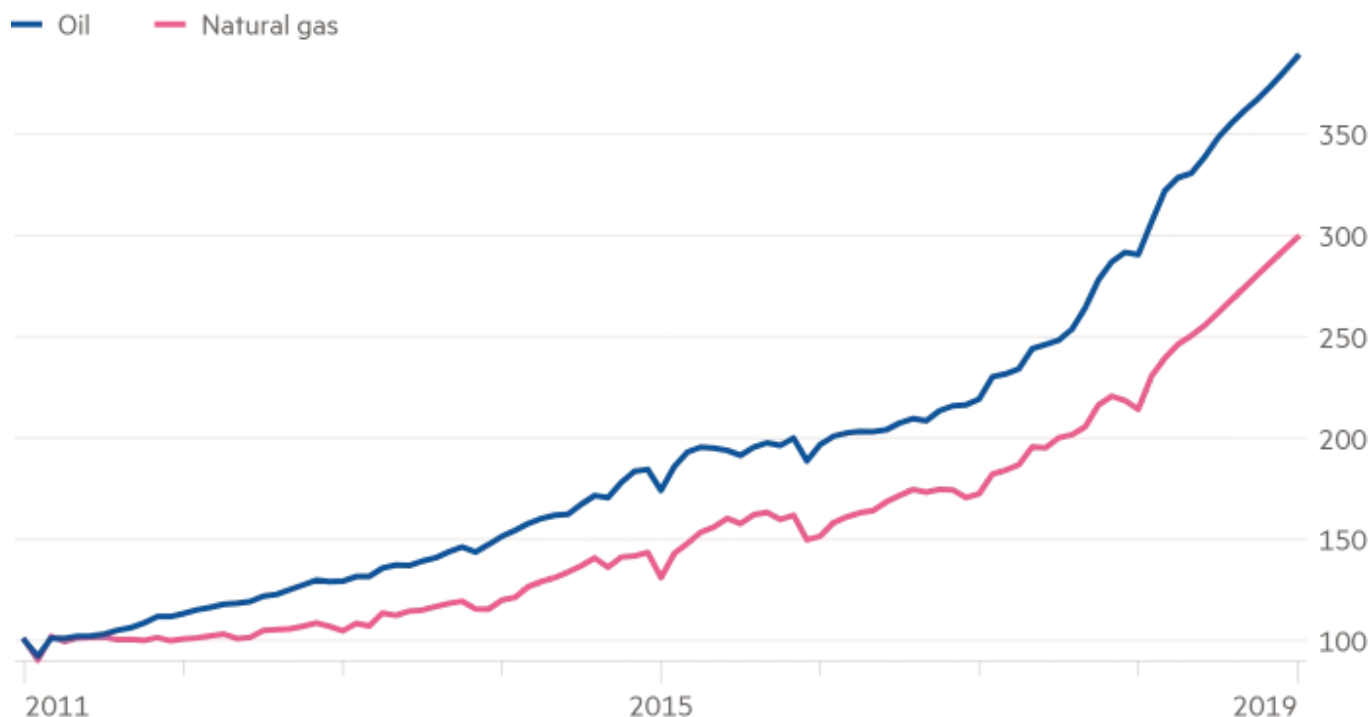
Source: Rystad Energy

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The Permian Basin consists of overlapping strata of oil-drenched rock stretching from west Texas into southeastern New Mexico.

Permian Basin gas production rises alongside oil

Rebased, 100 = January 2011



Source: EIA
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Permits to flare gas in Texas are issued by the Texas Railroad Commission, an oil and gas regulator. Oil companies are free to flare for 10 days following the opening of a new well, then may receive 45-day extensions up to a limit of 180 days, according to state rules.

Even then, companies may receive exceptions to continue past the 180-day cut-off. In 2018 none of the dozens of requests was rejected, commission records show. For example, two wells in Loving County operated by a unit of [WPX Energy](#) in December received [an exception](#) that expires in October 2020.

WPX says its waivers, sought as a precaution “in the event of temporary service interruptions” such as power outages or equipment constraints, will not be used around the clock.

“We have a revenue incentive to capture and sell all the natural gas we can,” the company says.

Widespread flaring shows that industry and regulators are struggling to curb pollution, says Colin Leyden of Environmental Defense Fund, a green group. “The industry says the Permian is a 30 to 50-year resource,” he says. “Regulators need to start treating it that way, too, and quit letting the industry waste the resource because it isn’t convenient for their quarterly production goals.”

The spread of light from gas flares, floodlit drilling rigs and commercial development in the Permian has not ruined the McDonald Observatory's views of the heavens, according to Mr Wren. "We're simply concerned about what the future may hold if that activity continues to increase," he says.

To reduce sky glow, the astronomical observatory has urged measures such as aiming lights downwards and baffling flares, ideas embraced by the Permian Basin Petroleum Association.

The incentive to flare Permian gas is reflected in a price that trades at a significant discount to [benchmark markets](#), even if national inventories sit at historic lows. In November the price at the [Permian's Waha](#) trading hub was briefly negative, suggesting producers paid to offload gas.

Some relief is expected in October, when the [Kinder Morgan](#) company's 2bn cu ft/d Gulf Coast Express pipeline is expected to flow. The \$1.75bn project will bring gas to a hub near the port city of Corpus Christi, Texas.

Kinder Morgan recently made a final investment decision to start work on another 2bn cu ft/d line running from the Permian to the Houston area, hoping to open it in 2020.

Pressure to flare could also abate due to a force the industry dislikes: lower oil prices. As the price of West Texas crude tumbled below \$50 a barrel, the number of drilling rigs active in the Permian fell by seven in December to 486, according to Baker Hughes, an oilfield services company.

Still, fewer than 400 rigs were active in the basin in late 2017. It would take four to six months for new Permian gas output to decline even with a slowdown, Mr Abramov estimates. "As long as we are above \$40 per barrel, production and flaring growth will continue," he says.

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