Country Spotlight: Gas Flaring in India

By Utkarsh Srivastava, Greer Gosnell, Morgan D. Bazilian, and Christopher Elvidge
According to the IEA, India is the fourth largest refiner of oil (behind the US, Russia, and China), and the third largest importer of crude oil and LNG (behind China and the US), though it is outranked by 24 other countries on oil production, with declining trends. China and India have been the most important drivers of crude oil demand globally since 2012. About 71% of oil production in India is attributable to the state-run Oil and Natural Gas Company (ONGC).
Given its relatively low oil production, little attention has been paid to gas flaring\(^1\) from oil production in India, which appears to follow a seasonal cycle increasing in the winter months and dipping in the summer months. The extent of flaring throughout the period covered by our data appears to have adjusted upward toward the end of 2014, then readjusted downward in early 2017 (with a large dip in July 2018, when Indian oil production dropped 5%).

\(^1\) Natural gas flaring, the controlled burning of natural gas at oil and gas extraction sites, occurs when it is uneconomical for production companies to bring the gas from well to market for processing and sale. The burning of the gas—as opposed to releasing it directly into the atmosphere, or “venting”—is meant to reduce potential safety hazards and prevent methane, a more potent greenhouse gas that contributes to ground-level ozone, from entering the atmosphere. Both are distinct from “leakage”, which is unintentional and can go undetected.
Our advanced satellite data suggests that the majority of gas flaring in India is concentrated in 3 regions: oil drilling off the coast of Mumbai (primarily the aging Mumbai High oil field operated by ONGC), drilling and refining activity in northeastern Assam (home to India’s first oil well and oldest refinery at Digboi) and Nagaland, and exploration and refining in Gujarat. We see pockets of flaring to a lesser extent along the coast in Tamil Nadu and Andhra Pradesh.

India’s upstream regulator—the Directorate General of Hydrocarbons—issued a directive in January 2019 to oil producers to halve flaring over the following year. Despite the directive, the volume of gas flared appears to be as high or higher in 2019 as it was in 2018. With COVID-19, it will be difficult to attribute any decline in flaring in the near term to this directive given immense fluctuations in global oil prices. Expansion of pipeline production and gas price reform in India may decrease the cost of access to pipelines while making natural gas more competitive, bringing promise that flaring will become less attractive from an economic perspective.
ABOUT THE AUTHORS

Utkarsh Srivastava
Payne Institute Scholar

Utkarsh graduated from Colorado School of Mines with a masters in Petroleum Engineering and a minor in Mineral and Energy Economics. He has been involved with Dr. Bazilian and the Payne Institute since the summer of 2018. He has a chemical engineering background, as well as an interest in oil and natural gas markets and the impact of policies on those markets.

Greer Gosnell
Senior Research Associate, Payne Institute for Public Policy
Colorado School of Mines

Greer is a Senior Researcher at the Payne Institute for Public Policy at the Colorado School of Mines. Her research combines experimental and behavioral economics to reveal cost-effective climate change mitigation strategies at the microeconomic level. Her current research focuses on commercial fuel efficiency, residential energy and resource use, virtual grid capacity, and energy and development. She is also a BITSS Catalyst promoting transparency and reproducibility in social science research.

Morgan D. Bazilian
Director, Payne Institute and Professor of Public Policy

Morgan Bazilian is the Director of the Payne Institute and a Professor of public policy at the Colorado School of Mines. Previously, he was lead energy specialist at the World Bank. He has over two decades of experience in the energy sector and is regarded as a leading expert in international affairs, policy and investment. He is a Member of the Council on Foreign Relations.

Christopher Elvidge
Senior Research Associate, Director of Earth Observation Group

Christopher D. Elvidge has decades of experience with satellite low light imaging data, starting in 1994. He pioneered nighttime satellite observation on visible lights, heat sources including gas flares and wildfires, as well as bright lit fishing vessels. He led the development of these nighttime remote sensed products with images from DMSP, JPSS, and Landsat satellites. These data are very popular and used globally in both public and private sectors. As of February 2018, he has more than 11,000 scholarly publication citations.
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