

The Oil and Gas Sector Needs to Tackle Its Methane Problem. Here's How to Track It.

The Oil Climate Index plus Gas (OCI+), an open-source interactive tool, offers powerful insights on the methane intensity of the world's oil and gas resources

Released March 2023 (Updated September 2024)

Methane is a powerful climate pollutant that heats our planet over 80 times more than carbon dioxide. The oil and gas sector is responsible for an estimated one-third of global methane emissions, therefore represent our most significant near-term opportunity to reduce emissions and slow global temperature rise.

RMI's cutting-edge and publicly-available interactive tool — the OCI+ — reveals the size, scope, and nature of the methane problem. As shown below, the methane emitted by the oil and gas sector is responsible for over one-half of all industry emissions—rivaling CO₂. Depending on how oil and gas are extracted, processed, and transported, methane emissions can vary by a factor of ten.

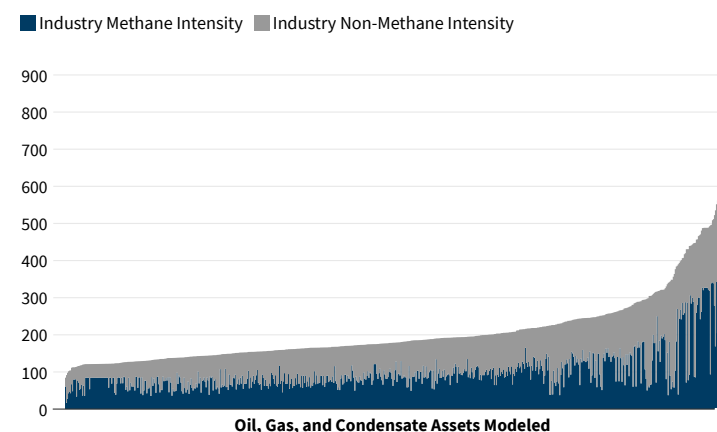
Cutting methane leakage can shrink oil and gas industry emissions

RMI is now modeling all global O&G assets, offering the climate intelligence needed to identify new opportunities to manage methane.

The OCI+ model can be used by policymakers, corporations, financial actors, academics, and civil society to identify drivers of emissions in the oil and gas supply chain and prioritize actions that can yield the greatest climate benefits.

Methane Plays a Large Role in Driving Industry Emissions

Emissions Intensity (kgCO₂e/boe)



Source: <https://ociplus.rmi.org/>

Key insights on methane from the OCI+ are as follows:

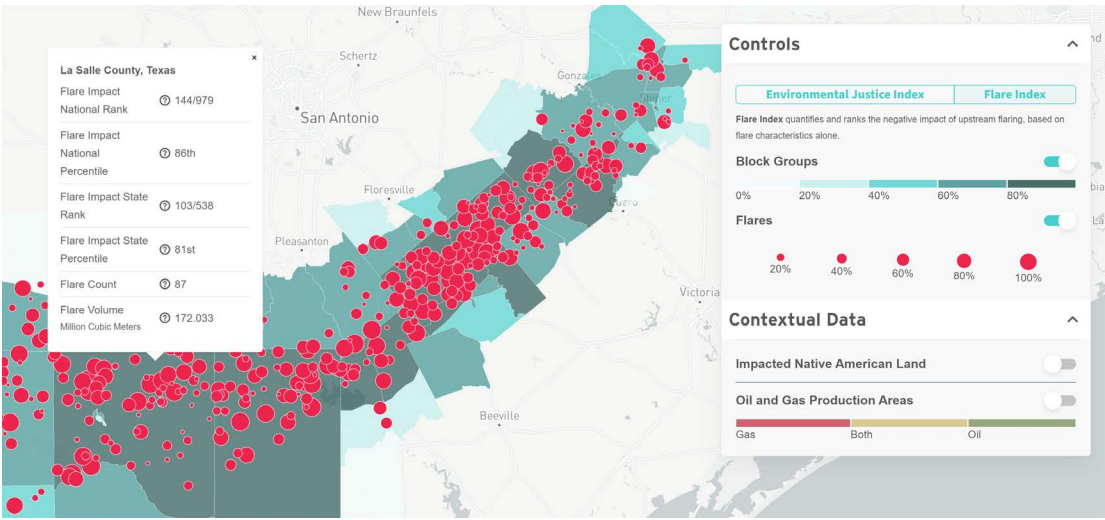
- **The oil and gas sector offers the No. 1 opportunity to slash methane.** The International Energy Agency reports that well over [one-half of oil and gas industry methane emissions](#) can be profitably cut. The less methane leaked, the fewer wells that need to be drilled to meet global energy demand. Thus, cutting methane can also help bolster national energy security. Openly certifying natural gas supplies by their methane leakage rates using protocols like [MiQ](#) can create new markets for less climate intensive oil and gas with leakage rates [below 0.2 percent](#).
- **Satellites and remote measurements are making methane visible.** This year, atmospheric [methane concentrations](#) reached their highest levels since measurements have been taken. Understanding where these emissions are coming from is a critical step to mitigating them. The good news is satellites, like those under development by the [Carbon Mapper](#) program and [EDF's MethaneSAT](#), will be routinely and openly reporting methane super-emitters following their successive instrument launches in 2024.

- **Leaky oil and gas systems warm the planet even more than coal.** Studies using one million measurements find US oil and gas methane leakage rates range from less than [1 percent to over 9 percent](#). Other studies cite [25 percent](#) methane leakage and more. When oil and gas systems leak as little as [0.2% of their gas](#), they can emit as many net GHGs as coal. The Intergovernmental Panel on Climate Change (IPCC) finds that climatic warming from [methane rivals carbon dioxide](#). Cutting methane now can help prevent each additional degree rise in the Earth’s temperature and forestall progressively worse climate disasters.
- **Strategically managing highly emitting oil and gas resources requires targeted action.** Given wide-ranging climate intensities of otherwise equivalent barrels of oil and gas, solutions rest on targeting the highest-emitting assets. Analyzing heterogeneous oil and gas impacts offers companies, investors, policymakers, and civil society actors greater climate intelligence to safeguard our planet now as we reduce global dependence on fossil fuels.

Addressing methane meets multiple goals

Methane is co-emitted with numerous air toxins. In addition to preserving natural resources and mitigating climate change, cutting methane emissions is a critical environmental justice opportunity and can save hundreds of thousands of lives, according to the [U.S. State Department](#). An environmental justice (EJ) risk feature has been added to the OCI+ that considers underlying demographics in the vicinity of flares that burn off gas from oil and gas system. The Flaring EJ Risk Map highlights environmental justice risks to residents in nearby communities from gas flared in upstream oil production activities and visualizes flares that pose the worst environmental justice risks relative to others.

Flare Points Layer with Tool Tip, highlighting populations impacted by flares in Eagle Ford Shale, Texas



Source: <https://rmi.org/where-gas-flaring-is-endangering-communities>

Note: Flared gas locations and volumes are obtained from NOAA VIIRS satellite data that is analyzed by the [Earth Observation Group](#) at the Colorado School of Mines’ Payne Institute. The figures above use this [2022 US flaring data](#) filtered for upstream oil and gas production activities.

Communities can call for policies that pave the way to a healthier, safer, and climate-resilient future. Investors can use this and other OCI+ data to direct environmental, sustainable, governance funds away from operations with the greatest EJ impacts. And the climate intelligence provided by the OCI+ can help align the oil and gas sector with global methane targets as the clean energy transition accelerates in this decisive decade.

ADDITIONAL RESOURCES

OCIplus.RMI.org
RMI.org/insight/kyog

NoStandardOil.com
We Need to Talk About Methane

Contact
Linda Jirouskova
ljirouskova@rmi.org