Kayrros sees decreased emissions from methane hotspots in Kuwait, Iraq, Turkmenistan and U.S. in 2020, offset by increases in Kazakhstan, Russia and Algeria

- ***Kayrros's AI-based technology leveraging European satellite data identifies methane emissions from oil and gas operations at the asset level.***
- ***Significant variance recorded across regions in 2020 compared to 2019, with falling emissions from methane hotspots in Kuwait, Iraq, Turkmenistan and the U.S. and increases in Kazakhstan, Russia and Algeria.***
- ***Kayrros data used by the International Energy Agency in its annual Methane Tracker released on 18 January 2021.***
- ***Responsible producers in a position to demonstrate quality of operations and receive a premium on their fuel.***

Paris, 18 January 2021 – Kayrros, the leading advanced data analytics company focused on satellite imagery and alternative data for enhanced decision-making, today releases its data showing the year-on-year shifts in emissions from large methane hotspots recorded across 12 oil and gas-producing regions in 2020 compared to the prior year. Kayrros's data was cited by the International Energy Agency (IEA) in its annual Methane Tracker, published today.

Kayrros has estimated the emissions from methane hotspots[1] in Algeria, Iraq, Kazakhstan, Kuwait, Russia, Turkmenistan and the U.S., exposing significantly different trends in each region. Decreases were recorded in Kuwait, Iraq, Turkmenistan and the U.S., while increases were identified in Kazakhstan, Russia and Algeria.

While the COVID-19 pandemic was partially responsible for the decrease, notably in the U.S., it was not the only factor. Nor was the move in emissions just one-way.

- In the U.S., Kayrros estimates that the decrease in emissions is due to the decline in completion activity due to plunging oil prices in the wake of the outbreak of COVID-19 and the increase in take-away capacity such as the Gulf Coast Express Pipeline (GCX).

- In Russia, methane emissions actually increased by 32 percent, despite lower energy consumption. This disparity, which covers emissions across the Caspian, East Siberia, Urals, West Siberia and Yamal regions, suggests that operators in these regions can potentially take action to reduce avoidable large-scale methane leaks.

- In Iraq, Kayrros sees a significant drop in methane emissions from large sources in oil and gas-producing regions. The sharp reduction in the country's methane footprint may be at least partly credited to a move toward more use of gas in the country's electricity generation network. This switch may have resulted in a practice of capturing the associated gas from oilfields for use in power plants, rather than flaring or venting. If so, it shows how large leaks can easily be eliminated.

Reflecting on the findings, Kayrros President and Founder Antoine Rostand notes: *"Breakthrough technology is here to track large methane emissions and make sure the right operating practices are in place."* Rostand continues: "*Thanks to Kayrros and the Copernicus Sentinel satellites, the world can now see methane emissions globally and track them in real time. This new visibility has highlighted that large methane hotspots are avoidable and will be key to reducing unacceptable methane leaks and advancing climate protection targets. Simply put: the data will allow responsible operators around the world to demonstrate they are operating cleanly and to monetize their low-carbon production.*"

The data, which uses input from the European Space Agency's Sentinel-5P satellite and other satellites, supports the view that emissions are not necessarily proportional to supply. The findings demonstrate that large methane emissions cannot simply be considered as an unavoidable side effect of production but rather the avoidable consequence of a variety of factors, including insufficient or poorly maintained infrastructure for natural gas gathering, processing, and transportation, and inadequate regulation, or lax enforcement of regulation, of methane gas emissions.

Kayrros's tracking and attribution technology not only offers the opportunity to compare retrospectively different timeframes and ascertain comparative trends but also has the capacity to detect emissions in near real-time. Efficient and accurate leak detection is the first step to eradication, and therefore has substantive positive implications for operational standards and policymaking. The scope to immediately identify large emissions assists policymakers, investors and consumers in distinguishing between responsible energy producers and those with a larger methane footprint.

Background on methane emissions

According to the IEA "the concentration of methane in the atmosphere is currently around two-and-half times greater than pre-industrial levels and is increasing steadily. This rise has important implications for climate change, particularly in the near term. Methane has a much shorter atmospheric lifetime than CO_2 (around 12 years compared with centuries for CO_2) but it is a much more potent greenhouse gas, absorbing much more energy while it exists in the atmosphere."

In 2012, atmospheric scientist Drew Shindell of Duke University showed that there was no likely path to the Paris goal without rapidly reducing methane emissions and he has subsequently shown that eliminating roughly 45 percent of man-made methane emissions by 2030 could have a 0.3°C impact by the 2040s, making it the fastest and most effective way to rapidly reduce global warming.

Thanks to new satellites and more sophisticated sensors in the European Space Agency's (ESA) Sentinel constellation and EU-funded advances in artificial intelligence, Kayrros has developed a technology that accurately detects large methane emissions, measures them and attributes them back to their sources. Kayrros detections, based on multiple satellites, provide unique frequency and swath. Kayrros technology is the only detection tool that can provide nearly continuous monitoring of most of the world's onshore oil and gas fields, with daily revisits. Accuracy is up to 20 meters, and the detection threshold is currently at 5 tons per hour and quickly becoming lower as new algorithms and sensors are becoming available. A methane leak of 5 tons per hour is equivalent to approximately 3.7 million tons of CO_2-equivalent per year of continuous emission.

About Kayrros

Kayrros is the leading global asset observation platform built on fundamental science, strong R&D, and leading technology. Harnessing satellite imagery and multiple sources of unconventional data with machine learning, natural language processing, and advanced mathematics, Kayrros monitors and measures energy and natural resource activity worldwide. With access to data on more than 200,000 industry assets, Kayrros customers track individual or multiple assets in configurable proprietary or collaborative workflows to analyze industrial and environmental performance for maximum insight and optimal operational and financial decisions. For more information, visit www.kayrros.com.

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Footnotes

1 A "methane hotspot" is a leak detection with flow rate larger than 5T/hour. This estimate is adjusted for coverage (missing observations due to weather, etc.). All data cited in this release relates to emissions from "methane hotspots" and clusters of smaller leaks, as defined here.