

Kayrros: New data show cutting methane emissions from Australia's coal mines by half would be a big climate win

Kayrros measurements of methane emissions from the Bowen Basin point to a low-hanging fruit for GHG abatement

Paris and London, 5 July 2021 — Today, Kayrros released proprietary analysis showing that the coal mining sector in Australia's Bowen Basin, the country's main production center, emitted an average of 1.6 million tons per year (t/y) of methane in 2019 and 2020—equivalent to the carbon footprint of a mid-sized European country or to the CO₂ emissions of ~30 million passenger vehicles over the same timeframe.

Kayrros scientists use public satellite data from Sentinel-5P—part of the Copernicus network operated by the European Space Agency (ESA)—to detect, measure and trace methane emissions back to their sources. Kayrros implemented a full inversion model to quantify methane emissions aggregated across the Bowen Basin, a technique that reconstructs observed methane concentrations through technical simulations.

Measurements show the observed methane intensity varies significantly across the basin, which spreads over hundreds of kilometers in Queensland, New South Wales. Kayrros data show the average intensity of the top quartile of mines is five times higher than for the bottom quartile.

Reducing methane emissions from coal is even more straightforward than from oil and gas. Draining methane from coal seams before the coal is exposed, or capturing methane from the mine ventilation systems, are well-established techniques. If these techniques were deployed across the entire Bowen Basin, methane emissions would decline by 650,000 t/y.

“Ascertaining the full extent of the methane emissions from Australia's coal mines for the first time is a critical milestone in the race to reduce our climate footprint,” said Kayrros President Antoine Rostand. “Coal gets lost in the discussion of our methane footprint, partly due to the wish to move away from it altogether, partly due to a lack of data. But coal is still a big part of the fuel mix and our measurements show reducing methane emissions from coal is a proverbial low-hanging fruit for the climate.”

Note to Editors:

The presence of oceans, lakes, clouds and other local factors can result in missing information in some pixels, and the number of measurements (defined as the satellite “coverage”) varies accordingly by regions and through seasons. Therefore, this technology ensures methane emissions monitoring only for onshore regions, and offshore emissions are not taken into account. This particular study focuses exclusively on methane and does not include other air pollutants or greenhouse gases, and models don't include other emissions sources such as cattle farming or abandoned mines.

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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