

Methodology

The climate blind spot: a case for taking a closer look at methane

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This methodology explains the analysis behind our story: ‘The climate blind spot: a case for taking a closer look at methane’.

UK methane emissions are higher than stated

The greenhouse gas emissions associated with producing natural gas in the UK and from imported sources were taken from the North Sea Transition Authority’s 2024 [‘Emissions intensity of producing natural gas’](#) factsheet. According to this dataset, the average UK upstream emissions intensity is 24kgCO₂e per barrel of oil equivalent (boe). For Norway, the emissions intensity of pipeline gas is 8kgCO₂e per boe and of liquid natural gas (LNG) is 35kgCO₂e per boe.

Research from [Riddick and Mauzerall \(2022\)](#) has found that methane emissions from UK oil and gas operations in the North Sea may be around five times higher than those reported in the UK’s National Atmospheric Emissions Inventory (NAEI). To reflect this, we applied this correction only to the methane component of the UK intensity figures. In the NSTA dataset, methane accounts for around 4kgCO₂e per boe. If this methane figure is increased five-fold, it adds an additional 16kgCO₂e per boe to the UK total.

When combined with the original emission intensity, this gives an adjusted UK emissions intensity of around 44kgCO₂e per boe. This higher estimate places the UK much closer to the emissions intensity of imported LNG from major suppliers such as Norway, rather than the substantially lower figure derived from official reporting alone.

How do oil and gas operators release methane?

We used the UK National Atmospheric Emissions Inventory (NAEI) 2023 [dataset](#) to identify methane emissions from the oil and gas sector. After filtering the data to include only upstream emissions (those released during extraction and initial processing), we estimated that total upstream methane emissions were 24.8 kilotonnes (kt).

We then broke this total down into the three main sources reported in the dataset: venting, flaring, and fugitive emissions. Using the NAEI figures, we calculated the share of each source as a proportion of total upstream methane emissions:

- Venting: 45% (11.08 kt)
- Flaring: 29% (7.15 kt)
- Fugitive emissions: 9% (2.35 kt)

Solving the UK's methane problem

Oil and gas platforms map

The map of onshore and offshore oil and gas sites was derived from the dataset from the [NSTA interactive maps platform](#), including: 'offshore activity' and 'onshore oil and gas activity'.

Offshore activities were filtered by type of infrastructure, covering platforms, and floating production, storage and offloading vessels (FPSOs and FSOs). Onshore activity was filtered to only operating wells with the status 'present' (ie still an active site), and those which are 'completed' rather than plugged or abandoned. In total, 282 offshore platforms and 300 onshore sites were detected.

Number of leak detection and repair jobs

To estimate the number of jobs created, we made a simple calculation based on how often leak detection and repair (LDAR) inspections would take place and how long each inspection would take. We recommend that LDAR surveys are carried out four times a year (quarterly).

[Best-practice guidance](#) (according to the US Environmental Protection Agency) for LDAR on oil and gas sites indicates that a full inspection and repair cycle can take around five days (Pg 13). Using a standard working day, we assume this is equivalent to 40 hours of work per inspection. A study from [Ravikumar et al \(2020\)](#) on the effectiveness of LDAR using infrared cameras notes that surveys are typically carried out by two trained technicians.

We then combined this with data on the number of offshore and onshore oil and gas platforms in the UK, extracted from the maps described above. Multiplying the number of platforms by the time required per inspection and by the number of inspections per year gives a total of 186,240 working hours annually.

To convert this into full time equivalent (FTE) jobs, we used a [standard annual working time](#) of 1,740 hours per FTE, which accounts for leave and public holidays. Dividing total LDAR hours by this figure results in an estimated 107 FTE jobs.

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