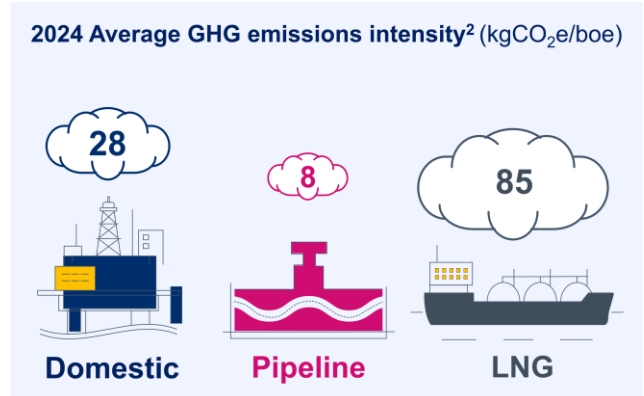


This factsheet summarises a comparison between estimates of the greenhouse gas (GHG) emissions intensity of producing UK gas, and the emissions intensity of importing liquefied natural gas (LNG) or gas via pipeline in 2024. The emissions intensity value shown is the estimate of GHG emissions of carbon dioxide (CO₂) and methane (CH₄) per barrel of oil equivalent (boe) of natural gas. To note, these values do not include oil production, and the emissions do not include downstream combustion emissions. The previous comparison published by the North Sea Transition Authority in 2023, related only to carbon dioxide emissions intensities.

Summary

In 2024, the average emissions intensity of UK domestic gas production was 28 kgCO₂e/boe¹. These are the average emissions generated by the production, processing and transport of one barrel of oil equivalent of UK domestic gas. The average emissions intensity is a combination of a CO₂ intensity of 24 kgCO₂/boe and a methane intensity of 4 kgCO₂e/boe.

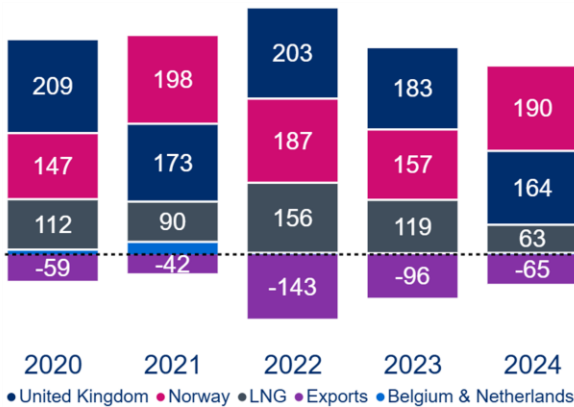
The emissions intensity of producing and processing pipeline gas imports, of which over 99% were from Norway, was 8 kgCO₂e/boe. LNG had a significantly higher average emissions footprint of 85 kgCO₂e/boe, including production, processing, liquefaction, shipping and regasification.



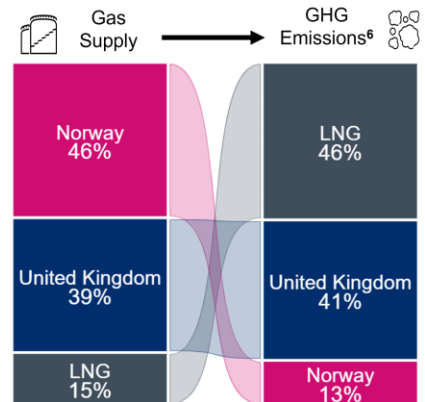
UK gas supply mix and GHG emissions

Gas imports accounted for 61% of the UK's total gas supply of 417 mboe in 2024 (up 1% on 2023). LNG imports made up only 15% of total UK gas supply but contributed the largest share of associated GHG emissions at 46%.

2020 – 2024 UK gas supply (mboe)^{3,4}



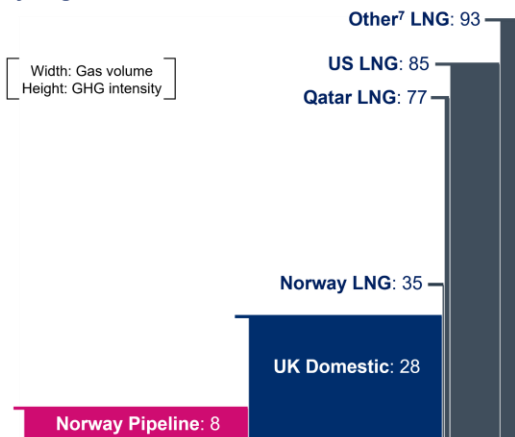
2024 UK gas supply and emissions



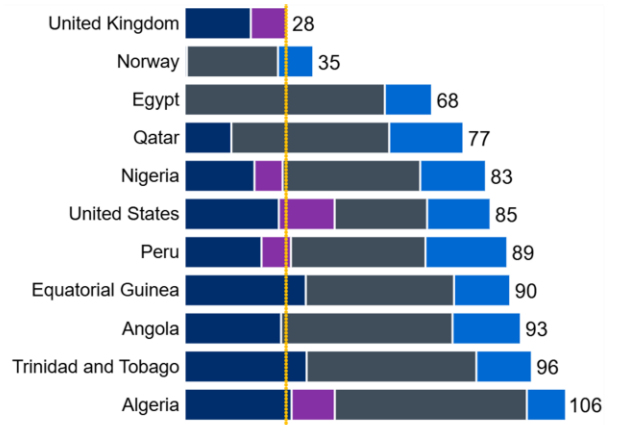
UK gas supply GHG intensities and LNG value chain

In 2024, the average emissions intensity of producing and processing UK domestic gas was 28 kgCO₂e/boe, comprised of an emissions intensity of 18 kgCO₂e/boe for upstream operations and 10 kgCO₂e/boe for transport and processing. All countries bar Norway exporting LNG to the UK had more than double the UK average emissions intensity. Liquefaction contributed the greatest proportion of emissions to the LNG gas value chain for all UK LNG import countries apart from the USA.

2024 GHG intensity (kgCO₂e/boe) and gas volume by origin



UK LNG import GHG intensity⁸ (kgCO₂e/boe) 2024 by country



Other LNG: Algeria, Angola, Egypt, Equatorial Guinea, Nigeria, Peru, Trinidad and Tobago

Notes

- *1 All estimates of emissions and intensities are sourced from Rystad Energy’s Gas and LNG trade emission analysis dashboard (August 2025). Rystad Energy’s EmissionsCube is a proprietary, field-by-field emissions inventory database combining asset-level reported data, quality aggregated reported data, methane satellite data, and flaring satellite data (VIIRS Nightfire, Colorado School of Mines).
- *2 Emissions intensity = Carbon dioxide (CO₂) and Methane (CH₄) emissions as CO₂ equivalent using GWP100 (Factor 28, 100-year perspective), created per barrel of produced oil equivalent (boe), assuming 5800 barrels of oil equivalent per million standard cubic feet of natural gas.
- *3 Gross supply. The UK is a net gas importer but seasonally exports significant gas volumes to Republic of Ireland and Belgium. UK domestic production volumes exclude direct exports to Netherlands and Norway.
- *4 Source: Department for Energy Security and Net Zero (DESNZ) Energy Trends: UK Gas <https://www.gov.uk/government/statistics/gas-section-4-energy-trends>
- *5 LNG supply in 2020—2024 consists of imports from Algeria, Angola, Belgium, Chile, Egypt, France, Nigeria, Norway, Oman, Peru, Qatar, Spain, Trinidad and Tobago, and the United States.
- *6 Excludes emissions for 0.5 MMboe of the UK’s 2024 natural gas supply (0.5% of gross supply) from Belgium and the Netherlands, which do not have associated value chain intensity values.
- *7 Other LNG includes the average intensity of the group of countries with less than 5 mmboe of imports in 2024: Algeria, Angola, Egypt, Equatorial Guinea, Nigeria, Peru, Trinidad and Tobago.
- *8 The LNG value chain stages include: Upstream, Transport and processing, Liquefaction, LNG shipping and Regasification.

Data

UK 2020—2024 gas supply (mmboe)

Supply	Type	2020	2021	2022	2023	2024
United Kingdom	Domestic	209	173	203	183	164
Norway	Pipeline	147	198	187	157	190
Belgium & Netherlands	Pipeline	8	25	1	0	1
LNG	LNG	112	90	156	119	63
Exports	Exports	-59	-42	-143	-96	-65

2024 UK gas supply, emissions and intensities

Supply type	Supply country	Gas volumes (mmboe)	GHG Emissions (ktCO ₂ e)	GHG Emissions intensity (kgCO ₂ e/boe)	Supply country grouped	Gas volumes (mmboe)	GHG Emissions (ktCO ₂ e)	GHG Emissions intensity (kgCO ₂ e/boe)
UK Domestic	United Kingdom	164	4631	28	United Kingdom	164	4631	28
Pipeline	Norway	190	1445	8	Norway	190	1445	8
LNG	Norway	2	55	35	Norway	2	55	35
LNG	Qatar	5	373	77	Qatar	5	373	77
LNG	United States	43	3611	85	United States	43	3611	85
LNG	Algeria	3	313	106	Other			
LNG	Angola	2	202	93	Other			
LNG	Egypt	1	38	68	Other			
LNG	Equatorial Guinea	1	52	90	Other	14	1279	93
LNG	Nigeria	1	83	83	Other			
LNG	Peru	2	190	89	Other			
LNG	Trinidad and Tobago	4	401	96	Other			