

Hydrogen production and demand in the UK, 2022 to 2025

Official Statistics in Development

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The Department for Energy Security and Net Zero has collected, quality assured and analysed new hydrogen data for 2025. This data has been used to publish this article as Official Statistics in Development to involve users and stakeholders at an early stage in assessing their suitability and quality (for more information see [Appendix 1: supporting information](#)). As these statistics are in development, they carry a higher degree of uncertainty than Official Statistics. The Department will continue to evaluate their quality to ensure the data and statistical methods are robust.

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Key headlines

- Hydrogen production and demand is small relative to other fuels. Between 2022 and 2025, the UK produced around 13 TWh of hydrogen annually (equivalent to 4 per cent of natural gas production), with production falling 9 per cent in 2025 compared with 2024.
- Hydrogen demand was also around 13 TWh, equivalent to 2 per cent of natural gas demand, decreasing by 8 per cent in 2025 compared with 2024.
- Hydrogen production is concentrated in the refining and chemical sectors, with most of the UK's production occurring as a by-product of other processes. In 2025, more than 80 per cent of hydrogen production was by-product hydrogen, with more than 70 per cent of total production being produced by catalytic reformers. Comparatively, steam methane reforming accounted for 13 per cent over the same period.
- Whilst refinery processes produce hydrogen as a by-product, refineries are also major hydrogen consumers, accounting for 75 per cent of total demand in 2025. The chemicals industry and non-energy use accounted for 23 per cent of hydrogen demand in 2025.

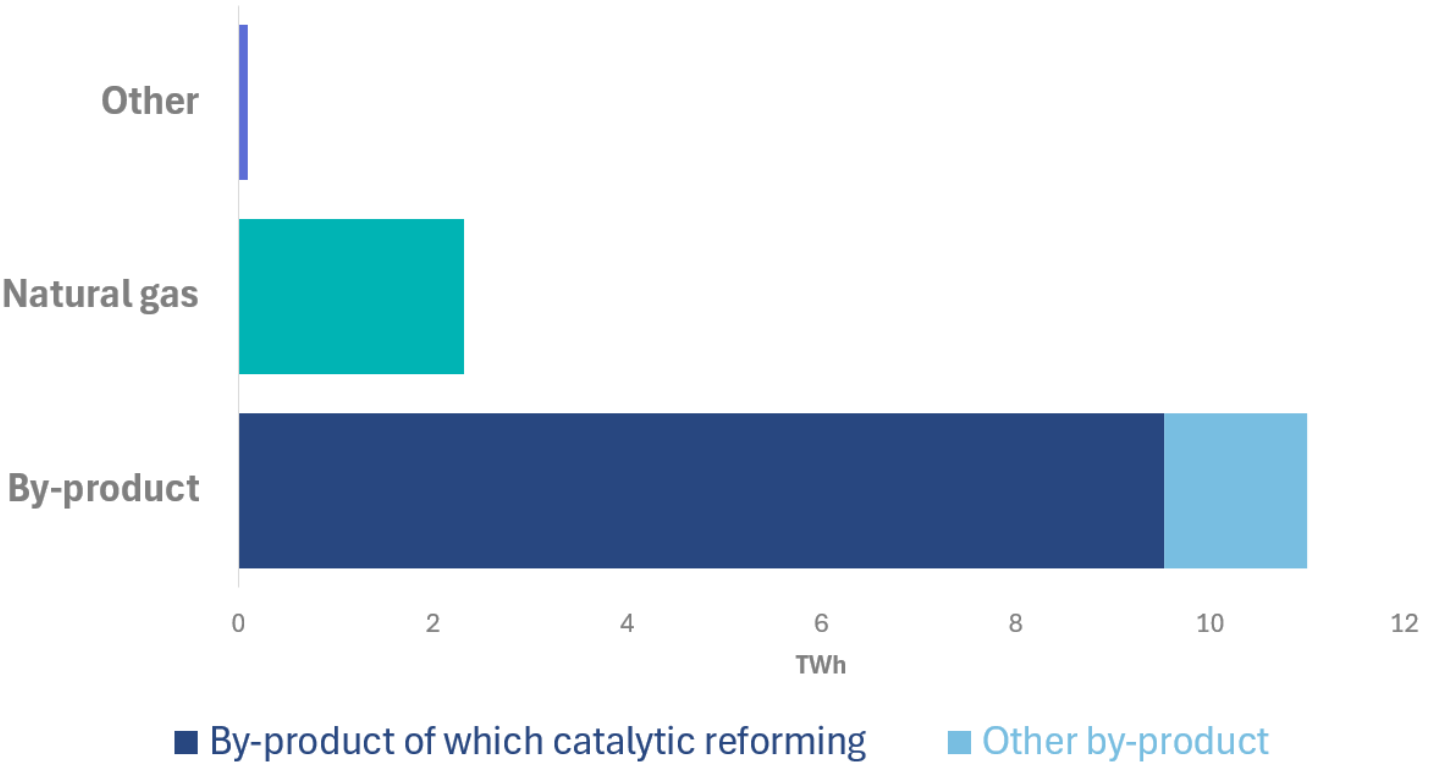
Hydrogen Production

Hydrogen is not a primary energy product; it must be produced from other fuels. Currently, global hydrogen production and demand, including in the UK, is concentrated in the refining and chemicals sectors.

Annual hydrogen production was 13 TWh in the UK on average between 2022 and 2025. This is equivalent to 4 per cent of UK natural gas production in the same period. In 2025, hydrogen production fell by 9 per cent compared with 2024, due to refinery closures.

Hydrogen is commonly produced as a by-product of other activities, where chemical reactions used to produce other products also produce hydrogen. More than 80 per cent of production was as a by-product in 2025, the remainder was produced using natural gas, continuing a similar pattern observed in 2024. Hydrogen production from other fuels fell to zero in 2024 and remained at that level in 2025, having previously accounted for 1-2 per cent of production in 2022 and 2023.

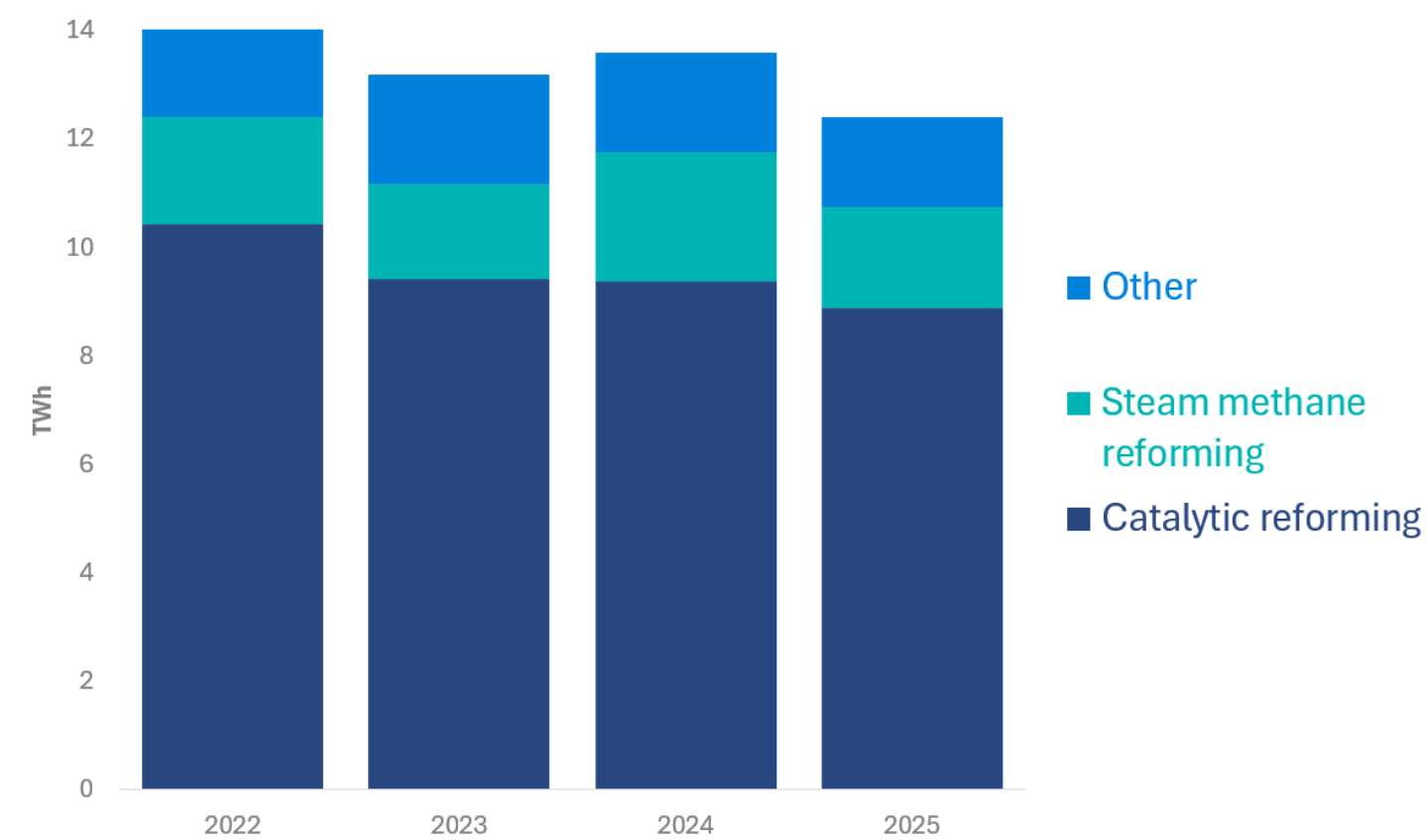
Chart 1: Hydrogen production by type in the UK, annual average 2022-2025



The most substantial type of by-product production is through catalytic reforming. Catalytic reformers are used by refineries to produce the components of petroleum products from derivatives of crude oil, producing hydrogen as a by-product. More than 70 per cent of hydrogen was produced using catalytic reformers in 2025.

A further 13 per cent of hydrogen was produced using steam methane reformers. Steam methane reformers use natural gas to produce hydrogen. Unlike catalytic reformers, the primary purpose of steam methane reformers is hydrogen production. The remaining production technologies have been aggregated to protect identifiable information (see [Disclosure Control](#) for more information).

Chart 2: Hydrogen production by technology in the UK, 2022-2025



Hydrogen Demand

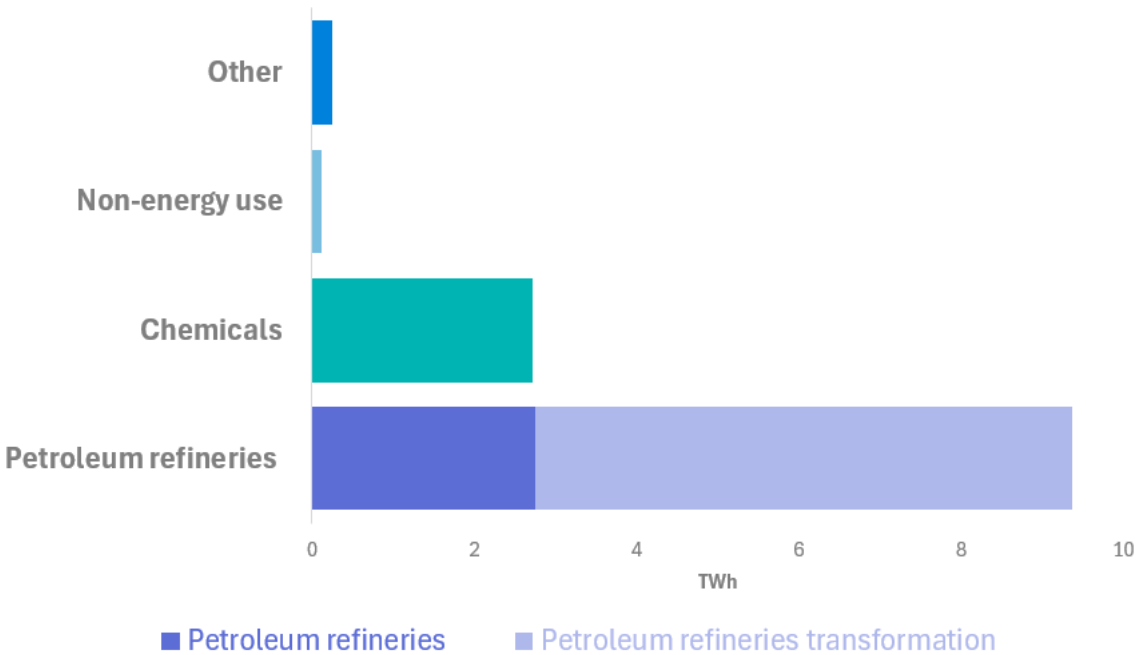
Like production, hydrogen demand in the UK is small relative to other fuels. Hydrogen demand was approximately 14 TWh on average between 2022 and 2025, equivalent to around 2 per cent of natural gas demand in the same period. In 2025, hydrogen demand was 12 TWh, down 8 per cent compared with 2024. It is common for hydrogen production to take place within the facility where it is consumed.

Whilst refineries produce hydrogen as a by-product of catalytic reforming, they are also major consumers of hydrogen. In 2025, refineries accounted for 75 per cent of total hydrogen demand. During refinery processes, hydrogen is often incorporated into other fuels rather than being burnt as a fuel directly. In Energy Statistics this is known as transformation, where one type of energy is ‘transformed’ into another. The majority (more than 70 per cent) of refinery hydrogen demand in 2025 was for transformation, with the remainder used to support other refinery processes.

Hydrogen is also used in the chemicals industry as both a fuel for high temperature processes and a feedstock for chemical production. Where hydrogen is incorporated into chemicals, this is considered non-energy use. Together, the chemicals sector and non-energy use accounted for 23 per cent of total hydrogen demand in 2025.

Hydrogen is used in other sectors including other industries, transport and by other final users. In these sectors, hydrogen is likely used in fuel cells to power buildings or vehicles. Based on the data collected, each of these sectors accounted for less than 1 per cent of total hydrogen demand in 2025.

Chart 3: Hydrogen demand in the UK, 2025



Appendix 1: supporting information

1. Official Statistics in Development

These statistics were produced using a new data collection of existing hydrogen producers. They are in development, therefore carry a higher degree of uncertainty than Official Statistics. It is not currently possible to quantify this uncertainty precisely; however, information has been included to allow users to assess quality and judge whether fit for their intended use.

The data collection aimed for 100 per cent coverage of existing hydrogen producers. However, unlike other fuels, there is no centralised register of hydrogen suppliers in the UK. The department utilised relationships with industry, including trade associations, to gather information. Whilst we anticipate all substantial hydrogen producers have been included; it is possible that some are missing.

The timeline for incorporating these statistics into our regular publications, including the [Digest of UK Energy Statistics \(DUKES\)](#) and [Energy Trends](#), will depend on the development of international methodologies and ongoing collaboration on their implementation.

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2. Disclosure Control

In line with [guidance](#) data may have been aggregated or omitted to ensure identifiable information has not been published.

3. Units and Conversions

Data were collected in mass units (kg) of pure hydrogen; this was converted to energy units using a gross calorific value of 141.8 megajoules per kilogram (MJ/kg).

4. Revisions

Minor revisions to data for 2022 to 2024 have been included following revised data from suppliers.



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