bp Energy Outlook 2025

UK insights

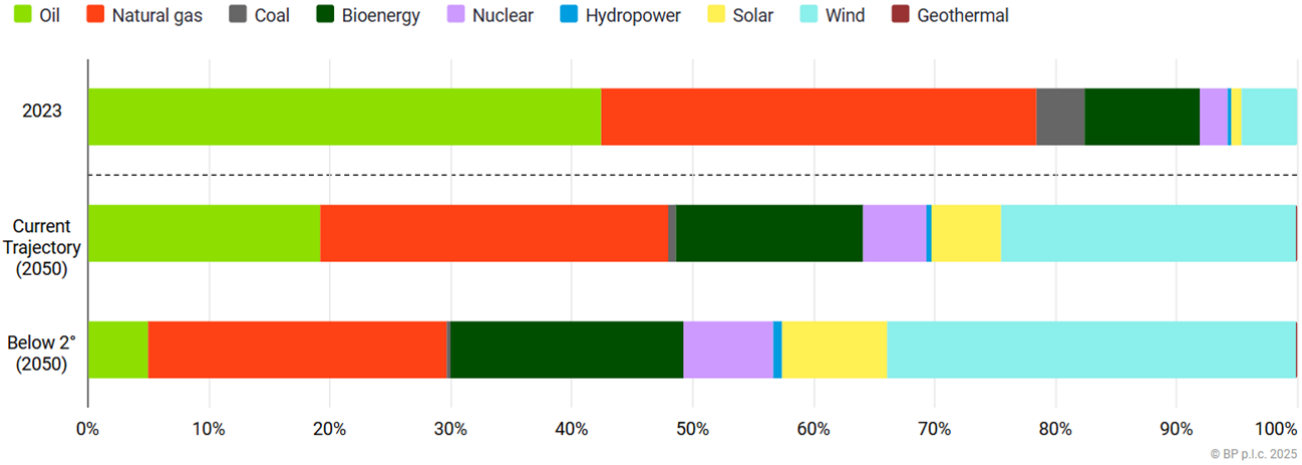
The UK energy system undergoes rapid decarbonization as efficiency gains, electrification and rapidly expanding renewables displace oil and gas

Energy emissions decline steadily in Current Trajectory, falling **by one-third by 2035** and seeing a similar absolute reduction again by 2050

Electricity generation from **solar** and **wind increases 2.6x by 2035** in Current Trajectory, overtaking natural gas as the leading source of power

Demand for **oil and gas** in Current Trajectory **declines by 28% and 23%** respectively by 2035

Primary energy consumption mix by source



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Summary

- The UK's economy grows at a rate of 1.5% a year in 2023-50, closely matching the pace seen over the previous 20 years. With slow population growth, most of the economic expansion reflects rising productivity as measured by GDP per capita.
- Primary energy consumption decreases in both scenarios out to 2050, falling by 21% and 27% in **Current Trajectory** and **Below 2°**, respectively. This reflects gains in energy efficiency and gradual deindustrialization, which more than offset the impact of economic growth on energy demand.
- The UK economy becomes increasingly electrified in both scenarios. The share of electricity in total final consumption rises from 20% in 2023, to 45% by 2050 in **Current Trajectory** and to 60% in **Below 2°**.
- The shift towards electric vehicles contributes to lower oil demand in both scenarios. Oil consumption declines from 1.3Mb/d in 2023, to 0.5Mb/d by 2050 in **Current Trajectory** and to 0.1Mb/d in **Below 2°**.
- Both scenarios show rising power demand out to 2050, with renewables taking centre stage, nuclear expanding steadily, and a sharp decline – but continued reliance – on unabated gas. Hydropower and biomass continue to play minor roles, while CCUS and hydrogen emerge as nascent but growing contributors at the margins.
- Solar and wind generation rises from almost 100TWh in 2023, to over 400TWh by 2050 in **Current Trajectory** and around 550TWh in **Below 2°**. Their combined share in the electricity mix grows from 30% to approximately 75% in both cases.
- Natural gas consumption is expected to decline steadily, though it continues to play an important role in both scenarios. Annual demand falls from 64Bcm in 2023, to 40Bcm by 2050 in **Current Trajectory** and 32Bcm in **Below 2°**.
- Net CO_2 emissions from the energy sector decline from 335Mt in 2023, to around 115Mt by 2050 in **Current Trajectory** and around -50Mt in **Below 2°**. CO_2 removal technologies make negative emissions possible.

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	Level in 2050			Shares in 2050 (%)		Change 2023-2050 (% p.a.)	
	2023	Current Trajectory	Below 2°	2023	Current Trajectory	Below 2°	Current Trajectory	Below 2°
Primary energy consumption by energy type (EJ)								
Total	**6.3**	**5.0**	**4.7**	**100%**	**100%**	**100%**	**-0.9%**	**-1.1%**
Oil†	2.7	1.0	0.2	42%	19%	5.0%	-3.7%	-8.7%
Natural gas	2.3	1.4	1.2	36%	29%	25%	-1.7%	-2.5%
Coal	0.3	0	0	3.9%	0.6%	0.3%	-7.7%	-10%
Nuclear	0.1	0.3	0.3	2.3%	5.2%	7.5%	2.2%	3.2%
Hydro	0	0	0	0.3%	0.4%	0.7%	0.6%	1.9%
Renewables (incl. biofuels)	0.9	2.3	2.9	15%	46%	62%	3.3%	4.2%
Primary energy consumption (native units)								
Oil† (Mb/d)	1.3	0.5	0.1				-3.6%	-8.3%
Natural gas (Bcm)	64	40	32				-1.7%	-2.5%
Total final consumption by sector (EJ)								
Total	**5.7**	**4.6**	**3.6**	**100%**	**100%**	**100%**	**-0.8%**	**-1.6%**
Transport	2.2	1.5	1.3	38%	32%	35%	-1.4%	-1.9%
Feedstocks	0.2	0.2	0.1	3.6%	4.2%	4.0%	-0.3%	-1.3%
Buildings	1.9	1.8	1.1	33%	39%	29%	-0.2%	-2.1%
Industry	1.4	1.1	1.1	25%	25%	32%	-0.9%	-0.8%
Generation								
Power (TWh)	312	577	728				2.3%	3.2%
Hydrogen (Mt)	0.2	0.6	7.3				5.2%	15%
Production								
Liquids† (Mb/d)	0.8	0.4	0				-1.9%	
Natural gas (Bcm)	34	19	4.5				-2.2%	-7.2%
Coal (EJ)	0	0	0					
Emissions								
Carbon emissions†† (Gt of CO_2e)	0.3	0.1	0				-4.0%	
CCS (Mt of CO_2)	0	-31	-122					

EJ = exajoules

Primary energy is accounted using the direct equivalent method, which directly equates secondary energy from non-combustible sources to the primary energy used to produce it.

† Oil supply includes crude oil, shale oil, oil sands, natural gas liquids, liquid fuels derived from coal and gas, refinery gains, and biofuels.

†† Carbon emissions include CO_2 emissions from energy use, industrial processes, natural gas flaring, and methane emissions from energy production.

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