

Wind energy facts and figures



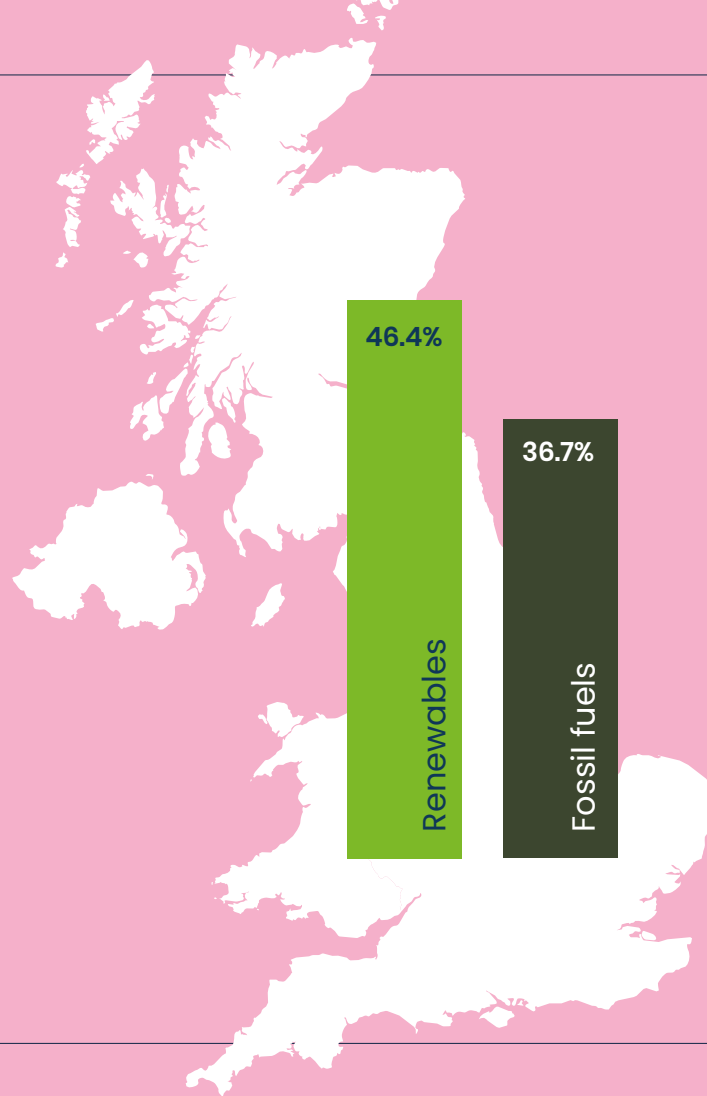
RenewableUK's members are building our future energy system, powered by clean electricity. We bring them together to deliver that future faster; a future which is better for industry, billpayers, and the environment.



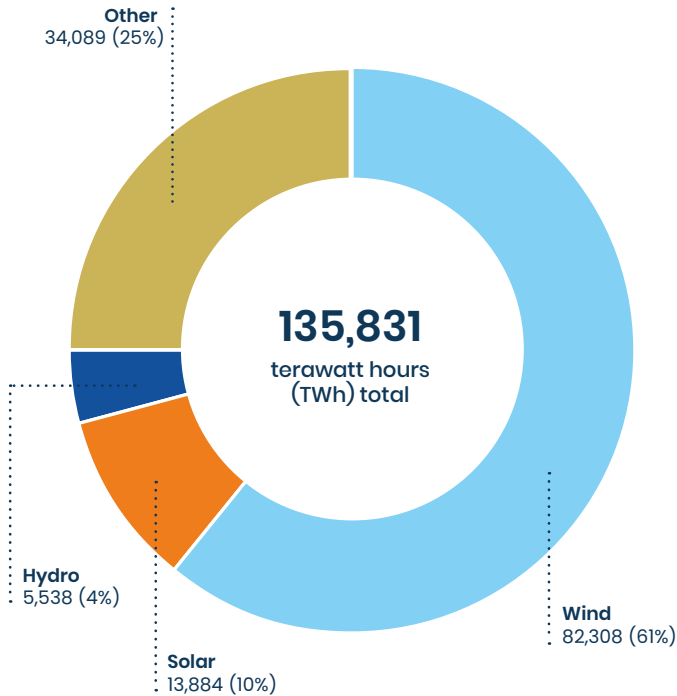
We support over 450 member companies to ensure increasing amounts of renewable electricity are deployed across the UK and to access export markets all over the world. Our members are business leaders, technology innovators, and expert thinkers from right across industry.

For more information, visit www.renewableuk.com

46.4% of the UK's electricity was provided by renewables in 2023

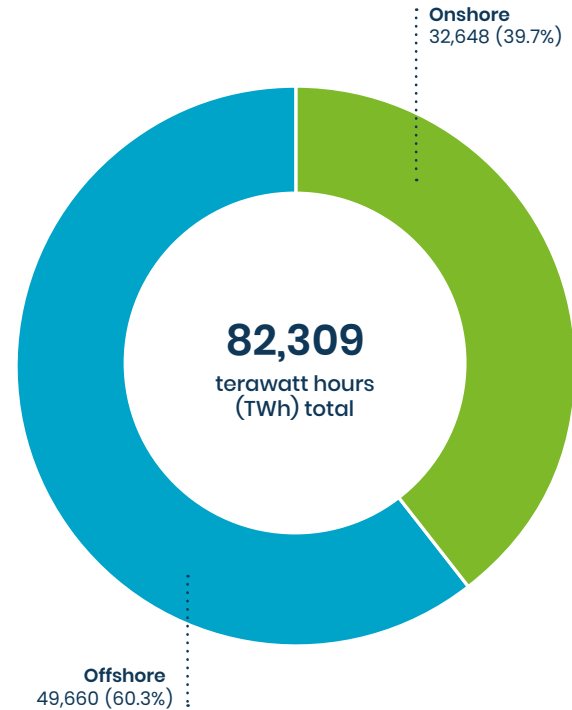


Where does our renewable electricity come from?



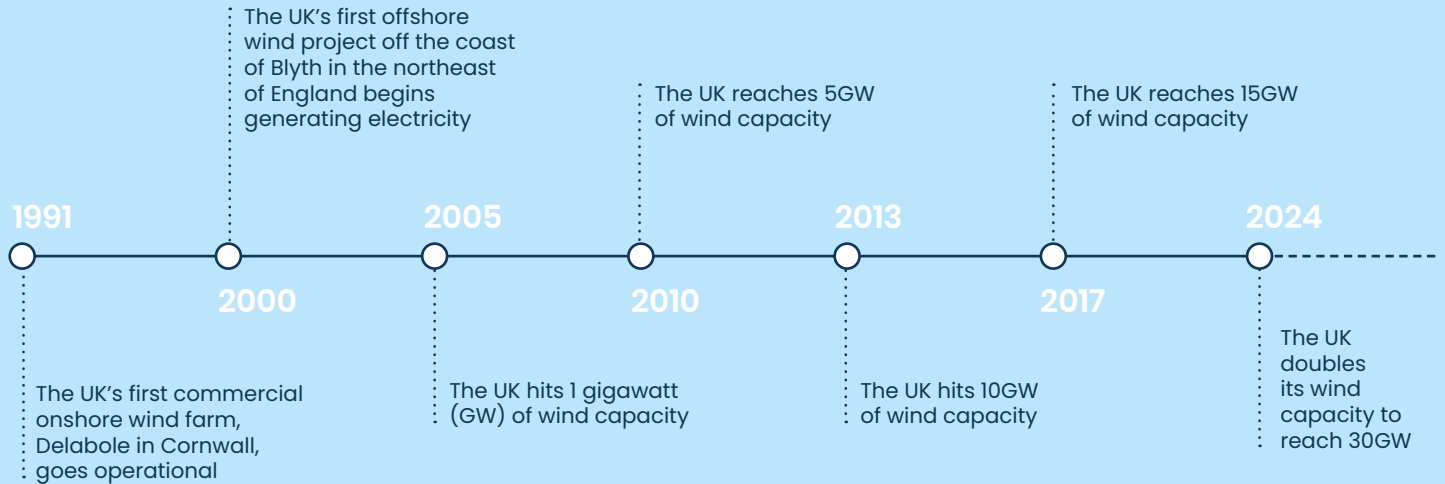
Source: Digest of UK Energy Statistics (DUKES), July 2024

How is wind energy generated?

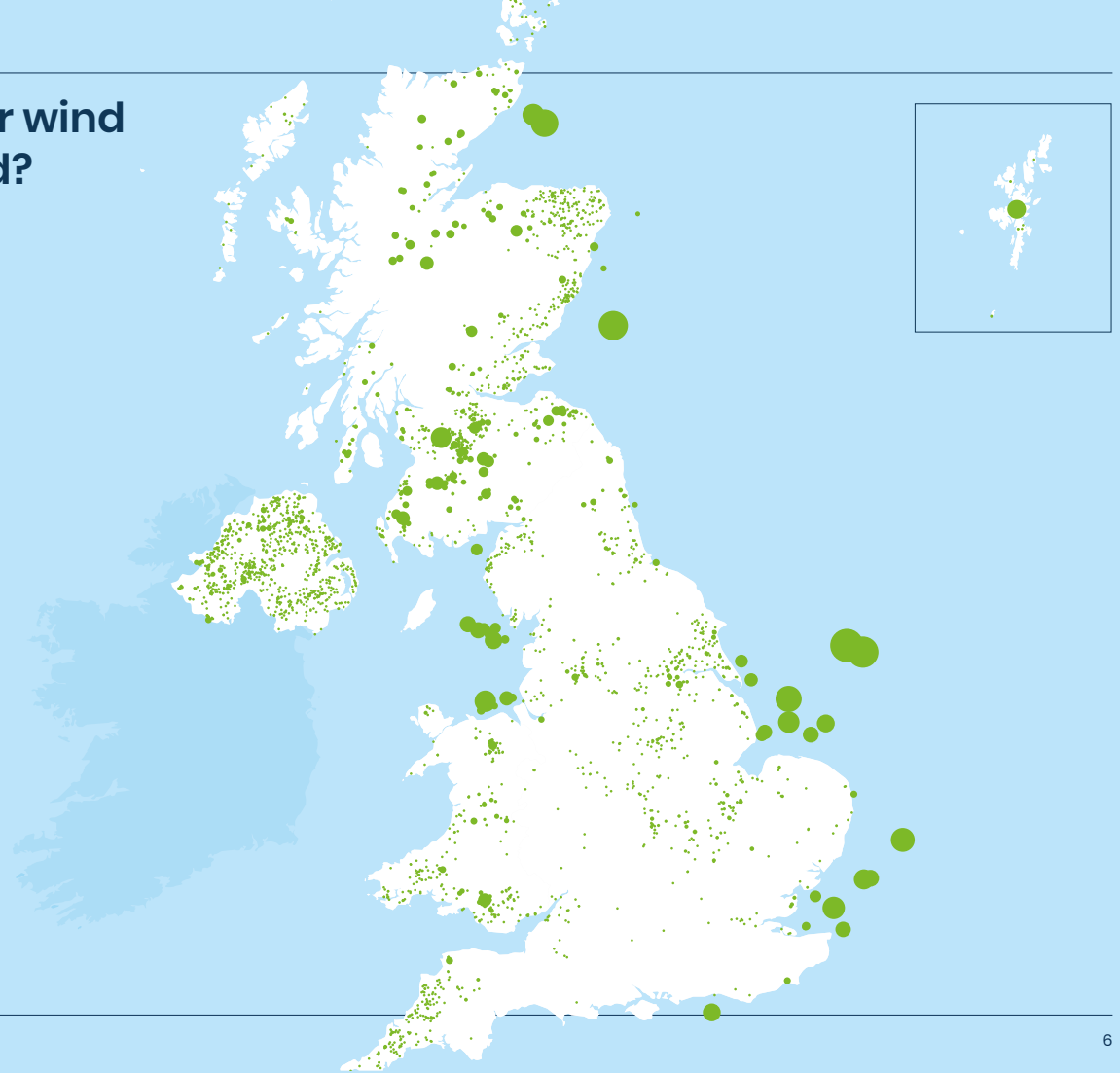


Source: Digest of UK Energy Statistics (DUKES), July 2024

How has the UK's wind industry developed?



Where are our wind farms located?



The UK has
11,906 turbines

Onshore

9,141

Offshore

2,765

(10 floating,
2,755 fixed)

How have turbines
improved?

Reaching 15GW of wind
capacity in 2017 required
8,347 turbines.

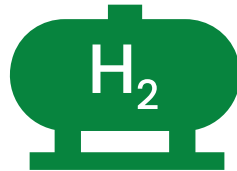
Reaching 30GW of wind
capacity in 2024 required
just **3,495 more.**

15GW
30GW

What happens the wind doesn't blow?

The UK needs a diverse portfolio of renewable energy for a secure decarbonised power system, meaning alternative sources such as solar power are complementary to wind power. We are also interconnected with countries including Belgium, Norway and France, enabling us to import electricity at times of high demand and export it at times of high generation.

Short and long duration electricity storage and green hydrogen can balance the system and maximise the output from our wind and solar resources in a cost-effective way.



Deploying up to 20GW of long duration energy storage by 2050 could lead to system costs savings of up to £24bn.



Storage technologies include pumped hydro and lithium-ion batteries, as well as a range of innovative technologies such as green hydrogen, flow batteries, liquid air storage and compressed air storage. Green hydrogen can also be used to decarbonise sectors that are difficult to electrify, such as steel, ammonia and cement.



How does the industry support jobs?

32,000

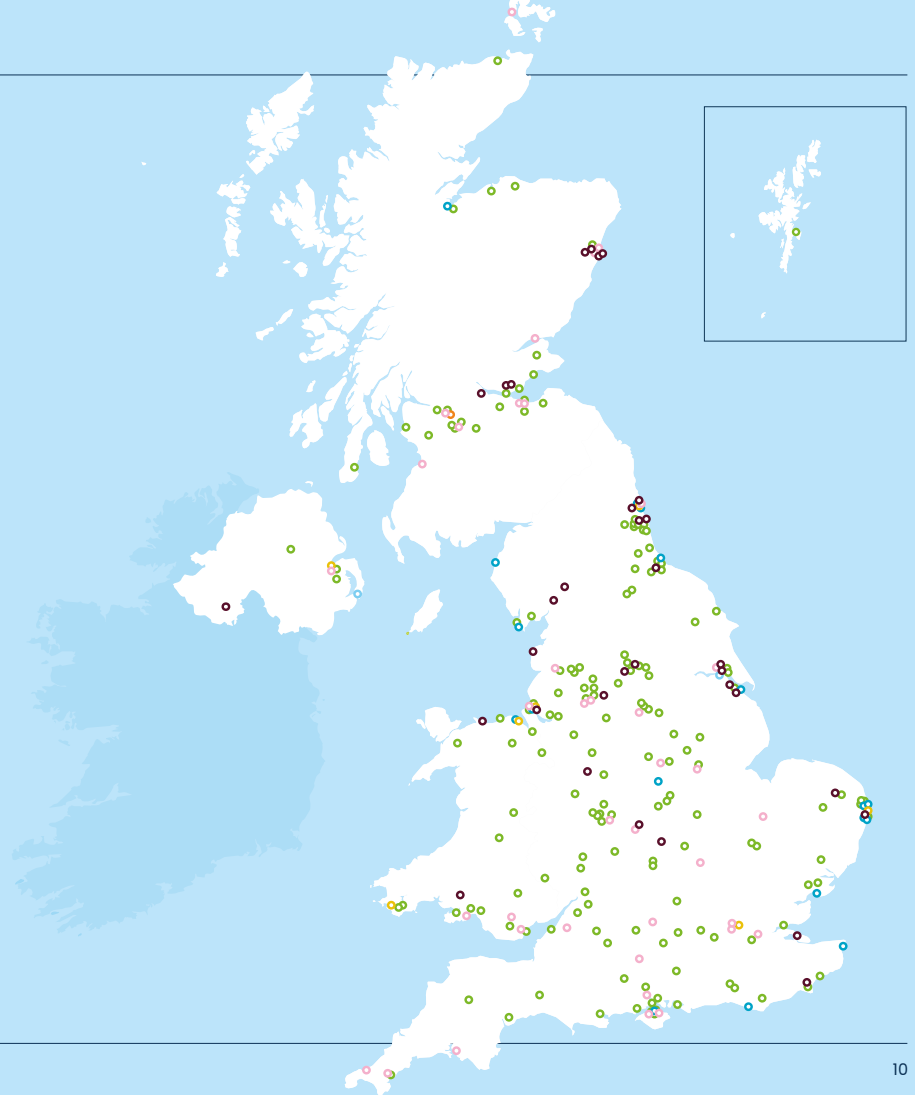
The UK offshore wind industry employs 32,000 people and employment is set to rise to over 120,000 to reach 60GW by 2030.

12,000

Onshore wind in Scotland alone supports over 12,000 jobs, and doubling onshore capacity to 30GW by 2030 will create 27,000 jobs nationwide.

Where is the supply chain located?

- Demonstration & testing
- Distribution
- Installation site
- Manufacturing facility
- Operations & maintenance
- Research & development
- Training centre



How does the industry boost the economy?

£2–3bn

Each new large offshore wind farm adds £2–3bn to the economy.

£25bn

Investment in the offshore wind supply chain will create an economic opportunity worth up to £25bn for the UK over the next 10 years.

£45bn

Delivering 30GW of onshore wind by the end of the decade would boost the economy by £45bn.

How does the industry help households?

Renewable energy is a low-cost form of new electricity generation and is less exposed to volatile international price changes than gas, offering greater energy independence and security.

This would be cheaper for billpayers than alternatives such as gas (with or without carbon capture and storage) or importing power from abroad via interconnectors.

A scenario in which the UK scraps its net zero ambitions in favour of unabated gas would not only leave consumers £39 a year worse off, but would also leave billpayers exposed to the risk of being over £133 worse off each year if the UK were to experience sustained high gas prices, as we have in recent years.

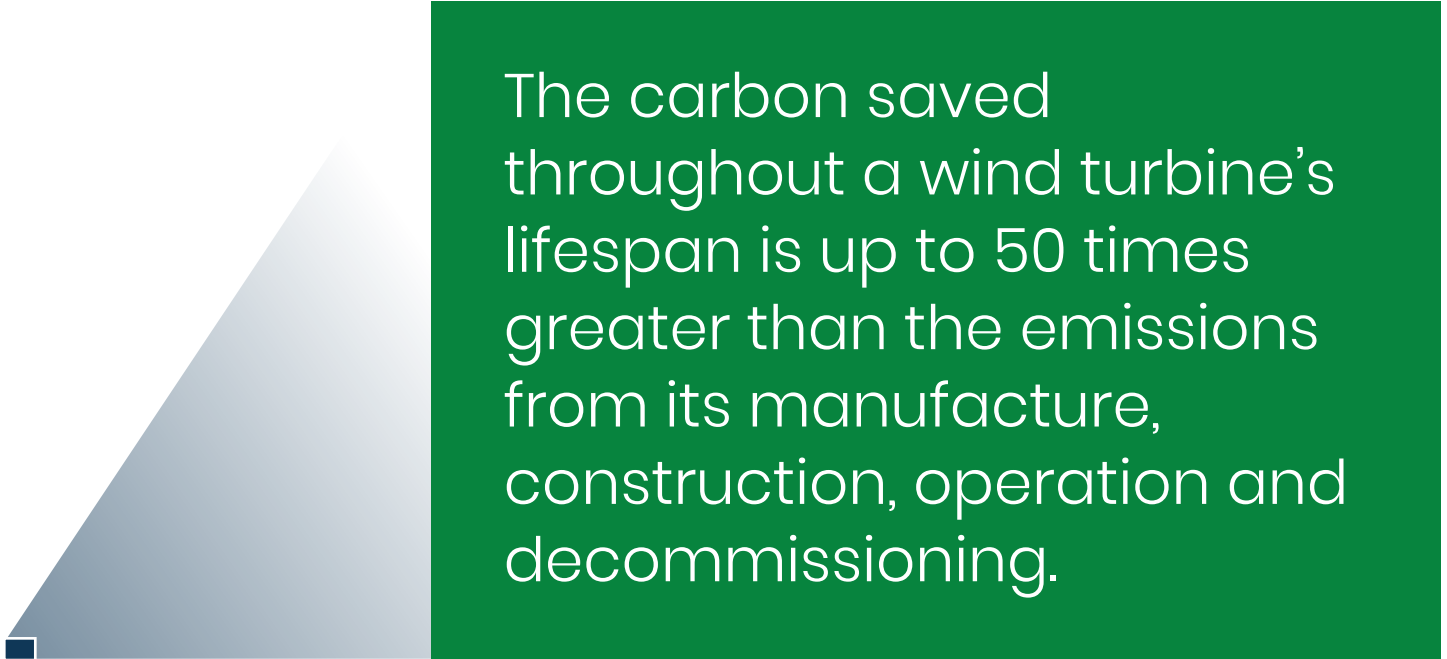
How does the industry work with communities?

It is important for the industry to be good neighbours to those working, living, and visiting the areas of projects, and it strives to ensure engagement, involvement, and inclusion of communities throughout the development and operation of onshore wind in the UK. The industry is investing in the communities that host this infrastructure, through initiatives like community benefit funds (CBFs), local electricity discount schemes (LEDS), alongside local and shared ownership schemes.

For onshore wind alone, CBF investment for communities closest to wind farms across the UK is estimated to be around £75 million a year. This includes over £55 million in Scotland, more than £10 million in England, over £6.5 million a year in Wales, and more than £3 million in Northern Ireland.



Are wind turbines sustainable?



The carbon saved throughout a wind turbine's lifespan is up to 50 times greater than the emissions from its manufacture, construction, operation and decommissioning.

How does the industry support nature?

Renewable energy is positive for the environment, often enhancing habitats and surroundings over the lifetime of a project, whilst supporting the delivery of aligned targets for nature and biodiversity.

Climate and biodiversity challenges are closely linked and can be tackled together, with developers going through a thorough process to understand and mitigate any potential ecological risks and many committing to ambitious biodiversity positive targets for 2030.



How can the Government support the industry?

1.

A clear and coordinated plan for delivering our pipeline of renewable energy projects, in partnership with the devolved nations to ensure the benefits of the transition are felt across the country.

2.

An attractive business environment that draws investment into the UK, with a modernised Contracts for Difference scheme and evolutionary reforms to electricity market arrangements

3.

Efficient frameworks that accelerate deployment of net zero infrastructure, including a reliable and well-resourced planning system, alongside addressing environmental and community impacts.

4.

Scaled-up supply chains and skills capabilities that match our ambitious targets, shaped by the Industrial Growth Plan and investment in key infrastructure such as ports.

5.

A secure energy system through forward planning and investment, enabling greater levels of private investment to flow into technologies like green hydrogen and long duration energy storage.

Renewable energy in numbers



Over 15GW

onshore wind
operational capacity



Over 14GW

offshore wind
operational capacity



Over 30GW

total operational capacity
of all wind farms in the UK



Over 80 TWh/year

total energy produced by
all wind farms in the UK



Over 25 million

homes powered by wind
per year in 2023



Over 35 million

CO₂ saved per year in tonnes by
current UK wind energy generation

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