

Article

Wind energy in the UK: June 2021

Exploring the wind energy industry in the UK, including energy generation, turnover and employment. Includes data from the Office for National Statistics and other official sources.

Contact:
Gemma N Thomas
environment.accounts@ons.gov.
uk
+44 (0)1633 456660

Release date:
14 June 2021

Next release:
To be announced

Table of contents

1. [Main points](#)
2. [Why wind energy is important](#)
3. [Wind electricity generation in the UK](#)
4. [Business activity in wind energy](#)
5. [Future of wind energy](#)
6. [Wind energy data](#)
7. [Data sources and quality](#)
8. [Related links](#)

1 . Main points

- Electricity generation from wind power in the UK has increased by 715% from 2009 to 2020.
- Turnover from wind energy was nearly £6 billion in 2019.
- The UK has the largest offshore wind farm in the world, which is located off the coast of Yorkshire.
- Employment in offshore wind in the UK has increased significantly since 2015, with 7,200 full-time equivalent (FTE) employees in 2019.
- According to the [National Grid](#), 2020 was the "greenest year on record" for Britain, with record high levels of wind energy generation.
- Tomorrow (15 June 2021) is [Global Wind Day](#) - so, in this article we look at what else we know about wind power in the UK.

2 . Why wind energy is important

Climate change is a topic that is high on the policy agenda and attracts substantial media and public interest. Renewable energies like wind are an important part of decarbonising our economy and slowing climate change. The share of renewable energy sources, including wind, in total energy consumption is also an indicator for the United Nations' Sustainable Development Goals ([7.2.1](#)), to help build a more sustainable future.

The UK government has set a legally binding target of "[Net Zero](#)" greenhouse gas emissions by 2050. The UK has [decreased emissions substantially since 1990](#), mainly because of the switch away from coal to natural gas and renewables.

Wind power is one of the [largest sources of renewable electricity](#) in the UK and is expected to continue to grow, so will be important to meet "Net Zero". The UK government included wind power in [The Ten Point Plan](#) for a Green Industrial Revolution and in the [Energy White Paper](#).

3 . Wind electricity generation in the UK

In 2020, the UK generated 75,610 gigawatt hours (GWh) of electricity from both offshore and onshore wind. This would be enough to power [8.4 trillion LED light bulbs](#).

Individually, both offshore and onshore wind electricity generation has grown substantially since 2009.

Wind energy generation accounted for 24% of total electricity generation (including renewables and non-renewables) in 2020; with offshore wind accounting for 13% and onshore wind accounting for 11%.

Data on energy generation is from the UK Department of Business, Energy and Industrial Strategy's [Energy Trends](#).

4 . Business activity in wind energy

The offshore and onshore wind sectors generated almost £6 billion in turnover in 2019.

Most offshore wind activity is in England, and around half of onshore wind activity is in Scotland. The world's largest offshore windfarm, [Hornsea 1](#), is based off the coast of Yorkshire.

Employment in offshore wind in the UK has increased significantly since 2015, with 7,200 full-time equivalent (FTE) employees in 2019. Employment in onshore wind has remained stable over the same period, with 4,400 employees in 2019.

Global employment within the wind energy sector is estimated to be 1.2 million in 2019, according to the [International Renewable Energy Agency](#), with most jobs in onshore wind. The number of jobs has been stable from 2016 to 2019.

Data on UK business activity is from the Office for National Statistics' [Low Carbon and Renewable Energy Economy](#) estimates. The wind sectors include the production of electricity and the design, production, and installation of infrastructure for wind power, including operations and maintenance.

5 . Future of wind energy

According to the [National Grid](#), 2020 was the "greenest year on record" for Britain, with record high levels of wind energy generation.

In May 2021, the [International Energy Agency](#) published [Net Zero by 2050: A Roadmap for the Global Energy Sector](#). The roadmap says that 90% of electricity generation globally will come from renewable sources in 2050, with solar and wind being responsible for 70%.

The International Energy Agency also produces a global [forecast of growth in wind generation capacity](#) (how much wind power can be produced). Increases in capacity are expected, the size of which depend on factors like the cost of wind, policy environment and public perceptions of wind.

6 . Wind energy data

[Low Carbon and Renewable Energy Economy estimates](#)

Dataset | Released 20 May 2021

Annual estimates of low carbon and renewable energy economy activity in the UK and constituent countries (Office for National Statistics).

[Renewable electricity capacity and generation \(Energy Trends 6.1 - quarterly\)](#)

Dataset | Released 13 May 2021

Data on the UK's renewables sector, including capacity, electricity generation and liquid biofuels consumption (Department for Business, Energy and Industrial Strategy).

7 . Data sources and quality

Estimates of the UK's greenhouse gas emissions are accounted for on a residential basis (counting the emissions from entities registered in the UK, even if they are physically elsewhere) and a territorial basis (counting emissions from entities physically in the UK, even if they are registered elsewhere). The Office for National Statistics (ONS) produces estimates on a [residential basis](#) and the Department for Business, Energy and Industrial Strategy (BEIS) produces estimates on a [territorial basis](#). The relationship between these two estimates is detailed in the [ONS' bridging table](#).

Data on wind energy generation are from the Department for Business, Energy and Industrial Strategy (BEIS), from [table 6.1 of Energy Trends](#). There is a [methodology note](#) available for these statistics.

Estimates of turnover, employment, and activity location for the UK come from the [Low Carbon and Renewable Energy Economy \(LCREE\) survey](#), which captures the size of one interpretation of the UK's "green economy". Estimates for more variables are provided in the [accompanying dataset](#). Methodological information is available in the [LCREE QMI](#).

These survey-based estimates are the best available and indicate general trends, but we advise caution in interpreting year-on-year change. Within the dataset, [confidence intervals](#) and coefficients of variation can be found to help aid interpretation of the estimates. It should also be noted that businesses can be active in more than one sector.

Data on global wind employment come from the International Renewable Energy Agency (IRENA). Note that any data that cover multiple countries should be subject to caution when making comparisons because of different methods of data collection across countries. For employment in the UK, IRENA uses estimates from the [Association for Renewable Energy and Clean Technology's 2020 Review](#).

8 . Related links

[Low carbon and renewable energy economy, UK: 2019](#)

Bulletin | 29 March 2021

Estimates of the size of the UK's green economy from the Low Carbon and Renewable Energy Economy Survey, including turnover, employment, investment and trade.

[Energy Trends: UK renewables](#)

Statistical release | Last updated 10 June 2021

Data on the UK's renewables sector, including capacity, electricity generation and liquid biofuels consumption.

[Net Zero by 2050: A Roadmap for the Global Energy Sector](#)

Report | Released May 2021

A report on how the global energy system can reach "Net Zero" by 2050, while providing stable energy supplies and enabling economic growth.

[Renewables 2020: Analysis and forecast to 2025](#)

Report | Released November 2020

Detailed analysis and forecasts through 2025 of the impact of COVID-19 on renewables in the electricity, heat and transport sectors, from the International Energy Agency.

[Net Zero - The UK's contribution to stopping global warming](#)

Report | Released May 2019

A reassessment of the UK's greenhouse emissions from the Climate Change Committee, which recommended a "Net Zero" target by 2050.

[The Ten Point Plan for a Green Industrial Revolution](#)

Policy paper | Released November 2020

The UK government's plan to reach "Net Zero" and support the "green economy", including 10 target sectors, one of which is offshore wind.