IEA Bioenergy
Technology Collaboration Programme

Implementation of bioenergy in the United Kingdom - 2021 update

Country Reports

IEA Bioenergy: 10 2021

This report was prepared from the 2021 IEA World Energy Balances and Renewables Information, combined with data and information provided by the IEA Bioenergy Executive Committee and Task members[1]. Reference is also made to FAOstat and Eurostat data as well as data from national statistics. All individual country reports were reviewed by the national delegates to the IEA Bioenergy Executive Committee, who have approved the content. General background on the approach and definitions can be found in the central introductory report for all country reports.

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HIGHLIGHTS

- Renewables made up 12% of total energy supply in the United Kingdom in 2019. Around 60% of renewable energy is from biomass.
- In the 2000s biogas (landfill gas) was the dominant source of bioenergy in the UK. Solid biomass use saw a strong growth in the past decade and currently represents 60% of bioenergy supply, most of it used for power production.
- The UK power system saw major changes in the past decade, with an almost complete phase out of coal power and a strong increase of renewable power (wind, biopower and solar), now representing over 35% of electricity consumption.
- Natural gas is still the most important source of power, representing 40% of UK electricity production. In the past 5 years there was an increase again in natural gas power to compensate for some of the decline in coal power.
- Heat production in the UK is dominated by fossil fuels, particularly natural gas (>90%). The use of biomass for heating is modest, producing only 6% of heat.
- The role of biofuels in transport has been relatively stable between 2010 and 2017 at around 2-3% (by energy) of transport fuels. In the past years the uptake of biofuels increased again. Biodiesel represented 5% by energy of diesel fuel in 2019; bioethanol represented 3% by energy of gasoline fuel. Most focus is on waste derived biofuels, particularly for biodiesel.

[1] While data for 2020 are starting to become available at national level, it was decided to consider trends up to 2019 for good comparability and benchmarking between the different IEA Bioenergy member countries. Care should also be taken when using 2020 data for analysing trends as these data are distorted by the COVID19 Pandemic.

COUNTRY PROFILE

Population and land use

The United Kingdom of Great Britain and Northern Ireland, commonly known as the United Kingdom (UK), is situated in Northwest Europe. It includes the island of Great Britain and the northeastern part of the island of Ireland. The UK was member of the European Union, but withdrew in 2020.

The UK has a total land area of 242 thousand km² and a population of 67.5 million people, which represents a relatively high population density of 279 persons per km².

Most of the United Kingdom has a temperate climate. Around three quarters of the land area is agricultural land, with a dominance of permanent meadows/pastures which represent half of the UK land area. Arable land represents a quarter. Only 13% is forest land.

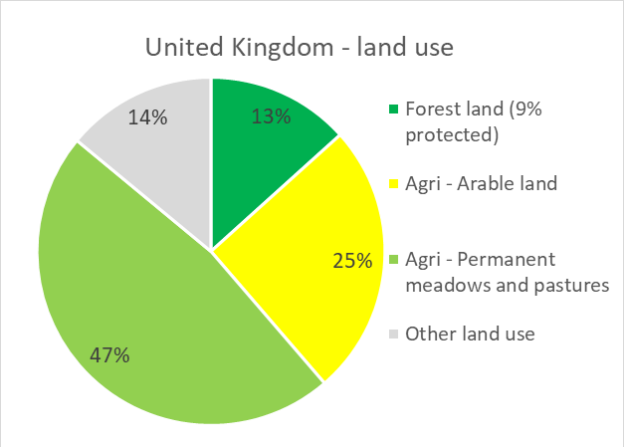


***Figure 1**: Land use in The United Kingdom (2018 figures - Source: FAOstat)*

Final energy consumption

Overall final energy consumption in the United Kingdom (*also including non-energy use of oil, natural gas, and coal in industry*) equates 1.9 tonnes of oil equivalent (toe) per capita, which is around 20% lower than the average of IEA Bioenergy member countries. Particularly energy use in industry is lower than most other countries when expressed per capita.

***Table 1**: Distribution of the final consumption of energy carriers by sector in The United Kingdom (2019 figures - Source: IEA (2021) World Energy Balances and Renewables Information)*

Final consumption energy carriers	Toe/capita (2019)	% of total	*Median* (toe/capita)*
Industry (energy use)	0.32	17%	*0.67*
Industry (non-energy use)	0.11	6%	*0.21*
Transport	0.61	32%	*0.69*
Residential	0.56	30%	*0.57*
Commercial & public services	0.25	13%	*0.34*
other	0.04	2%	
Total	1.89		*2.34*

** Median of the 25 member countries of IEA Bioenergy*[2]

[2] Comparative figures of the different IEA Bioenergy member countries are discussed in the central Countries' Report.

NATIONAL POLICY FRAMEWORK IN THE UNITED KINGDOM

TARGETS AND STRATEGIES

The Climate Change Act commits the UK to reaching net zero Green House Gas emissions by 2050. To achieve this, greenhouse gas (GHG) emissions are limited over successive 5 year periods. Most recently the UK legislated to set the Carbon Budget for 2033-37 which requires a reduction in emissions of 78% from 1990 levels.

In October 2021 the UK published the **Net Zero Strategy: Build Back Greener**[3]. This is a cross-economy strategy which sets out the action the UK will take to stay on track for meeting carbon budgets, the UKs 2030 NDC and which keeps the UK on path to achieve net zero by 2050.

Action is required across all fronts:

- scaling up of the electricity system, all met from low carbon sources to bring forward the UK Government's commitment to a fully decarbonised power system by 2035;
- the development of new hydrogen production and carbon capture infrastructure;
- and roll out of electric vehicles and low carbon heating at scale.

A description of renewable energy and climate policies and measures in the United Kingdom is available at the IEA's Policies and Measures Database: https://www.iea.org/policies?country=UnitedKingdom%2CUnited%20Kingdom

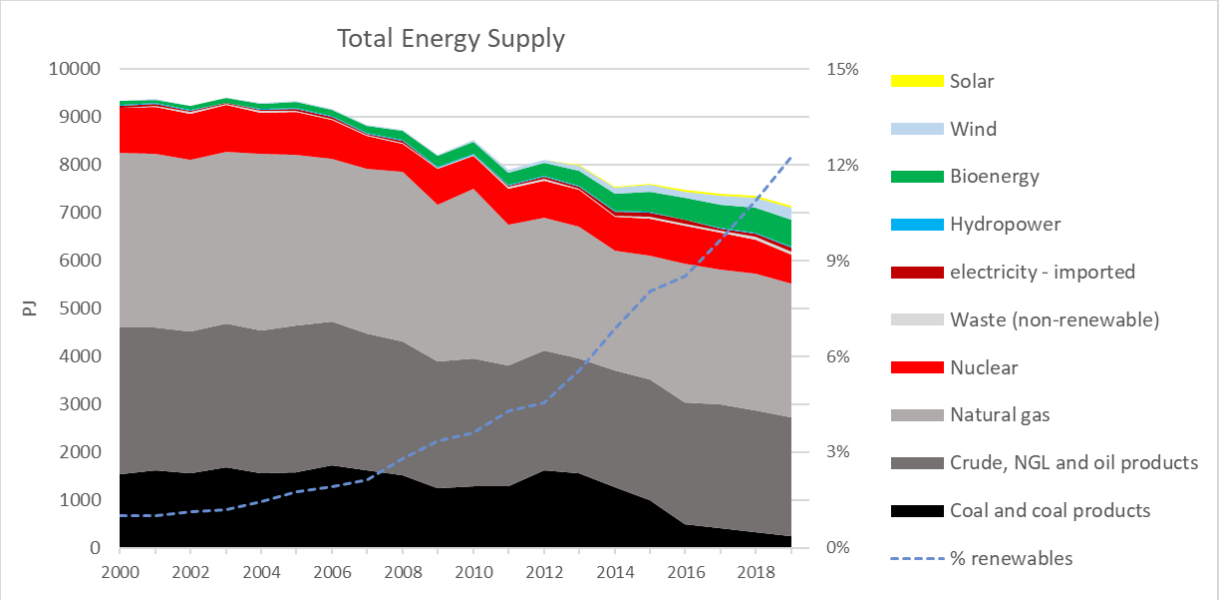
Specific policies related to renewable electricity, renewable heat and transport biofuels will be highlighted in the chapters about the role of bioenergy in different sectors.

3 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1028157/net-zero-strategy.pdf

THE CONTRIBUTION OF BIOENERGY IN NATIONAL ENERGY SUPPLY

TOTAL ENERGY SUPPLY

The total energy supply (TES) of the UK amounted to 7,145 PJ (petajoules) in 2019. It is still dominated by fossil fuels, particularly gas and oil, which represent 39% (2798 PJ) and 35% (2,482 PJ) of total energy supply respectively. Coal represents around 3.4% of TES (243 PJ). Renewable energy sources have a share of 12% or 873 PJ. Around two thirds of renewable energy supply in 2019 came from biomass (572 PJ), followed by wind energy (232 PJ), solar energy (49 PJ) and hydropower (21 PJ). Electricity imports (76 PJ) represent 1.1% of total energy supply.



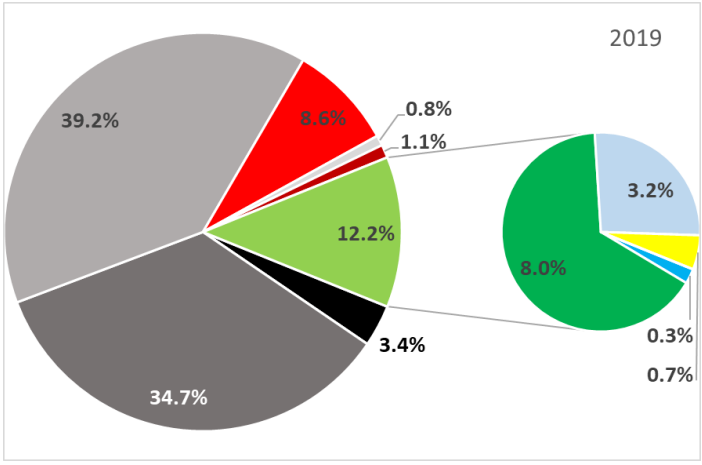


Figure 2: Total energy supply[4] and the contribution of different energy sources in the United Kingdom, with distribution in 2019 (Source: IEA (2021) World Energy Balances and Renewables Information)

Overall TES has declined from 9,300 PJ to 7,150 PJ since 2005, which is a reduction of almost 25%, with the greatest declines in fossil fuels. **Natural gas** remains the most important energy source. Its use declined from 3,600 PJ in 2005 to 2,500 PJ in 2014, but has recently stabilized at somewhat higher levels again (around 2,800 PJ). The use of **oil products** declined from 3,000 PJ in 2005 to 2,500 PJ in 2011 and stabilized around that level since. **Coal** fluctuated around 1,500 PJ up to 2013,

[4] Total energy supply refers to the use of resources. In terms of the role in the energy system this distribution overestimates the role of resources producing electricity with a high share of unused waste heat (like nuclear plants).

representing 20% of TES at its peak (in 2012). However, since 2013, levels of coal have dropped dramatically (by 85%), in 2019 only representing a little over 3% of TES.

The share of renewable energy was at very low levels in the early 2000s (1% of TES). Since 2005 renewable energy supply increased steadily up to a level of 12% in 2019. Bioenergy saw a strong growth from 80 PJ in the early 2000s to 570 PJ recently, now representing 8% of TES. It remains the dominant type of renewable energy. Wind energy grew steadily up to 40 PJ in 2010, after that there has been a further acceleration towards 232 PJ in 2019. Solar energy was fairly modest (< 2 PJ) up to 2010, but has accelerated in the past decade to 50 PJ. Hydropower was fairly stable around 20 PJ.

Figure 3 shows the evolution of the different types of bioenergy. Currently solid biomass dominates, representing 60% of bioenergy at a level of 339 PJ. Biogas is second with 115 PJ, followed by liquid biofuels (69 PJ) and renewable MSW (49 PJ).

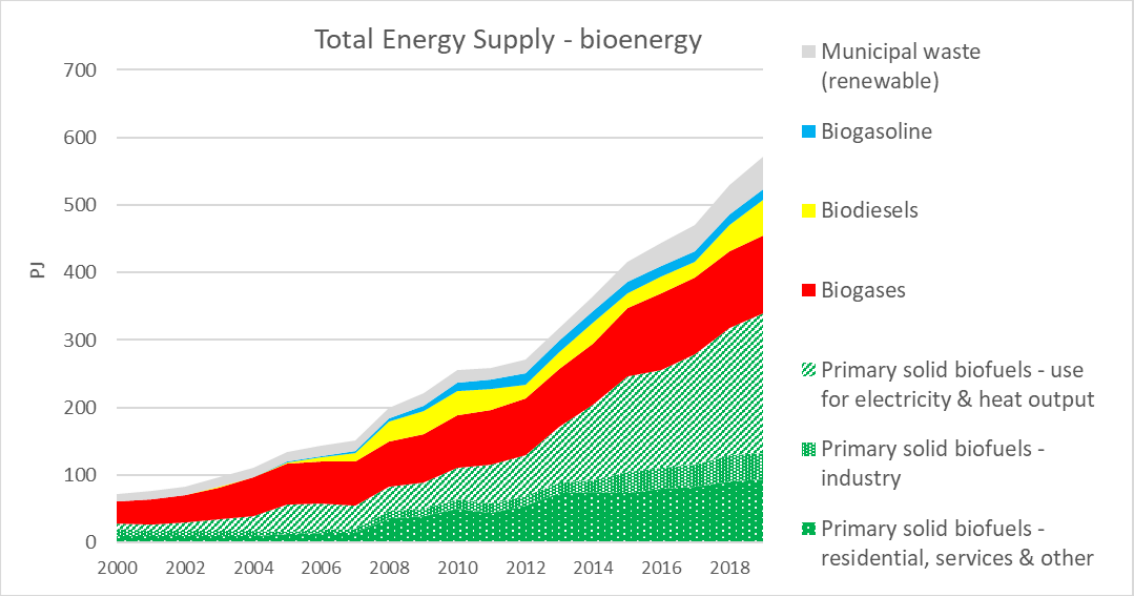


***Figure 3**: Development of total energy supply from bioenergy in the United Kingdom 2000 – 2019 (Source: IEA (2021) World Energy Balances and Renewables Information)*

Bioenergy evolution:

- Solid biofuels were at very low levels in the early 2000s. The use in residential applications has grown to 81 PJ. The use of solid biomass in industry is quite modest at 40 PJ. The dominant application of solid biofuels is now in power production, using more than 200 PJ solid biomass. Growth in this area is connected to the conversion of large coal plants to biomass.
- In the 2000s biogas (particularly landfill gas) was the dominant type of bioenergy. It has continued to grow from 40 PJ in 2002 to 115 PJ in 2019.
- Liquid biofuels were introduced in 2005 and saw a strong growth up to 50 PJ in 2010. These levels have stabilized for some time around 40-48 PJ (up to 2017) and in recent years increased again to a level of almost 70 PJ.
- Renewable MSW was relatively stable between 15 and 20 PJ in the period 2005-2014. In recent years it increased to almost 50 PJ.

Table 2 displays the 2019 total bioenergy supply values on a per capita basis. Compared to the other 24 member countries of IEA Bioenergy (expressed per capita), the United Kingdom ranks at the higher end for biogas, in the middle for liquid biofuels and renewable MSW an at the lower end for solid biofuels.

***Table 2**: Total energy supply per capita in 2019 for different bioenergy carriers*

	Supply per capita	*Median IEA Bioenergy members*
Bioenergy	8.5 GJ/cap	*10.6*
Solid biofuels	5.0 GJ/cap	*7.0*
Renewable MSW	0.7 GJ/cap	*0.8*
Biogas	1.7 GJ/cap	*0.7*
Liquid biofuels	1.0 GJ/cap	*1.5*

Source: IEA (2021) World Energy Balances and Renewables Information

Table 3 indicates the amounts of the different bioenergy carriers compared to some relevant reference points, namely the amount of forest in the country (for solid biomass), the amount of generated MSW (for renewable MSW used for energy), the amount of natural gas consumed in the country (for biogas) and the amount of fossil oil products consumed (for liquid biofuels).

***Table 3**: Comparison of the supply of different bioenergy carriers in 2019 to specific reference points*

	Compared to reference points			*Median**
Bioenergy	7.8 %		of total energy supply	*7.2 %*
Solid biofuels	117.5 GJ/ha_forest		compared to the domestic hectares of forest land (excl. protected)	*21.3 GJ/ha_forest*
Renewable MSW	1.55 GJ/ton_MSW		compared to the total generated MSW in the country	*1.4 GJ/ton_MSW*
Biogas	0.041 GJ/GJ_NG		compared to natural gas supply	*0.023 GJ/GJ_NG*
Liquid biofuels	0.028 GJ/GJ_oil		compared to oil products supply	*0.028 GJ/GJ_oil*

Source: energy data from IEA (2021) World Energy Balances and Renewables Information; forest figures from FAOStat; waste figures from World Bank
** Median of the 25 member countries of IEA Bioenergy*[5]

Specific comments in relation to the reference points:

- While the use of solid biofuels per capita is low compared to other countries, when expressed compared to the domestic forest area it is actually quite high (~6 ton_dry mass of wood per hectare[6]). Mind that a considerable amount of solid biomass – particularly for power production – is imported from other countries.

[5] Comparative figures of the different IEA Bioenergy member countries are discussed in the central Countries' Report.
[6] Counted with a typical calorific value of wood (dry mass) of 19 GJ/ton$_{\text{dry mass}}$

- Biogas is relatively high per capita, and represents around 4% of domestic gas consumption (natural gas is important in the UK energy mix).
- The use of renewable MSW for energy production is somewhat behind other European countries with well-developed waste management systems. The UK also exports MSW to other European countries where it is used for energy generation.
- Liquid biofuels are at quite modest levels.

ROLE OF BIOENERGY IN DIFFERENT SECTORS

OVERVIEW

The overall 2019 share of renewables in **final energy consumption** among electricity, transportation and heat sectors is a little over 12%, with bioenergy making up almost 7% of the energy share (Table 4). Note that these figures are slightly different from the shares in total energy supply (where unused waste heat, e.g. in power production, is also included).

Table 4: *Role of bioenergy and renewable energy in electricity, transport energy and fuel/heat consumption in 2019*

Sector	Share of bioenergy	Share of renewable energy	Overall consumption
Electricity[7]	10.9%	35.2% *(18.8% wind)*	342 TWh (1232 PJ)
Transport energy (final consumption)	4.0%	4.4%	1722 PJ
Overall fuel and heat consumption[8]	Direct biomass: 6.2% Biobased heat: 0.2%	6.6%	2282 PJ
TOTAL FINAL ENERGY CONSUMPTION	**6.7%**	**12.5%**	**5216 PJ**

Source: IEA (2021) World Energy Balances and Renewables Information

The following paragraphs will consider the development of bioenergy in the different sectors.

[7] Renewable electricity production compared to final consumption. Potential renewable shares of imported electricity are not included.

[8] This includes final consumption of fuels and heat in industry, the residential sector, commercial and public services and agriculture/forestry. Transport fuels are excluded. Energy used for transformation and for own use of energy producing industries is also excluded.
Electric heating (direct or through heat pumps) is not included in these figures as this is not separately reported.

ELECTRICITY

Electricity consumption in the UK has declined slightly from 400 TWh in the mid-2000s to 350 TWh in recent years. The UK power system is still dominated by **natural gas**, which represents 38% (130 TWh) of UK electricity consumption in 2019. The share of natural gas power in UK power production actually dropped from 45% in 2010 (175 TWh) to 27% in 2014 (96 TWh), but has picked up again in recent years to a level of 130 TWh, partly to compensate for the reduction of coal power. **Coal** power peaked at 40% of electricity consumption in 2012 (144 TWh), but has now been almost completely phased out, producing only 8 TWh in 2019 (2% of electricity consumption). **Nuclear** remained fairly stable between 60 and 70 TWh in the past decade, producing 15-20% of UK electricity consumption.

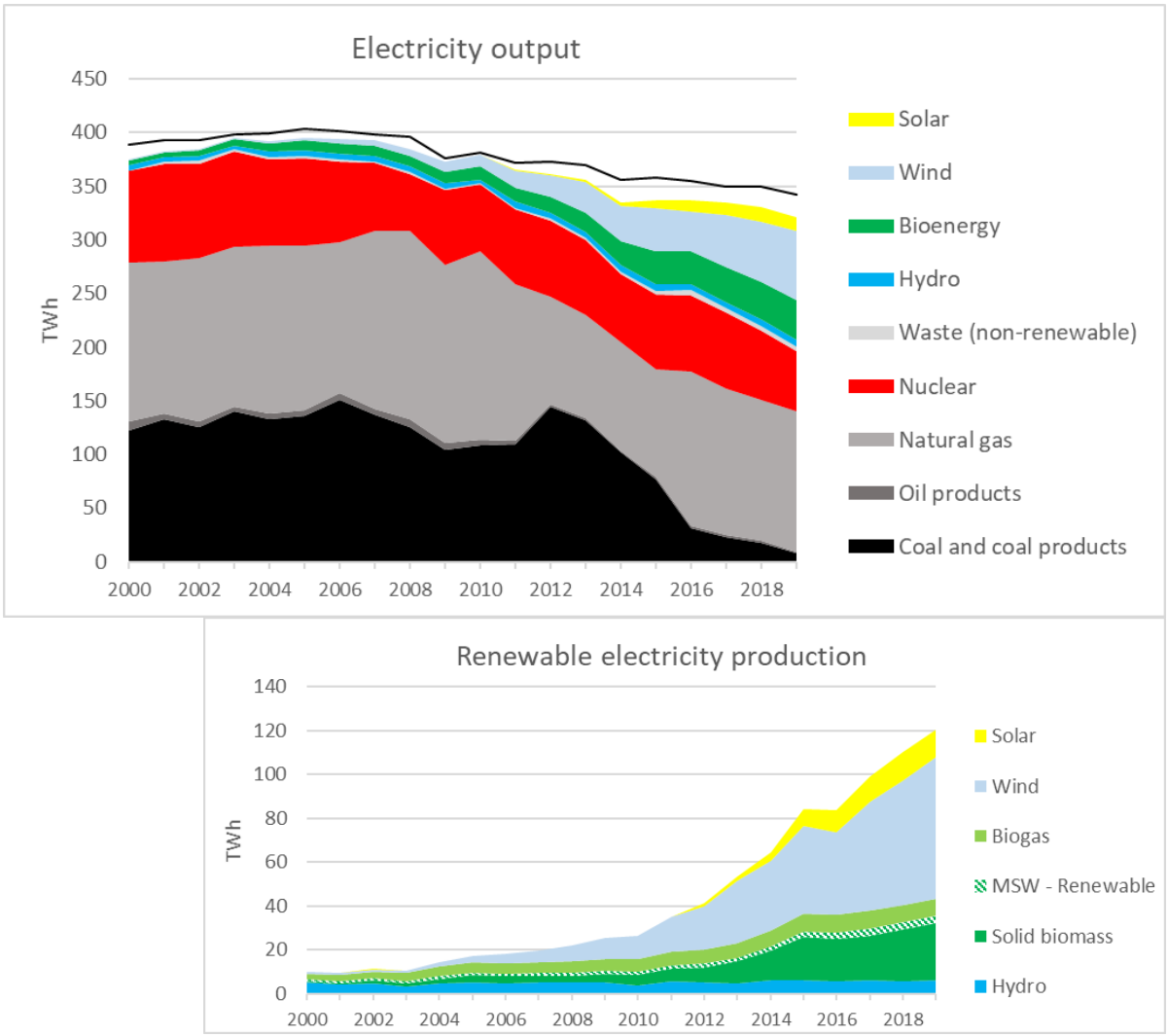


***Figure 4**: Evolution of the electricity mix in the United Kingdom 2000 - 2019 (Source: IEA (2021) World Energy Balances and Renewables Information)*

Renewable electricity also compensated for part of the reduction of coal power, with 120 TWh in 2019, representing more than 35% of electricity consumption in the UK. Since 2010 there has been a strong growth of renewable power. Biomass based electricity increased steadily from 10 TWh in 2010 to 37 TWh in 2019, now producing 11% of electricity consumption. The strongest growth in the past decade has been in wind power, growing from 10 TWh in 2010 to 64 TWh in 2019, 19% of

electricity consumption. Solar power saw a considerable growth between 2013 and 2016 from 2 TWh to 10 TWh. Growth in recent years has been more modest, reaching 13 TWh in 2019 (4% of electricity consumption).

A relevant share of electricity consumption (around 6%) is imported from neighbour countries.

Policy framework

The main relevant policy instruments behind these developments in bioenergy are:

- Biomass-based electricity generation has been incentivised in the UK under the **Renewables Obligations** (RO), and in Great Britain under the **Contracts for Difference** (CfD) scheme and the **Feed in Tariff**, (FIT) while the supplier-led **Smart Export Guarantee** (SEG) also includes generation from biomass.

- The RO and the FIT are now closed to new entrants, while the CfD and the SEG are open for new applicants. In the upcoming CfD allocation round 4 the following biomass technologies are eligible: landfill gas, energy from waste (EfW) with combined heat and power (CHP), sewage gas, advanced conversion technologies, dedicated biomass with CHP and anaerobic digestion >5MW.

- These support schemes require generators to comply with land use and GHG emissions related sustainability criteria. Generating stations report against the sustainability criteria on a monthly or quarterly basis (dependent on the scheme and project scale) and also provide an annual sustainability audit report to verify the sustainability information.

- Landfill gas, waste incineration and sewage gas have made significant contributions to the renewable electricity mix over the years, however, today this is dominated by wood pellets produced from forestry residues and lower grade pulpwood, much of which is imported from North America and Europe.

HEAT/FUEL

Figure 5 shows the role of different fuels/energy carriers for providing heat in different sectors (industry, residential sector, commercial and public services and other). It also includes heat sold to customers, e.g. through district heating. Fuel use by energy producing industries for transformation and for own use is excluded. Electric heating (direct or through heat pumps) is not included in these figures as this is not separately reported in the IEA database.

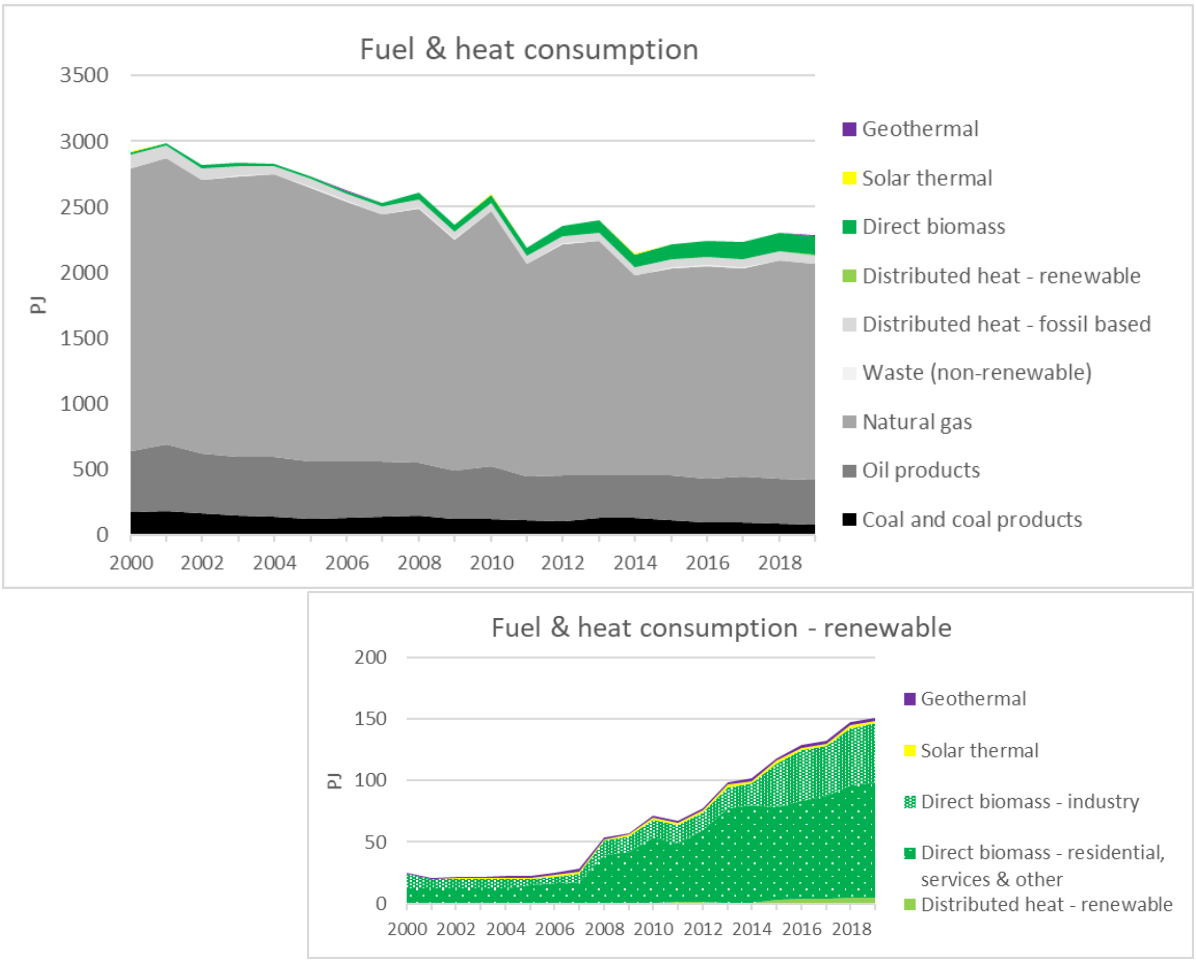


***Figure 5**: Evolution of fuel and heat consumption in the United Kingdom 2000 - 2019 (Source: IEA (2021) World Energy Balances and Renewables Information)*

Overall consumption of fuels for heating has declined somewhat since 2000, but stabilized around 2,300 PJ in the past decade. The provision of heat in the UK is still largely dominated (>90%) by fossil fuels, particularly natural gas which represents 72%. Oil products represent 15% and coal 3.5%. The use of biomass for heating has grown steadily since 2007, but its level still only represents 6% of total fuel/heat consumption.

Heat output generated and sold by CHP plants and heat plants represents only 3% of fuel/heat provided, of which 90% is produced from natural gas and 7% from biomass.

Policy framework

The main relevant policy instruments behind these developments are:

- The **Non-Domestic Renewable Heat Incentive** (NDRHI) launched in 2011 to fund systems providing renewable heating to public buildings or commercial properties, generating heat for industrial or agricultural purposes, or for heating multiple domestic properties. A range of technologies are eligible for support under the NDRHI, including biomass boilers; air source, water source and ground source heat pumps; solar thermal systems; deep-geothermal; combined heat and power (CHP) systems; biogas-combustion systems and biomethane production for injection into the gas-grid.

- Following on from support on the NDRHI, which closed to new applicants on 31 March 2021, the **Green Gas Support Scheme** (GGSS) will support for biomethane production via anaerobic for injection into the gas grid. The GGSS is due to launch on 30 November 2021 and will be open to applicants for four years. Participants will receive tariff payments for a 15-year lifetime.

- The main scheme currently incentivising the installation of domestic low carbon heating in Great Britain is the **domestic Renewable Heat Incentive** (DRHI). The DRHI opened in April 2014 and provides financial support in instalments to homeowners for the generation of heat through low carbon technologies. The DRHI supports air and ground source heat pumps, biomass boilers and stoves, and selected solar thermal systems. The scheme is scheduled to close to new applicants on 31 March 2022.

- The **Boiler Upgrade Scheme**, the successor scheme to the DRHI, will provide upfront capital grants for the installation of air and ground source heat pumps and, in limited circumstances, biomass boilers in homes and small non-domestic buildings. Biomass will be eligible for properties off the gas grid, in rural locations. The £450 million scheme will launch in Spring 2022 and run for three years. The government has also published the Heat and Buildings Strategy, setting out its long term plan for decarbonising heat in buildings.

TRANSPORT

Figure 6 shows an overview of the energy used in transport in the United Kingdom, split up by different fuels/energy carriers.

Gasoline used to be the dominant fuel in the UK transport system, but it has been overtaken by diesel, which now represents 63% of transport fuel consumption, while the share of gasoline dropped to 30%.

In 2004, policy measures to support biofuels were introduced and there was a strong growth between 2007 to 2010 up to a level of almost 3% of transport fuel consumption. After this peak, the level of biofuels in transport stabilized at the same level up to 2017 in line with targets set by the government. In recent years, there is substantial growth again up to 4% of transport fuels. The main biofuel supplied is biodiesel, which is also consistent with the dominant role of diesel fuels in the UK transport system. Biodiesel represented almost 5% by energy of diesel fuel consumption in 2019; bioethanol represented about 3% by energy of gasoline consumption.

Most biofuels consumed in the UK qualify as ‘advanced biofuels’, meaning that they are produced from residues and waste (particularly used oils for biodiesel).

Electricity represents a modest share of 1.1% of total transport energy use. This is mostly in rail - the use of electricity in road vehicles is still marginal in 2019 (0.08% of total transport energy use), but can be expected to grow in the coming years.

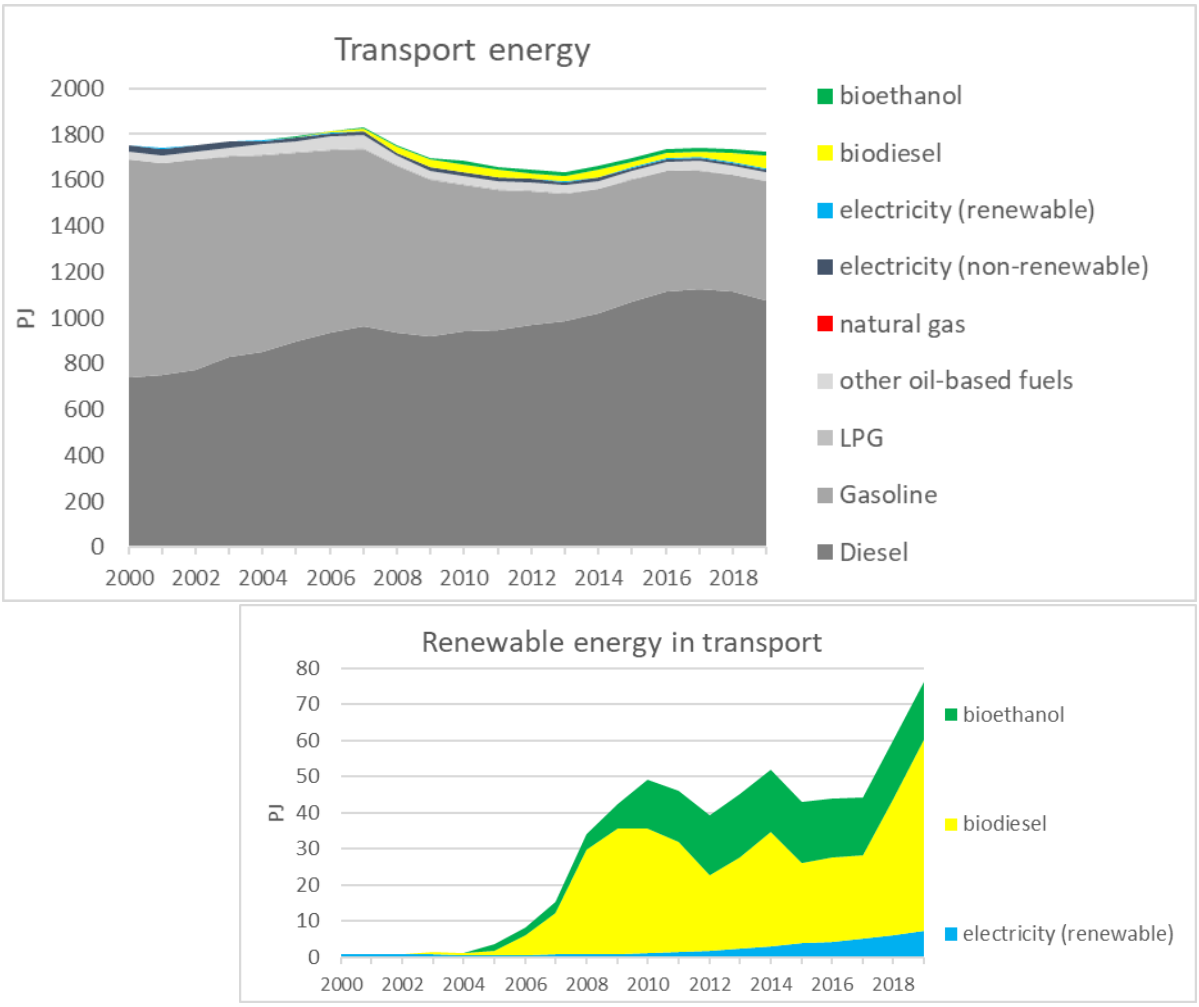


Figure 6: Evolution of transport fuels in the United Kingdom 2000 - 2019 (Source: IEA (2021) World Energy Balances and Renewables Information)

Policy framework

The main relevant policy instruments behind these developments are:

- Low carbon fuel production in the UK is supported under the **Renewable Transport Fuel Obligation** (RTFO), the government's certificate trading scheme that has been successful since 2008 in promoting renewable fuels and reducing carbon emissions from transport. Under the RTFO, fuel suppliers who supply at least 450,000 litres of transport fuel in the UK must demonstrate that a percentage of fuel they supply comes from renewable and sustainable sources that deliver genuine greenhouse gas savings. While currently almost all fuels are used in road transport (blended into standard petrol and diesel), in the medium to long term we expect low carbon fuels to be prioritised for the harder to decarbonise modes, such as aviation. Sustainable aviation fuels (SAF) will be a vital tool in decarbonising aviation and helping the UK reach our net zero goals by 2050. For this reason, a package of measures have been designed to encourage production and use of SAF.

- To support the commercialisation of new fuels, the government has also provided matched capital funding to new advanced fuel plants under the **Advanced Biofuels Demonstration Competition** (ABDC), **Future Fuels for Flight and Freight Competition** (F4C) and the **Green Fuels Green Skies Competition** (GFGS).

- The government caps the contribution crop-based biofuels can make to the RTFO targets (3.83% in 2020, decreasing to 2% by 2032) and incentivises the use of waste feedstocks. In the first 9 months of 2021, waste feedstocks made up over two-thirds of all renewable fuel verified under the RTFO.

COMPARISON WITH THE RENEWABLE ENERGY DIRECTIVE (RED) TARGET

The Digest of UK Energy Statistics[9] shows that following renewable energy shares in *gross final energy consumption* were reached.

Table 5: *Share of renewables in different sectors in the United Kingdom, according to DUKES (2021), and compared to the 2020 target under the Renewable Energy Directive (RED)*

	2005	2010	2015	2019	2020[10]	*2020 target*
Overall share	1.4%	3.4%	7.6%	11.7%	13.6%	15%
In heating & cooling	0.9%	2.1%	4.2%	6.0%	6.6%	-
In electricity	4.1%	7.5%	22.2%	34.7%	38.7%	-
In transport	0.3%	3.3%	4.5%	8.9%	10.3%	10%

The UK has taken important steps to increase its share of renewable energy, particularly in electricity where 2020 saw a considerable larger share of renewables than the ambition from 2009. However, the overall share still fell short of meeting the 15% RED target as challenges remain in the use of renewable heat sources. The UK's recently published Heat and Buildings Strategy set out policies and plans for improving energy efficiency and deploying more low carbon heat sources in order to decarbonise heat in buildings.

Mind that some of these figures may differ from the IEA derived data because of different accounting rules under the Renewable Energy Directive (RED). Transport statistics in DUKES permit multiple counting of advanced biofuels and renewable electricity towards the transport target. For wind and hydro, the load factor is calculated as the average of the past 5 and 15 years respectively. This can result in a lower generation estimate compared with other data sources which use load

[9] DUKES Table 6.7, Source: https://www.gov.uk/government/statistics/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statistics-dukes

[10] Total final consumption of renewable energy increased from 15.3 Mtoe in 2019 to 16.1 Mtoe in 2020 (= 5.5% increase). On the other hand, gross final energy consumption decreased from 134.9 to 118.1 Mtoe from 2019 to 2020 (= 12% decrease), with almost 30% reduction in transport energy, largely due to the COVID pandemic.

factors that vary over time, i.e. depending on weather conditions (wet and windy weather can improve renewable load factors). The heating & cooling figure also includes heat pumps.

RESEARCH FOCUS RELATED TO BIOENERGY

The UK has an active bioenergy research and innovation landscape, in particular led by the research council funded SUPERGEN Bioenergy Hub[11]. The Bioenergy Hub has four main research themes, resources, pre-treatment and conversion, vectors and systems. The latest phase of the Hub will run from 2018 to 2022.

The UK Government plays an active role in funding in this space. The BEIS Biomass Feedstocks Innovation Programme aims to increase the production of sustainable domestic biomass by funding innovative ideas that address barriers to biomass feedstock production. It has provided £4 million to support 25 projects that are seeking to improve feedstock productivity, through breeding, planting, cultivating and harvesting of crops including algae, seaweed, hemp, miscanthus, willow and bracken.

The UK Government is currently designing a £30 million innovation competition for generating hydrogen via bioenergy with carbon capture and storage (H_2 BECCS). The two-phase programme will consist of a feasibility phase and a demonstration phase, centred around innovations in the feedstock pre-processing, syngas treatment and upgrading operations of gasification plants that produce H_2. The competition will also invite non-gasification biohydrogen routes such as AD, fermentation processes and others.

The UK Government is also currently commissioning research to better understand the environmental impacts from Anaerobic Digestion (AD), an important technology to prevent landfill emissions and provide green biogas to the gas network. Fugitive emissions such as methane and ammonia have the potential to reduce or eliminate the carbon benefit from AD and impact air, land and water quality. A project on identifying and assessing technologies to reduce ammonia-related environmental impact from AD and its by-products, such as digestate, is expected to yield results in the first half of 2022. The UK Government is also looking to undertake field trials of AD sites to accurately quantify fugitive methane emissions.

[11] https://www.supergen-bioenergy.net/

RECENT MAJOR BIOENERGY DEVELOPMENTS

The Government is developing an ambitious plan to accelerate the decarbonisation of the economy across all sectors. The Net Zero Strategy[12] set out that achieving net zero involves a move away from fossil fuels and growth in low carbon fuels, such as hydrogen, improving energy and resource efficiency, delivering greenhouse gas removals (GGRs) at scale, and changing the way we use our land to support carbon sequestration and clean energy production among other things. Biomass has a role to play in all of these areas and is a vital resource for the key green technologies and energy carriers highlighted as necessary for net zero: low-carbon electricity, hydrogen, carbon capture, and bioenergy.

The Energy White Paper[13] of 2020 committed to publishing a new Biomass Strategy in 2022. The Strategy will review the amount of sustainable biomass available to the UK and how this resource could be best utilised across the economy to help achieve our net zero greenhouse gas emissions target by 2050 while also support the delivery of our wider environmental targets. The Strategy will also establish the role which Bioenergy with Carbon Capture & Storage (BECCS) can play in reducing carbon emissions across the economy and set out how the technology could be deployed.

A Call for Evidence[14] to inform the Strategy was published in April 2021, in order to strengthen the Government's evidence base around biomass, including how it should be sourced and used across the economy to best contribute to meet the net zero target. An interim Policy Paper is due for publication in late 2021 which will provide a strategic view on the role of biomass across the economy.

[12] https://www.gov.uk/government/publications/net-zero-strategy
[13] https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future
[14] https://www.gov.uk/government/consultations/role-of-biomass-in-achieving-net-zero-call-for-evidence