

Section 6 – UK Renewables January to March 2020

Key results show:

Total renewable generation increased by 30 per cent on the same quarter last year to 40.8 TWh (**Chart 6.2**). This is an increase of 9.4 TWh, a record increase for year on year to quarterly renewable generation. As a result, renewables' share of electricity generation increased to 47.0 per cent, up by 11.1 percentage points on the share in 2019 Q1, reflecting increased capacity and high load factors for wind technologies. (**Chart 6.1**)

Renewable electricity capacity was 47.4 GW at the end of 2020 Q1, a 5.2 per cent increase on 2019 Q1, mostly due to increased capacity for offshore wind which increased by 19 per cent (1.6 GW). (**Chart 6.3**)

Wind generation increased significantly for both offshore (53 per cent) and onshore (29) per cent to 13.2 TWh and 12.8 TWh hours respectively, both improving on the quarterly record by almost a third. In total wind generated 7.5 TWh more than 2019 Q1. Wind contributed 30 per cent of total electricity generation. Solar generation decreased by 11 per cent, from 2.2 TWh in 2019 Q1 to 1.9 TWh in 2020 Q1. (**Chart 6.2**).

In 2020 Q1, 35 MW of small scale capacity was installed. Total small scale capacity is 6.7 GW from roughly 1.02 million installations. (**Chart 6.5**)

Liquid biofuels consumption provisionally rose by 42 per cent, from 422 million litres in 2019 Q1 to 600 million litres in 2020 Q1 with this increase due to sharp increase in biodiesel consumption. This represented 5.8 per cent of all petrol and diesel consumed in road transport. (**Chart 6.6**)

Relevant tables

[6.1: Renewable electricity capacity and generation](#)

[6.2: Liquid biofuels for transport consumption](#)

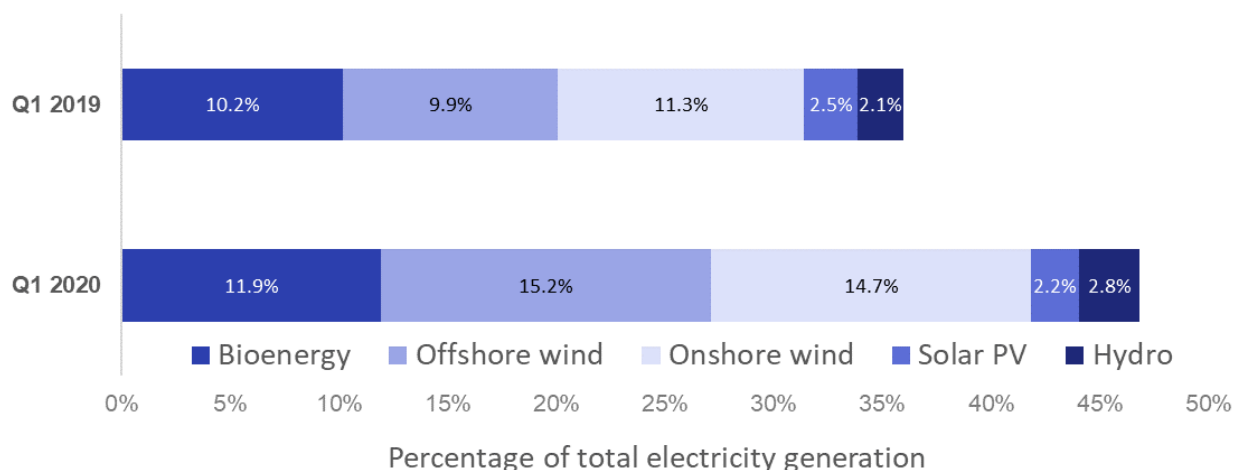
Contacts for further information:

Will Spry
Renewables Statistics
Tel: 020 7215 5394

Benjamin Lucking
Renewables Statistics
Tel: 020 7215 5010

E-mail: renewablesstatistics@beis.gov.uk

Chart 6.1 Renewables’ share of electricity generation – 2020 Q1 ([Table 6.1](#))

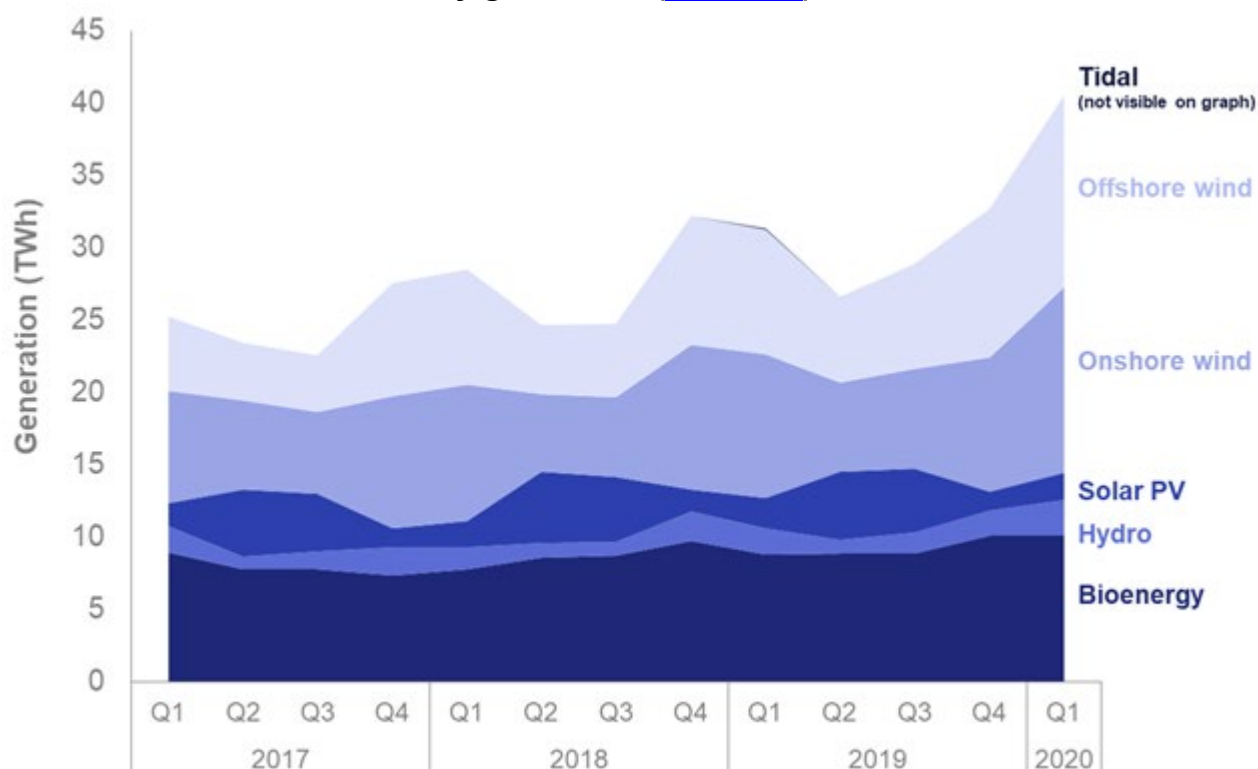


Total electricity generation from renewables in 2020 Q1 was 40.8 TWh, an increase of 30 per cent from 31.5 TWh in 2019 Q1. This broke the previous record for quarterly renewable generation by nearly a quarter and is the largest increase in year on year quarterly generation.

Renewables’ share of total electricity generation increased from 35.9 per cent in 2019 Q1 to 47.0 per cent in 2020 Q1, up by 11.1 percentage points and a new record by a margin of 8 percentage points. Quarterly renewables share has never previously exceeded 40 per cent of total electricity generation.

The large increase in generation is due both to increased capacity and the weather conditions. With regards the increase in capacity, this was mostly for offshore wind (up by 1.6 GW) with smaller increases to onshore wind (up by 0.3 GW), and bioenergy (up by 0.3 GW). In addition to this increased capacity, the weather played a part. Load factors for wind were very high as wind speeds rose to the second highest quarterly average in our data series.

Total electricity generation figures (all generating companies) can be found in table ET 5.1, at: www.gov.uk/government/statistics/electricity-section-5-energy-trends

Chart 6.2 Renewable electricity generation (Table 6.1)

In 2020 Q1, generation from onshore wind was 12.8 TWh, up 29 per cent on the same quarter last year. Generation from offshore wind was 13.2 TWh, up 53 per cent on the same quarter last year, and this is the first quarter that onshore wind generated more than 10 TWh. The increase in generation for offshore wind was partly due to increase in capacity, which was up by 19 per cent compared to the same quarter of last year. In addition, both offshore and onshore generation increased due to high winds speeds, with February seeing the highest average wind speed of any month since 2000. See Energy Trends table 7.2 at:

www.gov.uk/government/statistics/energy-trends-section-7-weather.

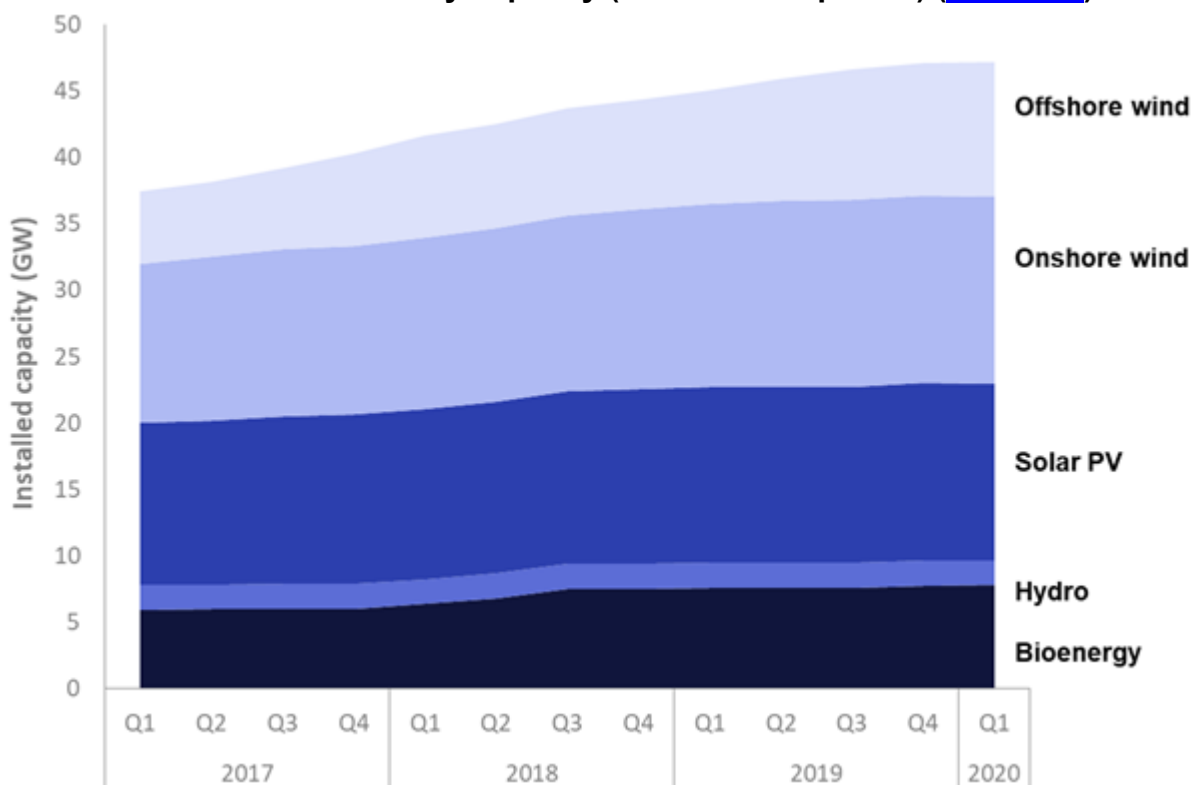
Generation from solar photovoltaics decreased by 11 per cent (0.2 TWh) to 1.9 TWh, compared to 2019 Q1. Capacity increased slightly (1.3 per cent) this quarter however there was a decrease in the number of sunlight hours compared to the relatively high level seen in 2019 Q1, falling from 3.4 to 3.2 hours per day on average.

Hydro generation increased by 0.6 TWh on last year to 2.5 TWh, a 35 per cent increase. Average rainfall almost doubled compared to 2019 Q1 and this quarter was the wettest since the final quarter of 2015.

In 2020 Q1, generation from bioenergy^[1] was 10.4 TWh, up by 17 per cent on the same quarter of 2019. The main component of this increase was the 1.2 TWh increase in electricity generated from Plant Biomass.

Offshore wind had the largest share of renewable generation with 32.4 per cent, followed by 31.4 per cent from onshore wind, 25.5 per cent from bioenergy, 6.0 per cent from hydro and 4.7 per cent from solar PV.

[1] Bioenergy consists of: plant biomass, animal biomass, biodegradable municipal solid waste, landfill gas, sewage gas, anaerobic digestion and co-firing (generation only)

Chart 6.3 Renewable electricity capacity (as at end of quarter) (Table 6.1)

At the end of 2020 Q1, the UK's renewable electricity capacity totalled 47.4 GW¹, an increase of 5.2 per cent on that installed at the end of 2019 Q1. Two thirds of this new capacity was from the completion of new offshore wind installations (1.6 GW). New offshore wind capacity included the completion of the Beatrice expansion, Hornsea One becoming operational in stages and the first stage of East Anglia One coming online. These three schemes are all supported by Contracts for Difference (CfD).

For more information on CfD see here: www.lowcarboncontracts.uk/contracts-for-difference-cfd

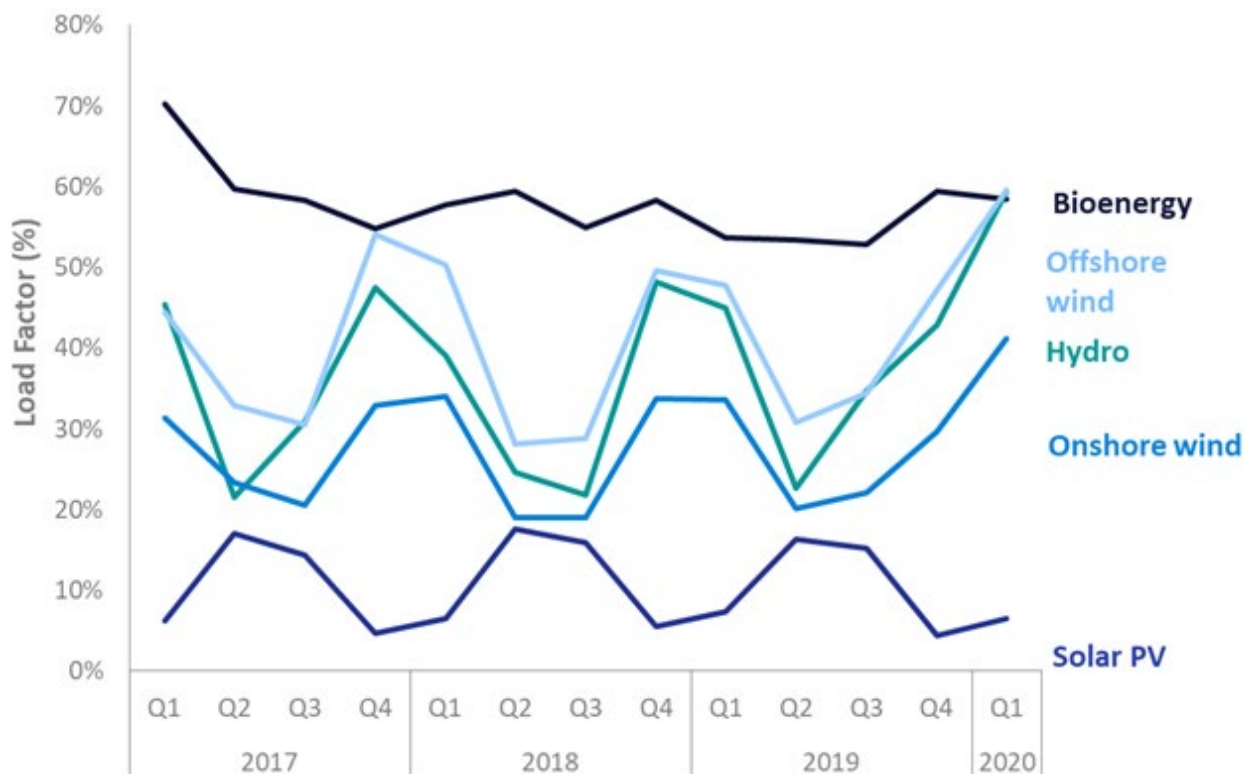
Offshore wind saw the highest rate of growth of the renewable technologies at 19 per cent. This was followed by energy from waste at 15 per cent, anaerobic digestion at 14 per cent, onshore wind at 2.5 per cent, Solar PV at 1.3 and Plant Biomass with an increase of less than 1 per cent.

At the end of 2020 Q1, onshore wind capacity at 14.1 GW represented 29.8 per cent of all renewable capacity, the highest share of renewable technologies. This was followed by Solar PV (28.2 per cent), offshore wind (21.4 per cent), bioenergy (16.6 per cent) and finally hydro (4.0 per cent).

¹ To note that renewable generation and capacity figures include installations accredited on all support schemes (Renewables Obligation, Feed in Tariffs, Contracts for Difference), as well as sub 50 kW installations commissioned, and registered on the Microgeneration Certification Scheme (MCS). In addition, the solar PV figures will also include installations awaiting accreditation when FITs closed at the end of March 2019. However, the figures presented here and in ET 6.1 do not currently include unsubsidised solar installations below 1MW capacity that are not registered on the MCS. We are reviewing data sources to improve coverage.

Chart 6.4 Renewable electricity load factors (Table 6.1)

Load factors are calculated as electricity generated by a technology as a proportion of maximum potential generation over the period, given the installed capacity.



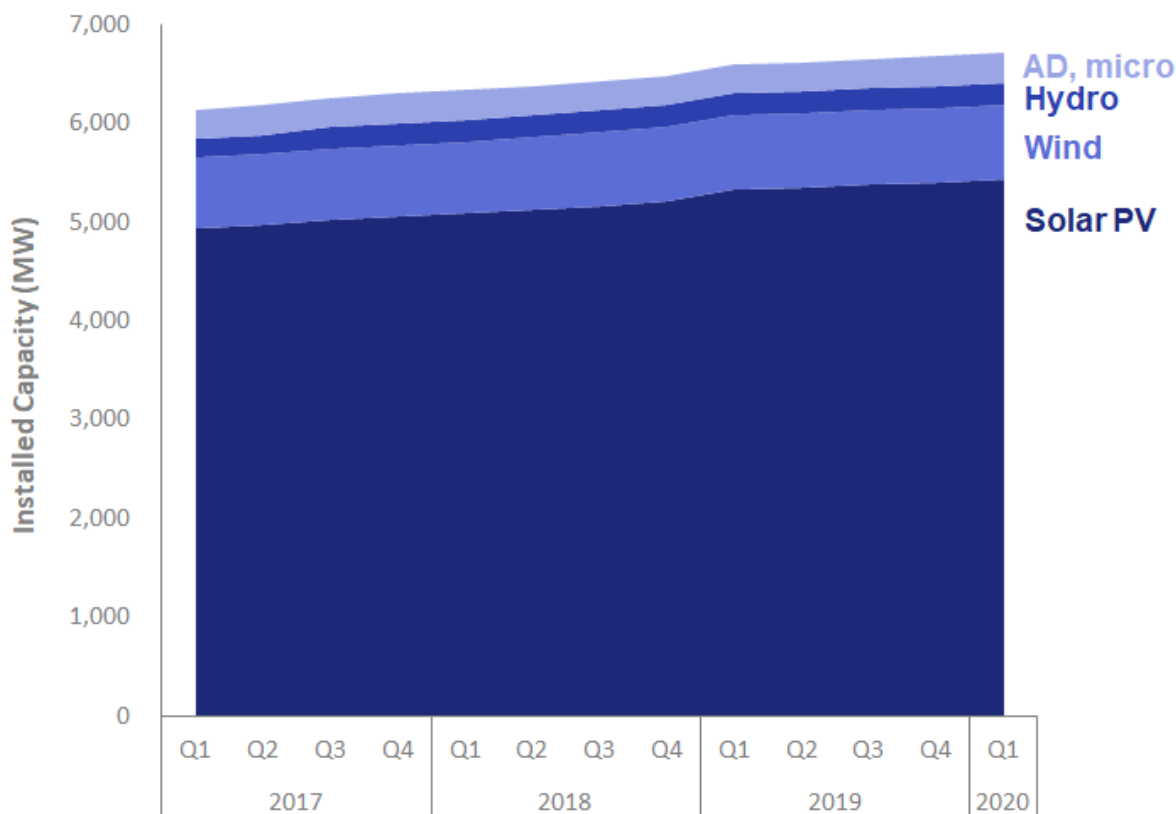
At the end of 2020 Q1^[1], the load factor for all renewables was 39.5 per cent, this is the highest quarterly load factor since the first quarter of 2014.

In 2020 Q1, onshore wind's load factor was 41.6 per cent whilst offshore wind's load factor was 59.7 per cent. These load factors were 33.8 per cent and 47.8 per cent for onshore and offshore wind respectively at the same time last year. This marked increase in the load factor was due to average wind speeds which were the highest since 2008. Both onshore and offshore wind saw record quarterly load factors.

Hydro's load factor in 2020 Q1 was 60.1 per cent, compared with 45.1 per cent at the same time last year. This quarter's hydro load factor is the second highest in our time series, reflecting higher than average rainfall, being the wettest quarter since 2015.

For plant biomass, the load factor in 2020 Q1 was 72.5 per cent. This is compared with 61.3 per cent in 2019 Q1.

^[1] Load Factors are calculated using an average of capacity at the start and end of the quarter. Therefore, they can be influenced by the time in the quarter when any new capacity came online.

Chart 6.5 Small scale generators: installed capacity (as at end of quarter)

The Feed in Tariff (FiT) scheme² closed to new entrants at the end of March 2019. BEIS continues to monitor small scale generation using the Central FiTs Register as well as records of installations that register with the Micro Generation Certification Scheme (MCS) and the Renewable Energy Planning Database (REPD). The statistics published here do not currently include unsubsidised installations below 1MW capacity that are not registered on the MCS database. We are reviewing data sources to improve coverage.

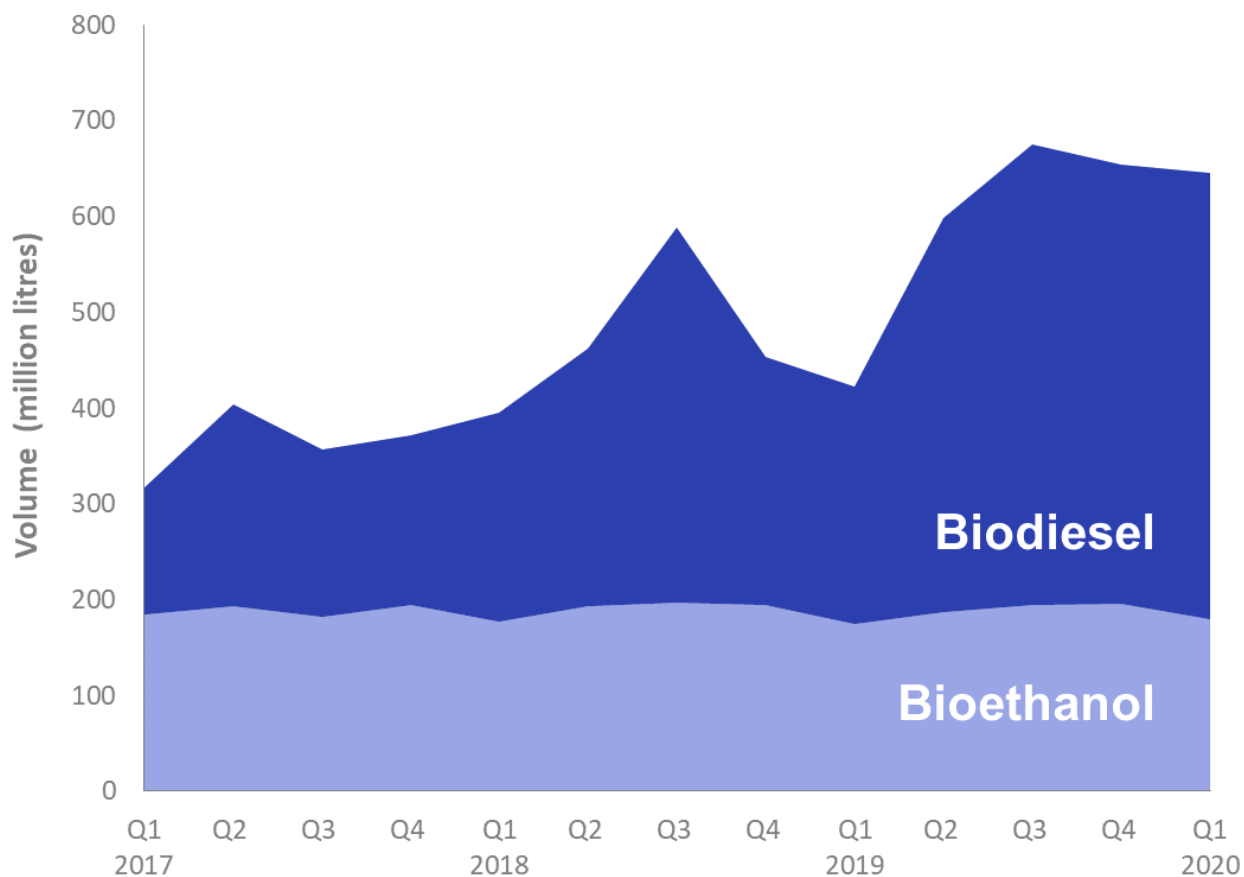
There were over 1 million small scale installations (less than 5 MW) installed at the end of Q1 2020, with a total capacity of 6,712 MW. This accounts for 14 per cent of total renewable capacity.

Solar photovoltaics (PVs) represents an overwhelming majority of small-scale installations at 99 per cent as well as a significant majority of the small scale capacity at 81 per cent. 940,000 of these installations are sub 4 kW retrofitted solar schemes. These account for 40 per cent of total small-scale capacity.

More statistics on small scale renewable electricity generation and Feed in Tariffs can be found at: www.gov.uk/government/collections/feed-in-tariff-statistics

Following the closure of the FIT scheme to new installations, government laid legislation in June 2019 to introduce a new supplier-led smart export guarantee (SEG) in Great Britain from 1 January 2020. Under the SEG, licensed electricity suppliers (with 150,000 domestic customers or more) are required to offer small-scale low-carbon generators a price per kWh for electricity exported to the grid. Further information on the SEG is available at: www.gov.uk/government/consultations/the-future-for-small-scale-low-carbon-generation

² Data are for schemes accredited under the Microgeneration Certification Scheme (MCS) and ROOFIT, which are prerequisites for registering for the FIT scheme; not all of these installations will eventually be confirmed onto the FIT scheme.

Chart 6.6 Liquid biofuels for transport consumption (Table 6.2)

In 2020 Q1^[1], 645 million litres of liquid biofuels were consumed in transport, an increase of 53 per cent on the total of 422 million litres in 2019 Q1.

Bioethanol consumption increased by 2.6 per cent, from 175 million litres in 2019 Q1 to 179 million litres in 2020 Q1. Biodiesel consumption increased by 89 per cent, from 247 million litres in 2019 Q1 to 466 million litres in 2020 Q1.

Biodiesel represented 72 per cent of biofuels consumption, with bioethanol taking the remaining 28 per cent of the total volume of biofuel consumed.

In the first quarter of 2020, bioethanol accounted for 4.7 per cent of motor spirit, up from 4.3 per cent in 2019 Q1. Biodiesel represented 6.4 per cent of diesel (DERV) consumption, a significant increase on the 3.5 per cent in the first quarter of 2019. Their combined contribution was 5.8 per cent, an increase from 3.8 per cent in the same quarter of 2019 and a new record share.

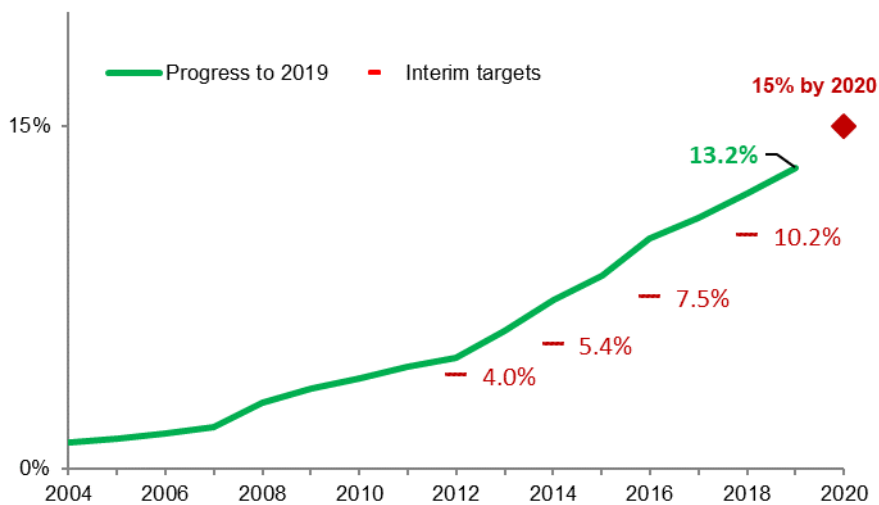
In 2018 the Renewable Transport Fuel Obligation (RTFO) increased the biofuel production targets from 4.75 per cent to 12.4 per cent by 2032 with an intermediary target of 9.75 per cent by the end of 2020.

^[1] Data for the latest quarter are provisional, due to unavailability of the last months' data at the time of compilation.

Progress against the Renewable Energy Directive (2009)

- Following the March 2020 edition of Energy Trends, where a first estimate was made for renewable electricity for the year 2019 on a Renewable Energy Directive basis, the below shows overall progress against the Directive.
- In 2019, renewable energy provisionally accounted for 13.2 per cent of final energy consumption, as measured using the 2009 Renewable Energy Directive (RED) methodology, an increase of 1.2 percentage points on 2018.
- The chart below shows progress to 2019, interim targets and the final 2020 target (15 per cent);

Progress against Renewable Energy Directive and UK targets



- Renewable electricity accounted for 34.9 per cent of total generation (as measured using the RED methodology), an increase of 3.3 percentage points compared to 2018.
- Renewable heat accounted for 7.9 per cent of total heat consumption, an increase of 0.3 percentage points on 2018.
- Data for the transport estimate are being currently being reviewed and will be included in the Digest of UK Energy Statistics (DUKES) which is published on 30th July 2020. The result of that review will update the overall 13.2 per cent figure above.