

Section 6 – UK Renewables July to September 2019

Key results show:

Renewable electricity generation was 28.8 TWh in 2019 Q3, an increase of 16 per cent on the 24.7 TWh in 2018 Q3. **(Chart 6.2)**

The share of total electricity generation from renewables – 38.9 per cent – is the highest recorded and marginally exceeds the share of generation from gas for the first time. The increase was largely due to increased load factors for wind as well as increased renewable capacity. **(Chart 6.1)**

Onshore wind generation rose by 24 per cent (1.3 TWh) with offshore wind increasing by 43 per cent, the highest increase across the technologies, to 7.2 TWh. For the first time, offshore wind generation exceeded onshore wind generation. **(Chart 6.2)**

Renewable electricity capacity was 46.9 GW at the end of 2019 Q3, a 7.2 per cent increase (3.2 GW) on a year earlier, with more than half of the increase coming from offshore wind, and more than one quarter from onshore wind. **(Chart 6.3)**

Liquid biofuel consumption increased by 18 per cent, from 588 million litres in 2018 Q3 to an estimated 696 million litres in 2019 Q3. Bioethanol consumption decreased by 2.2 per cent while biodiesel consumption increased by 29 per cent. In 2019 Q3, liquid biofuels represented 5.8 per cent of petrol and diesel consumed in road transport, up from 4.9 per cent a year earlier. **(Chart 6.6)**

Relevant tables

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

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

Contacts for further information:

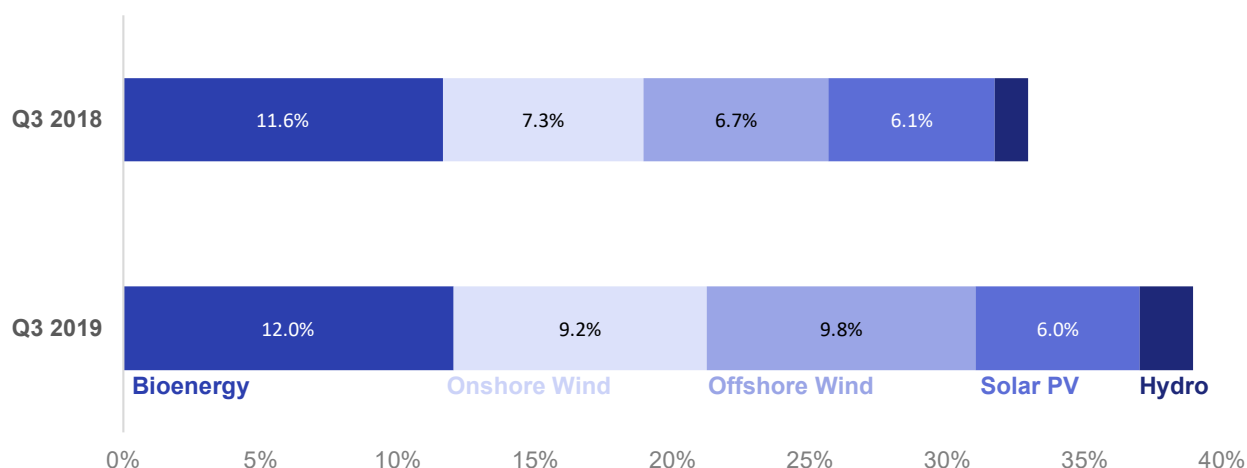
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Chart 6.1 Renewables' share of electricity generation ([Table 6.1](#))

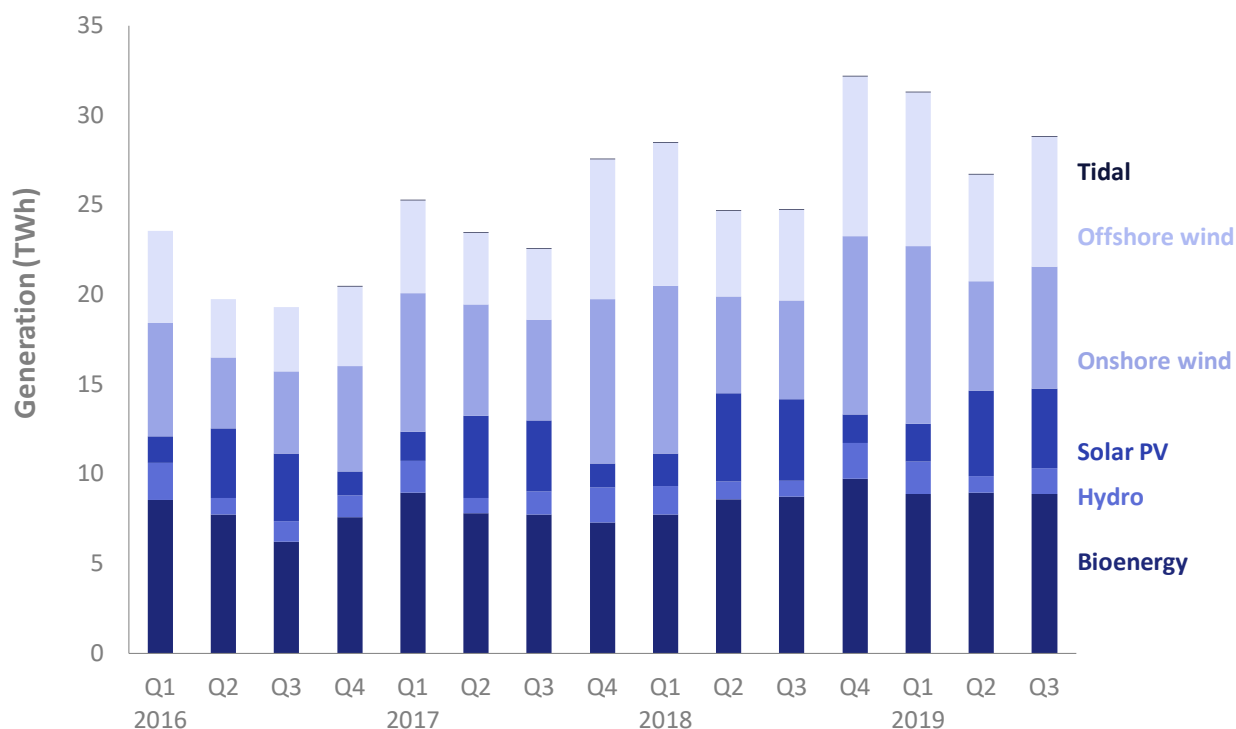


Renewables' share of electricity generation increased from 32.9 per cent in 2018 Q3 to 38.9 per cent in 2019 Q3. This is a new record for quarterly share, exceeding the previous record of 36.8 per cent in 2018 Q4.

Wind remains the principal source of renewable generation with onshore and offshore wind comprising 19.0 per cent of total generation, with bioenergy the other significant component at 12.0 per cent.

Total electricity generated from renewables in 2019 Q3 was 28.8 TWh, an increase of 4.1 TWh (16 per cent) compared to 2018 Q3, but 3.4 TWh lower than the record of 32.2 TWh in 2018 Q4.

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 2019 Q3, generation from bioenergy¹, at 8.9 TWh, was up by 0.2 TWh (1.9 per cent) on this period last year. Bioenergy had the largest share of renewable generation at 30.9 per cent.

In 2019 Q3, electricity generated from wind increased by a third to 14.1 TWh with onshore wind generation increasing by 24 per cent and offshore wind generation increasing by 43 per cent to 7.2 TWh. This follows a significant increase in offshore capacity. Wind speeds in 2019 Q3, at 7.7 knots, were equal to the previous year but below the long term mean for the third quarter of the year which is 8.0 knots - see Energy Trends table 7.2 at:

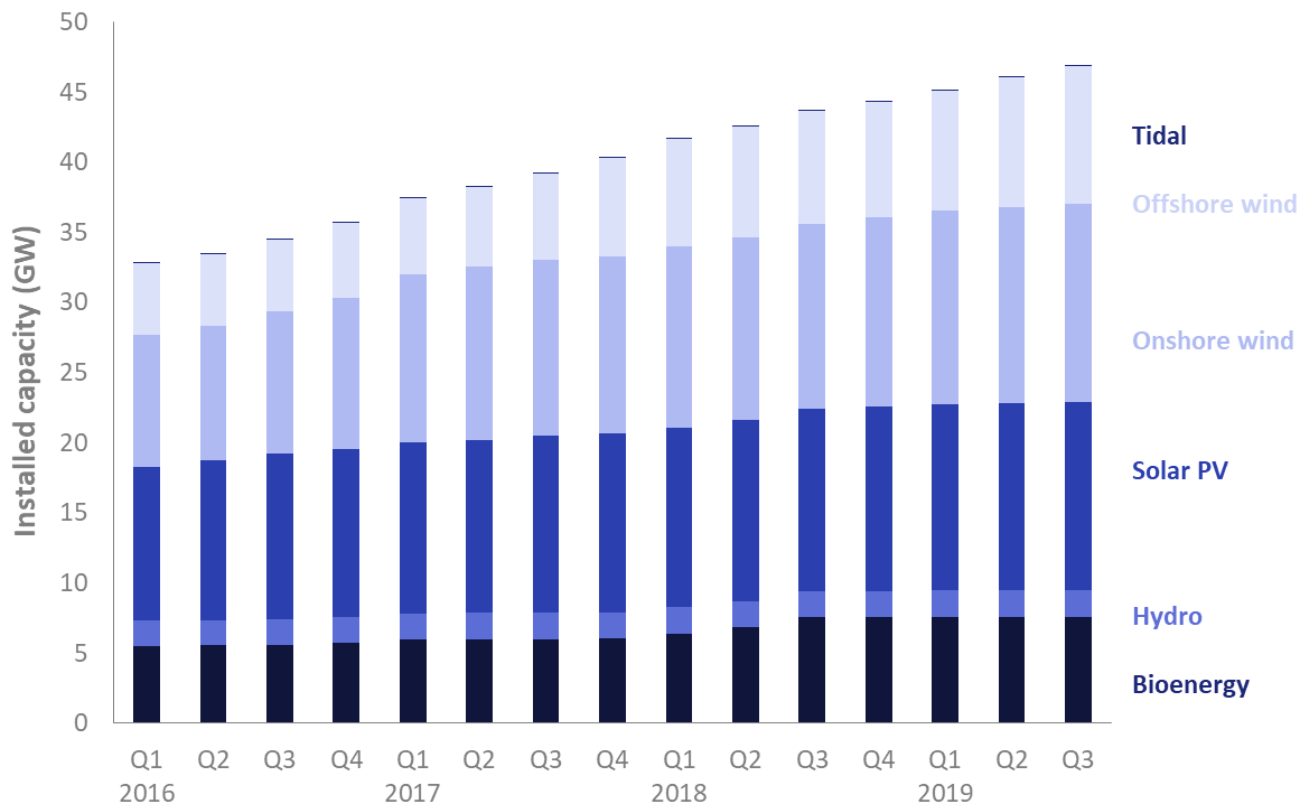
www.gov.uk/government/statistics/energy-trends-section-7-weather.

For the first time offshore wind had a larger share of renewable generation than onshore wind with 25.1 per cent and 23.7 per cent respectively.

Generation from solar photovoltaics decreased by 2.8 per cent (0.1 TWh) to 4.4 TWh, compared to 2018 Q3, reflecting a drop in average sunlight hours of a similar scale (3.4 per cent). In total Solar PV contributed 15.3 per cent of total renewable generation.

Hydro generation rose to 1.4 TWh, increasing by 58 per cent on this quarter in 2018; average rainfall (in the main hydro catchment areas) was well above the long term mean and was the wettest quarter since Q1 of 2016. This quarter also included the wettest August in our time series (from 2001). In addition, rainfall in June of this year was much higher than in June of 2018 which may have added to greater generation in Q3 of this year as there can be a lag between rain falling and hydro generation - see Energy Trends table 7.4 at: www.gov.uk/government/statistics/energy-trends-section-7-weather. Hydro contributed 5.0 per cent of total renewable generation.

¹ Bioenergy consists of: landfill gas, sewage gas, biodegradable municipal solid waste, plant biomass, animal biomass, 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 2019 Q3, the UK's renewable electricity capacity totalled 46.9 GW, an increase of 7.2 per cent (3.2 GW) on that installed at the end of 2018 Q3. However, this is the smallest year on year percentage increase since 2011. Capacity was 1.7 per cent (0.8 GW) above the previous quarter.

At the end of 2019 Q3, onshore wind at 14.1 GW represented 30.2 per cent of all renewable capacity, the highest share of renewable technologies. This was followed by solar PV (28.7 per cent), offshore wind (20.9 per cent) and bioenergy (16.2 per cent).²

Compared with 2018 Q3, the largest change in capacity was for offshore wind which increased by 1.7 GW (21 per cent). Two large offshore wind farms Beatrice (Scotland) and Hornsea (England) were extended to 588 MW and 1211 MW, respectively.

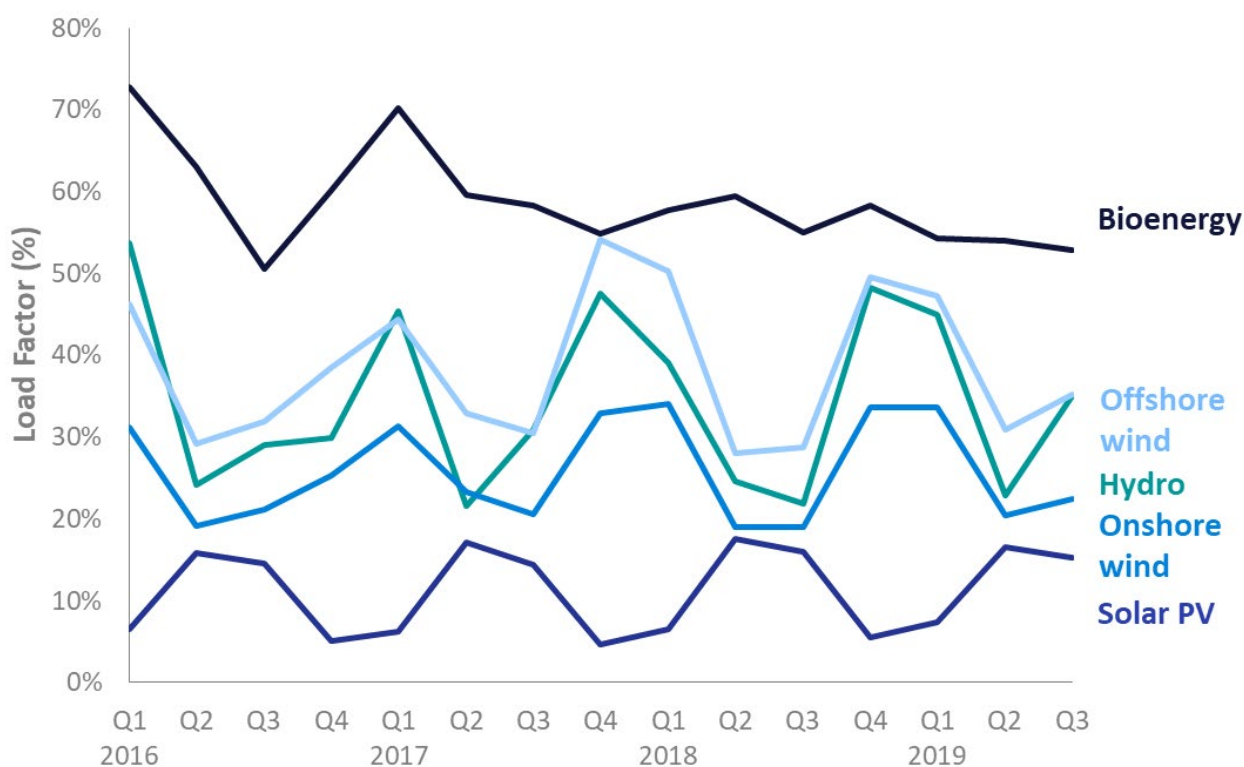
Eleven new onshore wind farms opened in the quarter, equating to 120 MW, the largest of which were Tom Nan Clach (39.1 MW) and Coire Na Cloiche (29.9 MW) both in Scotland. In addition, the capacity for Clocaenog Forest (Wales) also increased to 64 MW.

Bioenergy capacity was at a similar level to one year ago with small additions in plant biomass being largely offset by reductions in anaerobic digestion capacity.

² 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 28.1 per cent, the average load factor for all renewables was 2.1 percentage points higher than the previous year. However, within this, some technologies showed higher load factors and some showed falls.

In 2019 Q3, onshore wind's load factor increased by 3.0 percentage points to 22.0 per cent. Offshore wind's load factor increased at a greater rate, by 5.7 percentage points to 34.4 per cent in 2018 Q3. Load factors are affected both by wind conditions, which can differ between on and offshore sites, as well as the timing that the new capacity comes online³.

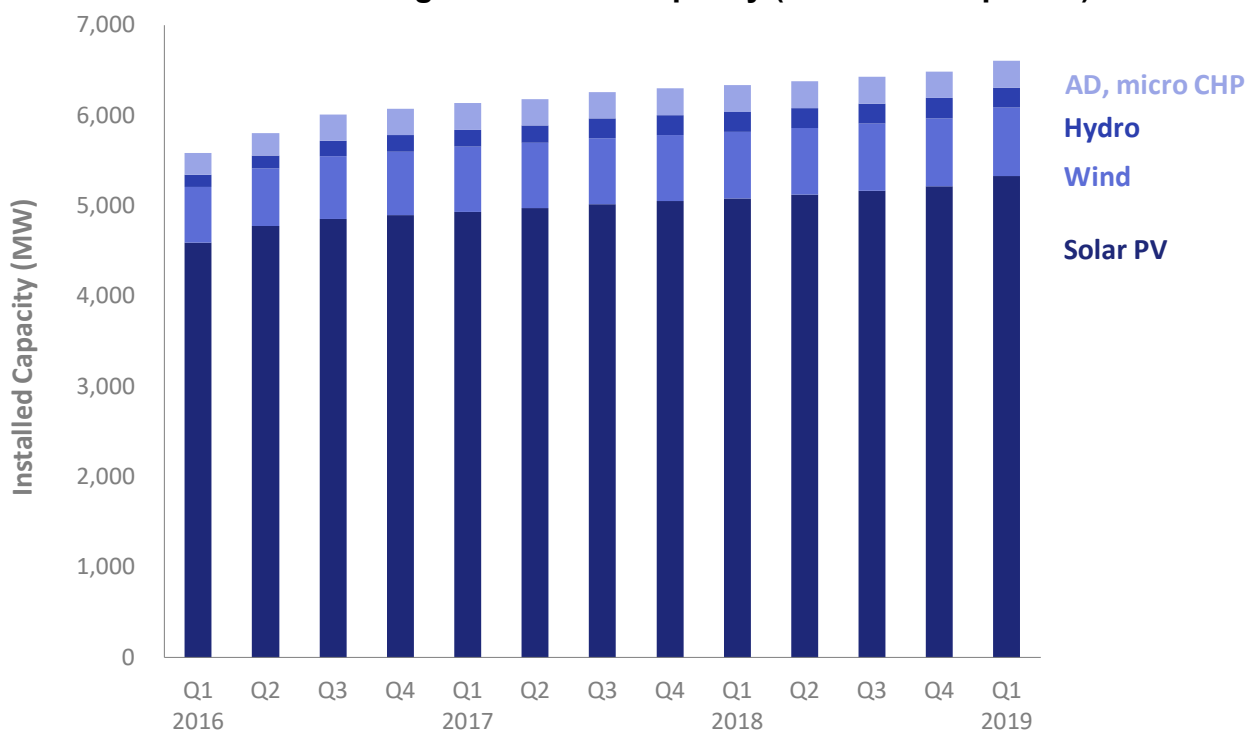
Hydro's load factor in 2019 Q3 increased by 12.6 percentage points, driven by an increase in average rainfall in the quarter of around 40 per cent.

For plant biomass, the load factor in 2019 Q3, at 60.3 per cent, was down by 4.6 percentage points on a year earlier. Generation was affected by an outage of a large plant biomass unit.

³ 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.

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Chart 6.5 Feed in Tariffs: eligible installed capacity (as at end of quarter)



The GB Feed in Tariff (FiT) scheme⁴ closed to new entrants at the end of March 2019. However, the number of installations accredited on FiTs at this point is still subject to revision as Ofgem update the records on its Central FiTs Register.

Revised data shows that there were over 986,000 installed and eligible for the FiT scheme, when the scheme closed at the end of Q1 2019. Renewable installations eligible for FiTs (all except MicroCHP) represented 14 per cent of all renewable installed capacity.

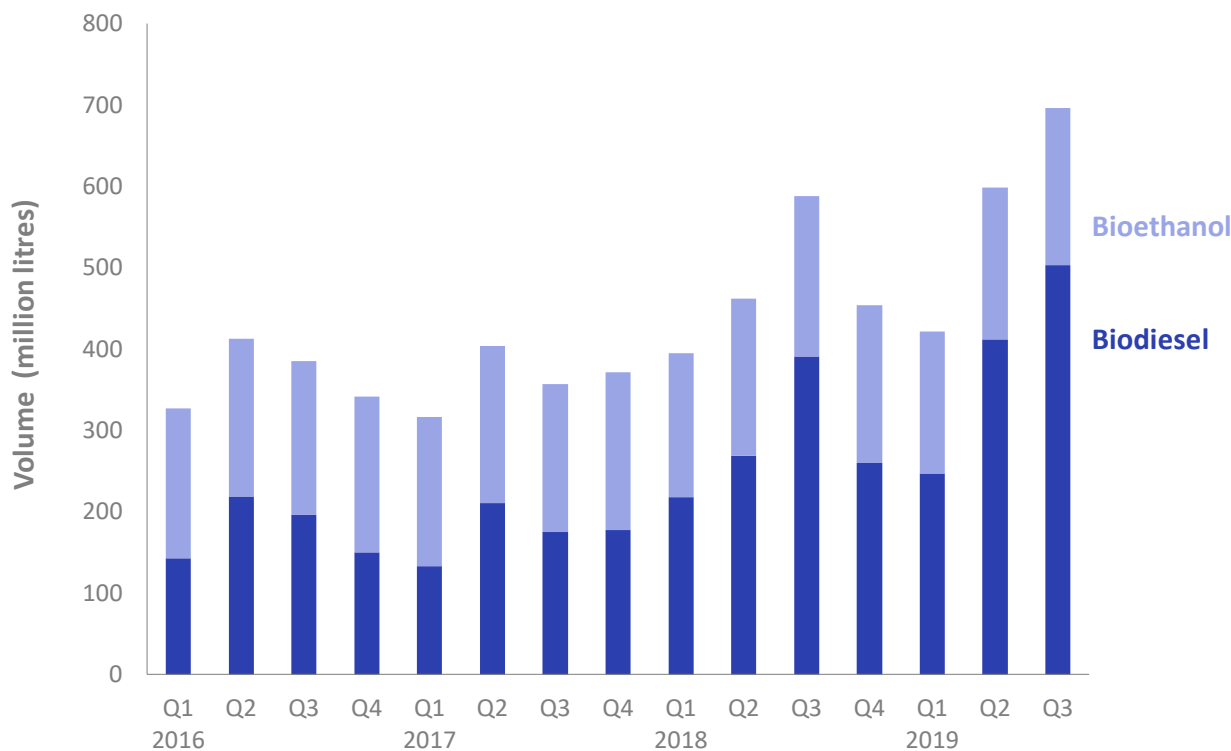
Solar photovoltaics (PVs) represent the majority of both installations and installed capacity on FiTs, with respectively 99 per cent and 81 per cent of the total. Nearly half of FiT-eligible PV installations are sub-4 kW retrofitted schemes, 2,596 MW (49 per cent) in 2019 Q1.

Statistics on 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

⁴ Data are for schemes accredited under the Microgeneration Certification Scheme (MCS) and ROOFIT, which are pre-requisites 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 the third quarter of 2019, an estimated 696 million litres of liquid biofuels were consumed in transport, an increase of 18 per cent on the total of 588 million litres in the third quarter of 2018. This is 16 per cent greater than the previous record set last quarter.

Bioethanol consumption decreased by 2.2 per cent from 197 million litres in the third quarter of 2018 to 193 million litres. Biodiesel consumption increased by 29 per cent, from 391 million litres in 2018 to 504 million litres in 2019. This is 22 per cent more than the previous record set last quarter.

Bioethanol represented 28 per cent of biofuels consumption, with biodiesel accounting for the remaining 72 per cent.

In the third quarter of 2019, bioethanol accounted for 4.7 per cent of motor spirit, no significant change on this quarter last year. Biodiesel represented 6.5 per cent of diesel (DERV) consumption, an increase of 1.5 percentage points on this period last year. Their combined contribution increased by 0.9 percentage points to 5.8 per cent. The most recent two quarters have been the only ones in which more than 5 per cent of road fuel was from biofuel.