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In order to consider the total sum of different types of energy (heat, transport, electricity), the different types need to be added together according to their primary energy equivalents. This represents the heat released by burning fossil fuels, or the heat energy required to generate electricity, or the source energy used for renewables. Data on primary energy production and consumption is sourced from the Department of Energy and Climate Change report [Energy Consumption in the UK \(ECUK\)](#).

A megaton of oil equivalent (mtoe) makes a useful unit for primary energy at a national scale. This is equivalent to 11,630,000,000 kwh or 41,868,000,000 MJ

In 2009, a total of 208.63 mtoe was produced in the UK, covering service, industry and domestic sectors. Of this, the ECUK 2009 report allocates 32.3 mtoe to domestic space heating and 9.4 mtoe to domestic water heating, which gives domestic heating as 20% of the total.

The total energy for transportation is 61.4 mtoe, and an estimated allocation of this is 14.3 mtoe for industry transport, 40.2 mtoe for domestic transportation and 6.72 mtoe for transportation associated with service delivery. Therefore, domestic transportation is about 20% of the total UK energy (208.63 mtoe)

According to real-world measured data within [Sustainable energy without the hot air](#). 25 m² of solar panels on a domestic roof delivered 4380 kwh of electricity in one year. This source also estimates there could be 10 m² of available south facing roof per person in the UK and 60 million people in the UK. This gives a total estimated 9.04 mtoe of electrical energy that could be available per year from solar panels.

The ECUK report indicates that 3 kwh of heat energy at a power station is required to produce 1 kwh of electricity for domestic consumption. Combining these figures together gives an estimated 27.11 mtoe of primary energy that could have been avoided through solar panels, which is 13% of total UK energy (208.63 mtoe).

Note this is different from the 1% quoted within [Sustainable energy without the hot air](#), primarily because this source takes a simpler approach of directly equating heat and work energy, and also includes energy associated with jet flights and imported goods.