**Introduction**

Renewable energy is energy from renewable sources or natural resources, such as solar, wind, bioenergy, and hydroelectric power. These energy sources don’t emit carbon dioxide and other greenhouse gases that contribute to global warming.

The UK could achieve net zero carbon emissions by 2050. The strategy to achieve 100% net zero carbon emissions is to phase out fossil fuel to make electricity and implement a complete transition to an electricity system that is expected to come from renewable energy sources such as solar, wind power, bioenergy, and hydroelectric, which are the different energy sources that makeup the UK electricity supply.

In the UK, the contribution of renewable energy to electricity generation is as follows:

**Wind Power** The total contribution of renewable energy in generation in the UK in 2022 is 45.5 per cent. Wind power accounts for 26.1% of the UK's electricity generation. Onshore and offshore wind contributed 12% and 14%, respectively.

**Solar power** Account for 1.8 per cent of energy contribution in the electricity generation in the UK.

**Bioenergy** It is the process of extracting energy by burning renewable organic material and storing the carbon from going into the atmosphere. The energy extracted from this process accounts for 12.7% of the UK's renewable energy mix.

**Hydropower** on the other hand contribute 2.1 per cent to the renewable energy mix in the UK

The amount of contribution of renewables to statistics in the generation of electricity in the UK makes 2020 the UK's highest year on record compared to previous years. In addition, electricity generated from fossil fuels is significantly reduced to 35% in 2021, at 95-75% compared to previous years, which in turn reduces the carbon intensity to 39 grams of CO2. This fact can be achieved through an increase in the UK's installed renewable energy capacity in 2021. However, this idea has set out a pathway to generating clean and green energy sources.

**Solution to meet the net zero carbon emission by 2050 is as follow:**

* By 2050, nearly 70% of electricity generation will come from solar and wind. With the government investment and plan in place, over the next decade, an increase of 11GW to 50GW offshore wind output and solar capacity could grow from 14GW to 70GW or more combined with other clean sources of energy such as nuclear, hydro and bioenergy.
* There should be immediate improvements in the energy efficiency of buildings, vehicles and appliances, such as the production of more electric vehicles and the installation of heating and cooling systems in new buildings.
* Where bioenergy is not fusible, hydrogen-based fuels, such as those used in ships, aircraft, chemical and steel industries, will play an important role in achieving net-zero carbon emissions.
* Achieving net-zero carbon emissions in the UK will also involve changes in residents' behaviour, such as walking and cycling rather than car travel. This help to reduce emissions in our pathway to net zero carbon emissions in the UK.
* To reach net zero, emissions from homes, transportation, agriculture and industry will need to reduce. In other words, these sectors will have to reduce the amount of carbon they emit into the atmosphere.

**Conclusion**

In conclusion, with the help of technology, the UK can achieve a new zero carbon footprint by 2050. Furthermore, with clear and consistent policy and behavioural changes of residents over the next few decades, the UK will be able to achieve net zero emissions by 2050.