George Anderson – 3rd prize

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S P Energy Networks

With the UN Climate Conference, COP26, coming to the UK in November 2020, what actions would you propose to decarbonise one of the following sectors:

- Industry
- Aviation
- Energy

Global warming is one of the most pressing issues the world faces today and as such, countries from around the world have committed to various pacts and targets to reduce their greenhouse emissions. The UK government has policies in place such as the Climate Change Act as well as the Paris Agreement. To meet these policies, the energy sector will have to undergo rapid decarbonisation, which means a reduction in the emissions per unit of electricity generated. In order to achieve this reduction, there are a number of proposals that the energy sector can comply with.

Firstly, and perhaps the simplest proposal is to switch to lower carbon energy sources and the reduction in the use of fossil fuels. This transition to cleaner energy sources would dramatically decrease production of CO_2, and therefore decrease the amount found in the atmosphere. This proposal has already proven to be one that can work within the UK. In the first three months of this year, according to newspaper reports, renewable energy became the leading source of power in the UK. Renewable energy was responsible for generating 40% of power, compared to the 30.6% provided by fossil fuels. Furthermore, of this 40%, 30.5% was supplied by wind farms alone. While these figures show that the electricity needed throughout the UK can be produced by renewable sources, the percentage of fossil fuels and renewables used may be misleading. On the 25th of March 2020, due to the ongoing crisis regarding COVID-19, the UK was put under strict lockdown rules. The lockdown measures have meant that, for the past few months, offices and other workplaces have been left vacant, and thus haven't relied on electrical power for their computers, air conditioning units and other devices. This has led to a drop in electricity consumption by 13%, that under usual circumstances, we would not have expected to see. As a result of these unprecedented times, we may not be able to rely on these statistics as representative of the routine fossil fuel consumption.

The second proposal is for an increase in sites for carbon capture storage (CCS) to take place. CCS is a simple process in which CO_2 is trapped at its source, and transported to an underground storage location. CCS sites will be vital in decarbonising the energy sector as

this will allow fossil fuels to continue being used while the renewable sources become more reliable for nationwide electricity production. However, there currently aren't many CCS sites with only 21 sites in operation or construction around the world. With the UK planning for 2 sites by 2030, construction of these sites needs to be increased in order to deal with the growing tonnage of carbon released into the air per year. However, while CCS seems like an ideal solution, this may make companies believe that they can continue with their current fossil fuel usage instead of decreasing it and only using the CCS sites while they work on improving the electricity output of their renewable sources.

Finally, the last proposal will address the decarbonisation of the transport network within the energy sector. The energy sector within the UK accounts for 680,000 employees. Of these 680,000 employees, many will drive or take transport to their places of work, and some will work on the energy sectors transport network driving trucks carrying refined gas/oil. Whilst electric vehicles are becoming more common, most of these vehicles will still require carbon based fuels such as petroleum and diesel. To combat this, energy companies could introduce electric car schemes using salary sacrifice, where employees receive an electric car for a monthly fee which includes insurance, service etc. To further encourage this they could increase the number of vehicle charging points at their on-site parking to make it easier for employees to charge their vehicles.

To conclude, the energy sector has already made great strides in decarbonisation by increasing its usage of renewable sources to reduce carbon output. However, if it is to further decarbonise the sector then other solutions need to be followed. This includes the increased construction of carbon capture storage sites, as well as targeting their own employees emissions by introducing eco-friendly schemes.