

Setting a date for net zero carbon

Dr Robin Russell-Jones: Marlow Energy Group (May 2020)

MEG, along with many other environmental groups have discussed whether a specific date for net zero should be chosen. Our conclusion is that a target date should be based on science and not political expediency.

The UK Government has identified 2050, but we feel that this is too far into the future to be useful for our purposes. There is some logic to choosing 2040, as the Intergovernmental Panel on Climate Change (IPCC) predict 1.5C of warming by 2040 using a business as usual scenario, and 1.5C is the preferred limit set by the UN in the Paris Agreement on climate change. However temperatures have started to rise quicker than expected, and a paper in Nature by Xu et al predict that we will reach 1.5C of warming by 2030, with a 10 per cent chance of getting there by 2025 (Ref 2).

There are a number of reasons why temperatures are accelerating.

First atmospheric methane levels have been rising faster than expected: a NASA- based study attributes this mainly to increased releases from the fossil fuel industry; notably gas extraction (Ref 1)

Second a programme of fitting desulphurisation equipment worldwide but particularly in China has resulted in less sulphate aerosols; these normally exert a cooling effect on the atmosphere which is now less apparent.

Third levels of CO₂ in the atmosphere were rising faster than previously: by 2-3 ppm per annum (prior to lockdown) as opposed to 1-2 ppm before 2000.

So far we have witnessed around 1.14 degree C of warming compared with the preindustrial era, but that is an average which incorporates the surface temperatures over land and sea in both the Northern and Southern Hemispheres. Temperatures on land are higher than sea: Northern is higher than Southern; and higher latitudes show the biggest temperature increases of all. Thus whilst the global average is just above 1C, temperatures have increased in Europe by 2C since 1850, and in the Arctic by more than 3C since 1905!

In addition large temperature fluctuations are being observed at high northern latitudes with temperature rises in the Autumn 3C above seasonal averages

For the first time wild-fires are happening in the Arctic circle, and this year ice losses from Greenland are running at four times the predicted rate and have now reached 8500 metric tonnes per second, a level that was not supposed to happen until 2040, according to the IPCC.

These observations all favour of an earlier date for net zero carbon. The Green Party have chosen 2030, and XR have chosen 2025.

We recognise that most of these phenomena are beyond the control of local communities such as Marlow Town Council or Bucks county council. However the objective of any Council should be to implement the measures under their control to achieve net zero carbon by 2030 at the latest, whilst supporting all of the other measures that can be taken regionally, nationally or internationally.. This is something that we absolutely have to do if our grandchildren are to have a world to inherit.

Ref 1. Xu et al Nature. 2018 Dec;564(7734):30-32. doi: 10.1038/d41586-018-07586-5.

Ref 2. Worden J Bloom A Pandey S et al. Reduced biomass burning emissions reconcile conflicting estimates of the post-2006 atmospheric methane budget. Nature Communications 2017; DOI: 10.1038/s41467-017-02246-01)