FACT OR FICTION

Nine things to debunk by **Bob Ward**

It can be difficult to know what to believe and to distinguish fact from fiction about energy and climate change issues, including net zero. Here **Bob Ward** examines and debunks nine of the most inaccurate and misleading claims.

Fiction: The climate isn't changing.

Fact: There is now overwhelming evidence that the climate is changing around the world. In the UK, for instance, average annual temperature has been increasing at a rate of approximately 0.25 Celsius degrees per decade since the 1980s, according to the Met Office, and our 10 warmest years since records began in 1884 have all occurred from 2003 onwards. A warmer atmosphere holds more moisture, so our most recent decade between 2015 and 2024 has been 10 per cent wetter than 1961-1990. Many extreme weather events, including heavy rainfall and heatwaves, are increasing in frequency and intensity.

Fiction: Climate change isn't caused by human activities.

Fact: Scientists have been studying the Earth's climate for more than 150 years, and have concluded that rising levels of carbon dioxide and other greenhouse gases in the world has been driving the unarguable rise in temperature around the world. Most of the increase of more than 50 per cent in the concentration of carbon dioxide that has occurred is due to the burning of fossil fuels, as well as industrial processes, such as cement-making, and deforestation. Every credible scientific organisation in the world, including the UK's Met Office and the Royal Society as well as the United States National Academy of Sciences, accepts that climate change is being driven mainly by human activities.

Fiction: The Sun is responsible for recent warming.

Fact: Scientists are able to monitor the amount of energy arriving on Earth from the Sun, and have found that it has been decreasing since about 1980. Changes in the output of the Sun's energy cannot explain the rise in temperatures and other changes in the climate around the world.

Fiction: We can just adapt to the impacts of climate change.

Fact: Carbon dioxide can remain in the atmosphere for many decades after it is emitted, and concentrations are rising, leading to the rise in global temperatures. Global average temperature has already risen by about 1.4 Celsius degrees since the second half of the 19th century. Concentrations of carbon dioxide, and global temperature, will stop rising when emissions of human activities are effectively reduced to zero, or net zero. If emissions are not stopped, global average temperature will continue to rise and could be 3 Celsius degrees higher by the end of this century compared with its pre-industrial level. The earth has not experienced such temperature since the Pliocene Epoch about 3 million years ago, when the polar ice caps were much smaller and global sea level was 5 to 25 metres higher than today. It is hard to be confident that the world could adapt to the climate change resulting from such a rise in temperature.

Fiction: We cannot cut greenhouse gas emissions without damaging the economy.

Fact: The UK has reduced its emissions by more than 50 per cent since 1990 while our economy had grown by more than 80 per cent. Many of the changes needed to cut emissions are good for the economy. This includes reducing our dependence on fossil fuels, the prices of which can vary greatly due to volatile international markets, as well as increasing energy efficiency so that, for instance, buildings do not require as much heating to remain warm. When the reduction in damage from climate change impacts and other consequences, such as lower air pollution from fossil fuels, are taken into account, achieving net zero emissions will benefit the UK economy overall by the second half of this century.

Fiction: The UK contributes less than 1 per cent of global annual emissions, so it does not matter if we reach net zero.

Fact: It is true that the UK contributes less than 1 per cent of annual global emissions, which means that more than 99 per cent of emissions causing damage to the UK are now emitted by other countries. The UK has a vested interest in persuading others to cut their emissions to net zero to stop increasing harm to the lives and livelihoods in the UK, and this requires us to lead by example.

Fiction: There is no point in the UK cutting its emissions because India and China are doing nothing.

Fact: While annual emissions from China and India, which have far bigger populations than the UK, are bigger than those from the UK, and still rising, they are now investing more than the UK in the transition away from fossil fuels. For instance, by the end of 2024, China's total installed capacity of renewables was about 1.9 billion kilowatts, having added 373 million kilowatts over the previous 12 months. India increased its renewables capacity to more than 209 million kilowatts in 2024. The entire installed capacity of renewables in the UK was about 61 million kilowatts in 2024.

Fiction: Reaching net zero will require an end to farming in the UK.

Fact: Agriculture contributes about 12 per cent of the UK's annual emissions, and is a particularly significant source of methane and nitrous oxide, which are both more powerful greenhouse gases than carbon dioxide. Livestock produce methane during their digestion processes. The farming sector will need to help the UK to reach net zero and many farmers are already taking action to cut their emissions. The UK can and should have sustainable farming sector while reaching net zero emissions in 2050.

Fiction: Solar farms are a threat to farming and food security.

Fact: Along with associated infrastructure, a solar farm requires between 2 to 4 acres for each megawatt of output. A typical solar farm with a capacity of 50 megawatts will consist of around 100,000 to 150,000 panels and cover between 125 to 200 acres. This means that if the Labour Government's target of 50 gigawatts of solar capacity by 2030 were met entirely through solar farms, and no rooftop, it would occupy up to 200,000 acres. The utilised agricultural area of the UK is about 42 million acres and thus 50 gigawatts of solar farm capacity provided through solar farms alone would occupy an area equivalent to less than 0.5 per cent of the country's agricultural land. Clearly this would be no threat to food security.

Bob Ward FGS FRGS FEI is Policy and Communications Director at the Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science.