



Who did that? Stop it now!

It often seems that we as individuals and communities have very little influence on many things, not least what governments and industry do. This seems to apply to climate change and the impact it is having on lives and the environment around the world. Yet, it is increasingly possible to attribute such changes to particular actions and even industries. At one time it was impossible to be sure that certain weather conditions were caused by climate change but now it is possible to show that the increase in global average temperature is driving local storms, drought, and other extremes of weather.

Many, possibly almost all of the things that we do on a daily basis can influence climate change, usually negatively. It is hard for everyone to give up using petrol and diesel cars, burning natural gas and relying on plastics derived from oil. And there is a fear that if we embrace the idea of 'net zero' society will be poorer, jobs will be lost and the standard of living will fall. Some politicians in the UK and elsewhere use this as an argument for not changing our trajectory. In fact the reverse is true – if we *don't* change, things will get worse, much worse. Crops will fail (look what's happening this spring with the lack of rain), communities will suffer catastrophic flooding, costs will rise (especially taxes and insurance to pay for protection) and societal structures will collapse. On the other hand, if we take action against climate change, we open up a wealth of opportunity with new technologies, more jobs and lower costs, better, healthier living.

The World Resources Institute (wri.org) is working to help the world move towards a low-carbon economy that works for all countries. They show that individuals can themselves be carbon negative. In the UK, the average carbon footprint per person ranges from 6.28 tonnes of greenhouse gases per year up to about 12.7 tonnes depending on how the calculation is done. The WRI estimates that the footprint could be brought right down by changing what we do in three areas. The first one is transport: we should stop using petrol and diesel cars and switch to electric (EVs), public transport, cycle or walk. Stopping using a car altogether can cut emissions by 30 %. We should fly less, which would cut personal emissions by 18 %. The second area is how we run our homes: we must insulate better install solar panels and a heat pump. That would save around 16 %. Cutting down or cutting out meat would save another 13 %. We could also reduce our footprint further by recycling more, composting, cutting food waste and lowering our use of electricity. If we each did all of these things we would cut our personal footprint to a minimum or even to zero.

I read about a lot of this in a recent article by Graham Lawton in *New Scientist*, who also said that oil giant BP devised carbon footprint to divert attention from the effects of the oil industry on climate change. In many respects, the oil and gas companies have been acting like the tobacco companies in the 1950s and 1960s when they denied the link between smoking and cancer, employing strategies to cast doubt on solid science. Many large, multinational companies want 'business as usual' and rather than face facts, they lobby

governments against taking decisive action to mitigate and adapt to climate change. However, there is no denying the science now. The Intergovernmental Panel of Climate Change (IPCC) has stated that “human-induced climate change is already affecting many weather and climate extremes in every region across the globe”. Not only does the science show that the increasing levels of greenhouse gases are causing global warming, and hence climate change, there is clear evidence these emissions can be attributed to individual companies and the fossil fuel industry particularly.

One of the largest emitters of CO₂ is the cement manufacturing industry contributing 27 % of all industry emissions (Figure 1) Cement is produced by heating limestone to high temperatures, which drives off the CO₂. The resulting clinker is ground with gypsum to make the cement. The cement industry produces 1.6 – 1.8 billion tonnes of CO₂ per year and this is increasing. That is about 1.6 – 2.8 % of total global emissions. The steel making industry is another major producer of greenhouse gas. Most of this industry still uses coke made from coal so burning fossil fuel. It produces about the same amount of CO₂ as the cement industry. The next highest emitter is the petro-chemical industry at about 15 %, followed by aluminium smelting (3 %), and then the paper, wood and pulp industries (2 %). The rest of industry, which includes pharmaceuticals, machinery and electronics, glass production, textiles and clothing, food and beverages produce another total of 27 %.

It is hard for any government to force these companies to make significant changes to their processes. A few are making some progress. For example, there is research into using hydrogen as the fuel for steel production with some demonstration projects already running. Since the IPCC has shown that emissions from industry are increasing CO₂ levels in the atmosphere, it is possible for individuals and campaigning organisations to sue companies who refuse to reduce their carbon footprint. Friends of the Earth successfully sued Royal Dutch Shell and the judge ordered the company to reduce its CO₂ emissions. There is also an on-going case in Germany where a Peruvian farmer is suing German energy firm RWE over its emissions claiming that these are increasing the flood risk on his farm. German courts have ruled that this case can go ahead but as yet it has not been heard. Whether or not the case is successful, it has set a precedent that companies can be sued based on evidence.

If governments won't push industry to change that it is likely we will see more organisations and individuals taking legal action against industries that emit huge amounts of CO₂. Industry is now vulnerable because the evidence of the effects of greenhouse gases is clear and solid. They will try to obfuscate, to divert attention, discredit plaintiffs or even counter sue but gradually they will be forced to act.

Richard Marshall

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