



EDITORIALS

Global warming must stay below 1.5°C

We are facing a global emergency and should organise accordingly

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Twelve years to act or we will face catastrophic climate change. This is the core message of the report from the Intergovernmental Panel on Climate Change (IPCC) released on 8 October.¹

The basis for this message is twofold. Firstly, we have already warmed the planet by 1°C above pre-industrial levels, with serious negative effects on people, ecosystems, and livelihoods worldwide. Secondly, unless we reduce greenhouse gas emissions decisively over the next 12 years, we will extend warming to beyond 1.5°C: the limit in the 2015 Paris agreement signed by 195 countries. For many ecosystems and populations, even this will fail to prevent disaster. However, the IPCC report describes why any failure to meet this target would have catastrophic effects.

The science of anthropogenic global warming and its effects have been previously explained in *The BMJ*.^{2,3} The IPCC's new synthesis of more than 6000 recent scientific papers highlights once again the many dangers posed by global warming, including extreme weather events, rising sea levels, destruction of coral reefs, loss of biodiversity, ocean acidification and deoxygenation, and extreme heat. Crucially, climate change is a "threat multiplier" that exacerbates and intensifies poverty, food insecurity, water stress, forced migration, and conflict between states and communities.

The report contrasts the effects of 1.5°C and 2°C warming. It predicts a difference of 10 cm in sea level and 10.4 million displaced people by 2100, and a difference of 190 million premature deaths and hundreds of millions of people forced into poverty by 2050. The IPCC also discusses what is required to limit warming to 1.5°C. Its conclusion is stark: we must reduce CO₂ emissions by at least 45% in the next 12 years compared with 2010 levels and achieve net zero CO₂ production by 2050. This is a tall order, requiring action on multiple fronts at all levels of society—both local and global.

Furthermore, despite the clear note of alarm in this report, it should be viewed as conservative and the result of political compromise. It does not acknowledge the possibility that plausible feedback loops may result in unpreventable, runaway

global warming; nor does it mention the political obstacles caused by rising levels of anti-global nationalism and anti-science populism or the increasing prominence of climate change denialists in some governments, including the US and Australia. Only this month, President Trump questioned the scientific consensus on anthropogenic global warming and accused scientists of having a political agenda.⁴

The underlying message remains clear and consistent with previous reports. We need to decarbonise our energy system; transform our transport, agricultural, and food systems; and change how we feed, heat, and transport ourselves. We need major programmes of reforestation and technologies to remove CO₂ from the atmosphere. If we are serious about social justice, we must recognise that the world's poorest populations who are at greatest risk of climate change have contributed least to the problem. The 10% of the global population responsible for 50% of global carbon emissions bears a particular responsibility.⁵

Despite past warnings and the euphoria around the 2015 Paris agreement, global energy related carbon emissions rose to an all-time high in 2017, after three years of being flat.⁶ Meanwhile, some industrialised countries, including England, are encouraging more exploration and extraction of fossil fuels instead of committing to renewable energy and energy conservation.⁷

So, what can be done in the face of powerful lobby groups with a vested interest in oil and gas, politicians driven by short term electoral cycles and political expediency, and populations habituated to the remarkable conveniences and benefits of fossil fuel?

Although government action is crucial, so is civic action. In particular, doctors and other health professionals have a strong record of steering society to make difficult, unpopular, and at times expensive choices for the sake of public health and safety. This has historically included improved sanitation, housing, water treatment, and air quality and, in the 1980s, reducing the risks of nuclear war.

But we do not have time to effect change through the usual processes of education, research, or gentle lobbying. We need

to organise as we would in emergencies. We must also step out of our comfort zones—individually and collectively—to effect social, political, and economic change. We must enlist our most politically and culturally influential figures and speak to the public, the government, and the media. We can lead by example by ensuring our professional organisations divest immediately from fossil fuels.⁸ And through our work, we should mobilise patients and communities to demand and implement change. *Global Warming of 1.5°C* is a clear call to action. What are you going to do?

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