National Emergency Briefing

Transcript: Climate

Professor Kevin Anderson - Universities of Manchester and Uppsala

From an expert talk given at the National Emergency Briefing on 27th Nov 2025 at Westminster Central Hall. Full talks can be found at https://www.nebriefing.org/.

I want to start by framing the problem as I see it - and it's very much that the CO_2 concentrations in the environment and the atmosphere are rising at unprecedented rates. If we measure the concentration of carbon dioxide in parts per million, and we look at that across the last, say, 800,000 years, and compare that with today, we see a plot that looks like this.

Now that has a variation in about 100 parts per million going up and down, basically related to the ice ages. If we then focus in on the last 10,000 years, and that's the time when human societies have really flourished, what we see then is a pathway that is much more stable in carbon dioxide, that the variation has only been about 20 parts per million in that period of time.

And so we've had a very stable temperature and a very stable climate during the flourishing of our societies. If we then look at the end of this... where we began to burn fossil fuels in about 1850-ish, we were at about 280 parts per million by volume at that particular time. And if we look at where we are today, we're now at 424 parts per million almost overnight.

We've gone to these ridiculously high levels, and it's rising rapidly every single year. We've driven temperatures up approaching 1.5°C warmer than at the time of the Industrial Revolution.

If we don't stop burning fossil fuels, the temperatures will just keep rising. This idea that we cut fossil fuel use doesn't help. We have to eliminate fossil fuels, or the temperatures will just keep going up.

The way we've set it up at the moment, the way the science is going at the moment, we're going to see a rise of about 2°C or so by the middle of this century. It's very hard to imagine that it would be any less than that. But there's now a small but very real risk that we could hit 4°C by the end of the century. Now, the prospects of 3° or 4°C of warming are absolutely dire.

I mean, we cannot risk that at all. It is an extreme and unstable climate, far beyond any safe zone that has nurtured our civilization. And we're going to be seeing unprecedented societal and ecological collapse at these sorts of levels. We're going to see escalating, geopolitical instability and rising military tensions, and there will be no real economy to talk about.

There's no reduction in GDP. We'll be looking at systemic collapse.

My colleagues are going to touch on some of these points in more detail, later on.

So what have we in the UK — and indeed most of the world — agreed to do about this?

Well, in 1992, at the Rio Earth Summit, we came together and we signed the United Nations Framework Convention on Climate Change. And that has two key articles - or objectives. The first of these can be summarised as cutting emissions so as to avoid dangerous levels of climate change. And the second of these embeds the concept of international equity, whereby we're going to cut emissions fairly - with developed countries such as the UK taking a lead on this.

It took us 23 years after that agreement before we finally defined what do we mean by 'dangerous'. And the Paris Agreement defined this as staying well below 2°C of warming, and ideally pursuing nothing more than 1.5°C of warming.

So these are the sort of commitments that we have made in the UK, and indeed virtually every other country in the world. We're going to do that guided by the science and on the basis of international equity. Again, we sign up for this every single year.

So with that as a backdrop, we can then start to say, well, what are the pathways of reducing our emissions that are aligned with that sort of future? Science tells us about the scale and the timeline of cutting our emissions. Remember, these are political commitments that we've made. The science tells us it is the build up of carbon dioxide in the atmosphere that gives us the rise in temperature.

And it also gives us the global carbon budget - the total amount of carbon dioxide that we can emit if we're going to stay within our Paris commitments.

So the IPCC, the Intergovernmental Panel on Climate Change, then quantified these carbon budgets for us to give us a really useful policy tool here. Now, I've updated the IPCC's last report up to 2020 6th January 2026 - and with the improvements we've seen in the science

since then - and if you play out the numbers here, we see that we can emit somewhere between 130 and 530 billion tonnes of carbon dioxide for 1.5 and two degrees centigrade.

That means very little to most of us, I would think. That's 3 to 13 years of current emissions - 3 to 13 years. Remember, emissions are rising every single year. If we were to reduce emissions from January the 1st at a set rate every year for 1.5°C, now globally we'd have to cut emissions by 20% every single year. And even for two degrees centigrade, it's 8% every year. That's three percentage points higher reduction than occurred at the peak of the Covid epidemic.

That's for two degrees centigrade. If we drew straight lines to zero emissions from January the 1st, there would have to be zero emissions from 1.5 by about 2030 and zero emissions globally by about 2050 - as long as we follow that straight line down. At the moment, every single month, we're using up the budget for 1.5°C, about 2.7% of that budget - every single month. And for two degrees centigrade, it's still 0.7% every month.

I've greyed out the 1.5°C here with a very heavy heart. I don't know any scientist, if you take them away from the microphone, who thinks staying below 1.5°C is any longer a viable target. That is a very depressing statement to have to make.

So I also want to add a cautionary note, and this will be touched on, I think later. There's emerging evidence that we're warming faster than we have been previously. There's what we call higher climate sensitivity. The CO2 putting atmosphere is not being absorbed at quite the same level as it was previously by the biosphere.

There's also, as we're cleaning up the air and taking out the air pollution, we're removing the cooling that the aerosols have provided us as well. So this only escalates the urgent need for emergency level policies. Unfortunately, in this, there is no good news.

We also committed in Paris to reduce our emissions on the basis of equity. And that means we take the global carbon budget and we divide that using the language of the Paris Agreement between developed and developing countries. We can then ask the question of developed countries' carbon budgets, how much we can emit, basically how many tonnes of fossil fuels we can burn.

What does the UK get? Building on some peer-reviewed work from a few years ago and updating that to January this year, then we can say for the UK we can emit somewhere around about 2 to 2.5 billion tonnes of carbon dioxide. Again, that means very little to many of us. That's seven years of current UK emissions.

Remember, this is for two degrees centigrade, not for 1.5°C - for 2°C. If we were to reduce emissions from January 1st for the UK, we'd need reductions of about 13% every single year, if we just stay within the 2°C carbon budget. This is the same pretty much for all industrialised countries. If we were to draw a straight line to zero — remember, that means zero fossil fuel production, zero fossil fuels — we're talking about 2039.

This is a very different agenda from what you normally get to see. Just do the maths. Just do the science.

Yet against this backdrop, what we hear is this sort of rhetorical stuff that "isn't the UK showing leadership". We see this for every country. I work in Sweden - they say the same thing. "The UK is the first nation to have cut its emissions by 50% since 1990".

However, that excludes international aviation and shipping and our imports and exports. If you include those, which of course the climate includes, then the reduction's about 20% since 1990, or 0.6% every year on average. There is no climate leadership anywhere within any of the so-called climate progressive countries in the global north — EU, France, Sweden, Denmark, the UK. Unpick it and you get a very uncomfortable narrative.

Also, inequality is deeply embedded in the UK targets. If we look at the UK Government and the Committee on Climate Change, they claim that the net zero 2050 target is the UK's fair role on 1.5°C of warming. If you look at the carbon budget underpinning that, it means that the UK would get three times its equal per capita share.

How can that possibly be fair? It's much more colonial. Even for two degrees centigrade, what we're planning for in the UK is not in any way fair and in line with our Paris commitments.

Against this fairly depressing backdrop, I want to say, well, what would... what would mitigation... what would reducing emissions have to look like? And this is my main focus of work, really.

Well, firstly technology —and I'm pleased about this as an engineer —technology is absolutely a prerequisite of delivering on Paris. But after choosing to fail on climate change by our leaders for the last 30 years, it is now far from sufficient. We also need — and it's going to be very difficult for many of us here — profound shifts in our social norms.

So on technology, I want to distinguish between two particular types of technologies here - what I've called delay technologies.. these are designed to

avoid effective legislation and basically maintain a thriving oil and gas industry. And timely technologies, ones that actually work. We know they work, we've put them in place. They're out there running today.

So delay technologies - I'll just whip through these three here.

New gas fired power stations with carbon capture and storage, Blue hydrogen plants made out of gas with carbon capture storage, and bioenergy with carbon capture and storage. All of these rely on the huge deployment - and successful deployment - of carbon capture and storage technologies, which sound wonderful. This technology has been promised by the oil and gas industry and by many of its shills for the last 30 years.

Yet in 2024, according to the CCS Institute, it managed to store less than 0.03% of all fossil fuel emissions, after 30 years of promises.

All of these technologies have major emissions issues in terms of their supply chain. All of them are going to be very expensive. And who's going to fund them? Not the oil and gas industry, the taxpayer, the bill payer. They are all false solutions designed to avoid meaningful legislation about cutting back on fossil fuel production and use. And they maintain a high cost, high profit - because that's what this industry is - oil and gas sector.

Timely technologies: I would say these need to be deployed at a Marshall-style rate, like the reconstruction of Europe after the Second World War. And they're all the things we're familiar with. Nothing sexy here.

Retrofitting our homes, making sure all our new houses - new homes that we built are zero carbon. The rapid rollout of public transport, EV charging for the rural environments, much less so for cities, and rapid shift to zero carbon electricity and a major program of electrification.

Remember, electricity in the UK is only 18% of our energy consumption.
82% is not electricity, it's basically just direct fossil fuels. So when people say we're doing well in the UK, that's only on electricity, which is only 18% of our energy. We also need deep and rapid cuts in the use of aviation, a very large sector in the UK. And there's nothing you can do technically about that sector to reduce emissions in a 1.5° to 2°C timeline.

Shipping - there are some things like slow steaming and there are some technologies out there as well.

But all this takes time. And in the interim we have to have profound change in the social norms. This is difficult for many of us here, I suspect, because we need to focus on the high income, high emitting people. And I think with a few exceptions, no doubt that's us.

Why is fairness key? Well, globally, collectively, the top 1% of global emitters have lifestyles that give rise to twice the level of the bottom half of the world's population. It's quite hard to actually grasp that - what that differential is. But you come to the UK, the lifestyles of the high income households require nearly five times more energy than the lowest income households. And I'm guessing that most of us, or many of us here live in those households who aspire to.

So on responsibility, let's be absolutely clear. We're not all in this together. Most UK households are locked into structural emissions. The rubbish house, the inefficient car, the poor heating system, the old fridge. They can't afford to buy their way out of the emissions. And anyway, they're not responsible for most of the emissions. We are. The discretionary emissions that are locked into the lives of us high income, high emitters. And this is where we need urgent legislation to drive down energy use within that particular group.

And I would argue that the second prerequisite of Paris is that fair and deep reductions in energy use are that second prerequisite. So it's technology and it's driving down demand. This would deliver immediate and substantial cuts in emissions. It buys us critical time to put in place the zero carbon technologies that are available.

And it releases - very importantly - the labour, the materials, the finance and even the political capital we need to drive the clean revolution. Responding to climate change is win, win, win for the majority.

We need to have comfortable, affordable, low carbon homes, high quality public transport... Putting these in place will provide huge amounts of secure and valued employment, better air quality, better health, therefore better educational attainment for our children in schools, a functioning infrastructure - and I would argue, an improved sense of civic well-being.

But, and this is the rub for those of us here… to do that means we've got to move the resources and labour that furnished the private luxury of a relative few of us - people like me and many of us here - to the public well-being for all, to a future of private sufficiency and public luxury.

So what does all this mean for policy makers? Well, actually, I think the IPCC, in the Working Group II, in their response to Frequently Asked Questions, answer this really quite succinctly.

“Targeting a climate resilient sustainable world involves fundamental changes in how society functions, including changes to underlying values, worldviews, ideologies, social structures, political economic systems, and power relationships”.

That captures really, I think, the essence of the scale of change that we require. It is my view that it is now too late for non-radical futures. I see no way out of revolutionary rates of change in how we, particularly groups of us, live today.

The choice is between a deep, rapid and fair decarbonization of modern society — an organised-ish technical and social revolution — or ongoing rhetoric and delay as temperatures exceed dangerous for all, and they will have revolutionary scales of change that will be both chaotic and violent. I'm going to close with a quote from Robert Unger, Brazilian politician and philosopher:

“At every level, the greatest obstacle to transforming the world is that we lack the clarity and imagination to conceive that it will be different”.

So thanks so much for listening.