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Giving Up On Two Degrees

Posted May 1, 2007

Have we already abandoned our attempts to prevent dangerous climate change?

By George Monbiot. Published in the Guardian, 1st May 2007

The rich nations seeking to cut climate change have this in common: they lie. You won't find this statement in the draft of the new report by the Intergovernmental Panel on Climate Change, which was leaked to the Guardian last week. But as soon as you understand the numbers, the words form before your eyes. The governments making genuine efforts to tackle global warming are using figures they know to be false.

The British government, the European Union and the United Nations all claim to be trying to prevent "dangerous" climate change. Any level of climate change is dangerous for someone, but there is a broad consensus about what this word means: two degrees of warming above pre-industrial levels. It is dangerous because of its direct impacts on people and places (it could, for example, trigger the irreversible melting of the Greenland ice sheet(1) and the collapse of the Amazon rainforest(2)) and because it is likely to stimulate further warming, as it encourages the world's natural systems to start releasing greenhouse gases.

The aim of preventing more than 2°C of warming has been adopted overtly by the UN(3) and the European Union(4) and implicitly by the British, German and Swedish governments. All of them say they are hoping to confine the concentrations of greenhouse gases in the atmosphere to a level which would prevent 2°C from being reached. And all of them know that they have set the wrong targets, based on outdated science. Fearful of the political implications, they have failed to adjust to the levels the new research demands.

This isn't easy to follow, but please bear with me, as you cannot understand the world's most important issue without grappling with some numbers. The average global temperature is affected by the concentration of greenhouse gases in the atmosphere. This concentration is usually expressed as "carbon dioxide equivalent". It is not an exact science - you cannot say that a certain concentration of gases will lead to a precise increase in temperature - but scientists discuss the relationship in terms of probability. A paper published last year by the climatologist Malte Meinshausen suggests that if greenhouse gases reach a concentration of 550 parts per million, carbon dioxide equivalent, there is a 63-99% chance (with an average value of 82%) that global warming will exceed two degrees(5). At 475 parts the average likelihood is 64%. Only if concentrations are stabilised at 400 parts or below is there a low chance (an average of 28%) that temperatures will rise by over two degrees.

The IPCC's draft report contains similar figures. A concentration of 510 parts per million (ppm) gives us a 33% chance of preventing more than two degrees of warming(6). A concentration of 590ppm gives us a 10% chance(7). You begin to understand the scale of the challenge when you discover that the current level of greenhouse gases in the atmosphere (using the IPCC's formula) is 459ppm(8). We have already exceeded the safe level. To give ourselves a high chance of preventing dangerous climate change, we will need a programme so drastic that greenhouse gases in the atmosphere end up below the current concentrations. The sooner this happens, the greater the chance of preventing two degrees of warming.

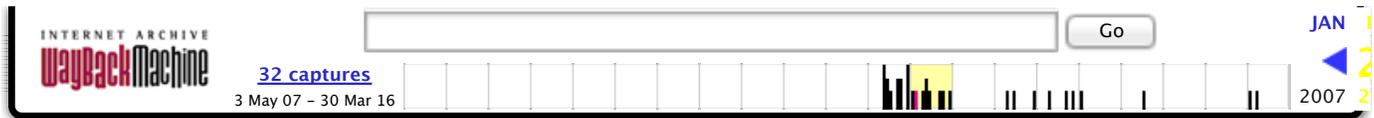
But no government has set itself this task. The European Union and the Swedish government have established the world's most stringent target. It is 550ppm, which gives us a near certainty of an extra 2°C. The British government makes use of a clever conjuring trick. Its target is also "550 parts per million", but 550 parts of carbon dioxide alone. When you include the other greenhouse gases, this translates into 666ppm carbon dioxide equivalent (a fitting figure)(9). According to the Stern Report, at 650ppm there is a 60 - 95% chance of 3°C of warming(10). The government's target, in other words, commits us to a very dangerous level of climate change.

The British government has been aware that it has set the wrong target for at least four years. In 2003 the environment department found that "with an atmospheric CO2 stabilisation concentration of 550ppm, temperatures are expected to rise by between 2°C and 5°C"(11). In March last year it admitted that "a limit closer to 450ppm or even lower, might be more appropriate to meet a 2°C stabilisation limit."(12) Yet the target has not changed. Last October I challenged the environment secretary, David Miliband, over this issue on Channel 4 News. He responded as if he had never come across it before.

The European Union is also aware that it is using the wrong figures. In 2005 it found that "to have a reasonable chance to limit global warming to no more than 2°C, stabilisation of concentrations well below 550 ppm CO2 equivalent may be needed."(13) But its target hasn't changed either.

Embarrassingly for the government and for left-wingers like me, the only large political entity which seems able to confront this is the British Conservative Party. In a paper published a fortnight ago, it called for an atmospheric stabilisation target of 400-450ppm carbon dioxide equivalent(14). Will this become policy? Does Cameron have the guts to do what his advisers say he should?

In my book Heat I estimate that to avoid two degrees of warming we require a global emissions cut of 60% per capita between now and 2030(15). This translates into an 87% cut in the United Kingdom. This is a much stiffer target than the British government's - which requires a 60% cut in the UK's emissions by 2050. But my figure now appears to have been an underestimate. A recent paper in the journal Climatic Change emphasises that the



like us. The UK's emissions per capita would need to fall by 91%.

But our governments appear quietly to have abandoned their aim of preventing dangerous climate change. If so, they condemn millions to death. What the IPCC report shows is that we have to stop treating climate change as an urgent issue. We have to start treating it as an international emergency.

We must open immediate negotiations with China, which threatens to become the world's biggest emitter of greenhouse gases by November this year(17), partly because it manufactures many of the products we use. We must work out how much it would cost to decarbonise its growing economy, and help to pay. We need a major diplomatic offensive - far more pressing than it has been so far - to persuade the United States to do what it did in 1941, and turn the economy around on a dime. But above all we need to show that we remain serious about fighting climate change, by setting the targets the science demands.

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6. The IPCC uses the words "Unlikely" and "Very Unlikely". These have precise definitions in the IPCC process: a 33% likelihood and a 10% likelihood. For the full set of definitions, see Intergovernmental Panel on Climate Change, February 2007, *ibid*.
7. Intergovernmental Panel on Climate Change, 2007. Mitigation of Climate Change. Unpublished draft report, version 3.0. Table SPM 1.
8. The figures the IPCC uses in Table SPM 1 suggest that the other greenhouse gases account for 21% of the climate change due to carbon dioxide alone. This is a high estimate - other authors (eg Sir Nicholas Stern, the UK Department for Environment), suggest 10 or 15%.
9. Again, I use the IPCC's formula here. Other estimates would produce a slightly lower figure.
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