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Two degrees of separation

How the climate bill targets fail the poor



**World
Development
Movement**

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About World Development Movement

WDM campaigns to tackle the root causes of poverty. With our partners around the world, we win positive change for the world's poorest people. We believe that charity is not enough. We lobby governments and companies to change policies that keep people poor. WDM is a democratic membership organisation of individuals and local groups. Please contact WDM for membership information.

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World Development Movement, 66 Offley Road, London, SW9 0LS, UK
+44 (0)20 7820 4900 www.wdm.org.uk

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1. Introduction

The past 12 months have seen a significant change in political and public understanding of climate change. The science itself has also evolved with the publication in spring 2007 of the latest research compilation by the Intergovernmental Panel on Climate Change (IPCC) – the world's foremost scientific body on the issue.

The response from the UK government – to set in motion new legislation defining emissions reduction targets – has been widely welcomed. However, the details of the bill, including the targets themselves, have been criticised for not reflecting the latest climate change science.

The government is committed to avoiding what has become known as 'dangerous climate change'; in other words, keeping the average global temperature increase to below two degrees centigrade on pre-industrial levels.¹ Yet the proposed emissions reduction target (60 per cent by 2050) is more likely to result in a 4°C; a two degree gap that, while not sounding like much, could have disastrous consequences for millions of people in the developing world.

Based on the latest science, this briefing presents a picture of what the government's proposed targets are likely to mean in practice for people at the sharp end of global warming.

2. 60 per cent = 4°C

In spring 2007, the IPCC produced its latest compilation of scientific evidence on climate change. The conclusion, in terms of mitigating climate change, was that keeping the average global temperature increase between 2.0°C to 2.4°C requires stabilisation at 445 to 490 parts per million of carbon dioxide (CO₂) equivalent in the atmosphere. This in turn requires global yearly emissions to be reduced by between 50 to 85 per cent by 2050, on current levels.² Because the UK emits more than double the worldwide average CO₂ per person, the UK has to reduce emissions by between 80 and 90 per cent by 2050, on current levels. This translates into a 40 per cent cut by 2020.

Yet the proposed targets in the climate bill are a 60 per cent cut by 2050 and 26 to 32 per cent by 2020. This begs the question, if we need to reduce emissions by at least 80 per cent to have a reasonable chance of limiting the temperature increase to 2°C, what kind of world would result from a 60 per cent cut?

Analysis by scientists at the Tyndall Centre for Climate Change Research shows that, if other countries replicated the same degree of effort implied by the climate bill targets, atmospheric concentrations of CO₂ would end up well beyond the 'safer' levels described by the IPCC. The Tyndall scientists conclude: "The targets are more likely to contribute to a world 4°C or 5°C warmer than pre-industrial levels, than they are to constrain warming to no more than 2°C."³

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Instead of aiming to avoid dangerous climate change - a 2°C rise - the targets in the climate bill are setting us on a course for a probable average temperature increase of 4°C. This difference may at first seem trivial but a 'four degree world' spells potential disaster, particularly for poor people in the developing world.

3. 4°C : what does it mean for the developing world?

There is sometimes a danger when talking about climate change of overwhelming the reader with apocalyptic visions of the future, creating a feeling of powerlessness. While WDM has no intention of dodging the reality of the situation in order to make for a more comfortable read, there are two things worth remembering: First, the projections of potential impacts are based on the best scientific analysis available; they are not an attempt to exaggerate or scaremonger. Second, the likely impacts of a 4°C rise presented in this briefing are all preventable. We do have the power to change course.

3.1 IPCC projections

The IPCC has produced a series of scenarios in order to provide some guidance on what is likely to happen with different average temperature increases. The IPCC's so-called 'A2 scenario' (an average global temperature of 3.4°C with a likely range between 2 and 5.4°C)⁴ is a reasonable fit with the current climate bill targets. Examples of impacts projected in this scenario include:

- 140 million people having increased water stress in Northern Africa by 2020 and 80 million in Southern Africa.
- In Asia, an additional 49 million, 132 million and 266 million people that could be at risk of hunger by 2020, 2050 and 2080 respectively.¹
- In Latin America, the number of additional people at risk of hunger is likely to reach five, 26 and 85 million by 2020, 2050 and 2080 respectively. The number of people at risk on coastal flood plains is likely to increase from nine million in 1990 to 36 million by the 2080s and leave more than 100 million people at risk of water shortages.
- The proportion of the land surface in extreme drought, globally, is predicted to increase from one to three per cent for the present day to 30 per cent by 2090s.

¹ This is without carbon fertilisation. See below for more on this.

3.2 Disease

The World Health Organisation has calculated that 27,000 deaths from malaria in 2000 were due to climate change which has already taken place. A further 47,000 were due to diarrhoeal diseases and 77,000 to malnutrition.⁵ A 2°C rise in temperature may lead to 40 to 60 million more people exposed to malaria in Africa increasing to 70 to 80 million at temperature increases of 3 to 4°C.⁶

Scientists have also predicted that climate change will increase the global population exposed to dengue fever. A 4°C temperature rise will likely lead to five to six billion people being exposed, predominantly in the developing world.⁷

3.3 Sea level rise

3 to 4°C of warming is likely to cause 20 to 80cm of sea level rise. Even assuming flood protection rises in line with per capita GDP, depending on levels of population growth, between seven to 70 million and 20 to 300 million additional people will be flooded each year.⁸

Scientists in Alexandria, Egypt, have concluded that by 2050 a rise in sea levels of 50cm would displace 1.5 million people and cause \$35 billion of damage.⁹ Egypt's current total Gross Domestic Product (GDP) is about \$80 billion.

There will be serious risks and increasing pressures for coastal protection in South East Asia (Bangladesh and Vietnam). In fact Bangladesh is likely to lose as much as one third of its land area, displacing tens of millions from the fertile Meghna delta.¹⁰

Small islands in the Caribbean and the Pacific are under threat, as are large coastal cities, such as Tokyo, Shanghai, Hong Kong, Mumbai, Calcutta, Karachi, Buenos Aires, St Petersburg, New York, Miami and London.¹¹

What does four degrees mean for the UK and Europe?

- Southern Europe will be similar to the North Africa/Middle East of today. Possible new deserts in Italy, Spain, Greece and Turkey.
- Few remaining glaciers in the Alps.
- Summer temperatures in Southern England could reach 45°C.
- South East England likely to become water stressed with increased droughts.
- Possible increase from one million to four million people at risk from flooding in the UK.

(From Lynas, M. (2007). *Six degrees: our future on a hotter planet*. London, Fourth Estate (HarperCollins)

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3.4 Hunger

The impact on food production depends on whether and to what extent there is a carbon fertilisation effect.² However, even under the most optimistic scenarios a 4°C degree temperature rise is likely to result in an overall drop in agricultural productivity globally with the worst hit areas including Africa and Western Asia.¹²

David King, the government's chief scientist, has said a 3°C rise in temperature, currently believed to be equivalent to 550ppm of CO₂, would put 400 million more people at risk of hunger, and up to three billion at risk of flooding and without fresh water supplies.¹³

3.5 Positive feedback

As average temperature rises, the potential increases for what the Stern Report calls "abrupt and large-scale changes." Such changes include the melting of the Greenland ice sheet - with major implications for sea level rise - and the loss of the Amazon forest - with major implications for the Earth's ability to absorb CO₂.¹⁴ These large-scale changes also raise the potential for what is called 'positive feedback'; in other words a temperature level that triggers a major carbon release that increases the temperature further, which triggers more carbon release and so on.

It is clear that at four degrees it will be increasingly difficult both to address the problem and to control/mitigate its impacts. There is a very real likelihood that this level of climate change will reverse any progress that has been made in achieving the Millennium Development Goals.

4. The need for a science-based target

There is little argument that a 'four degree world' is something to be avoided so it makes little sense to include a target in the climate bill that sets us on course for this disastrous scenario.

Beyond the powerful moral case that we should do all we can to avoid the kind of impacts set out above over the coming decades, there are several reasons to set a target that reflects the latest science on what is needed to avoid dangerous climate change:

- We are being warned by scientists that the next decade is a critical period where concerted action must be taken. Delaying setting an appropriate target ignores the urgency of the problem and makes it potentially more difficult to address effectively in the future.

² On carbon fertilisation, the Stern Review says the following: "Carbon dioxide is a basic building block for plant growth. Rising concentrations in the atmosphere may enhance the initial benefits of warming and even offset reductions in yield due to heat and water stress. Work based on the original predictions for the carbon fertilisation effect suggests that yields of several cereals (wheat and rice in particular) will increase for 2 or 3°C of warming globally, according to some models, but then start to fall once temperatures reach 3 or 4°C."

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- It is likely that once the bill is passed and the first five-year emissions reduction 'budget' set there will be a high degree of political inertia when it comes to amending it. If the political will then exists to revise the target after the first period, this will create the need for much steeper cuts during the second and third budget periods and beyond. For all stakeholders concerned (including political parties) it makes better sense to include a more accurate target in the bill from the beginning.
- Increasing the target at a later date could prove difficult to handle economically. A more gradual process of reform starting now is surely more sensible than what could prove to be a shock to the system further down the line. Also, businesses tend to crave certainty in terms of the policy and regulatory environment so may not welcome the very real possibility of a significant increase in the target at some, as yet unspecified, point in the future.
- Setting a realistic target now will demonstrate to the rest of the world that the UK is serious about tackling the problem. This may increase negotiating leverage with others in the Kyoto process and encourage countries such as India and China to make the necessary commitments.
- The UK is investing significant amounts of aid money in achieving the Millennium Development Goals (MDGs). Setting a target in the climate bill that effectively aims for a four degree temperature increase is essentially creating a plan to reverse any progress that could be made towards the MDGs; undermining a great deal of time, money and effort.

In summary, setting a 60 per cent target in the climate bill instead of 80 per cent does not make much environmental, political or economic sense; but it does send an important signal that we are planning for a 'four degree', not a 'two degree world'. This two degrees difference may not sound a lot but it is what separates life or death, happiness or misery, development or poverty for many millions of people.

While the personal and political efforts that have been made by the prime minister on anti-poverty issues such as increasing aid and debt relief are welcome, these face being overshadowed by an unwillingness to take the necessary action to address climate change. WDM urges all those involved in developing the climate change bill to push for reduction targets that give us a fighting chance of doing what has been promised: avoiding dangerous climate change.

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