



# Climate Change

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*By Philipp Müller*

Climate Change has been one of the most controversial and most discussed issues in the last decade. It is claimed that carbon dioxide (CO<sub>2</sub>) emissions, caused by the burning of fossil fuels (oil, gas and coal), cause global temperatures to rise, which would lead to catastrophic changes in the climate during the 21st century. According to computer climate models, global temperatures are projected to rise by 1.5 to 6 degrees Celsius (°C) in this century. Extreme weather events such as floods, storms, hurricanes and droughts are supposed to become more frequent and more severe, the polar ice caps are supposed to melt and sea levels to rise dramatically. Many politicians, scientists, environmental activists and journalists demand that in order to avoid catastrophic climate change man-made carbon dioxide emissions must be drastically reduced.

However, the Kyoto Protocol has failed to reduce global CO<sub>2</sub> emissions and it has expired in December 2012. The much-hyped Copenhagen Climate summit in December 2009 and subsequent summits in 2010, 2011 and 2012 failed to reach legally binding targets for carbon dioxide emissions reduction. The prospects of a new international agreement are very low. Emerging economies like China and India will continue to use fossil fuels to achieve high economic growth rates, which are necessary to lift their populations out of poverty. They will not accept binding CO<sub>2</sub> emissions reductions. Renewable energy sources such as wind and solar power are too expensive and unreliable to replace fossil fuels in the foreseeable future.<sup>1</sup> Thus, CO<sub>2</sub> emissions will continue to rise.

However, this does not necessarily spell disaster. CO<sub>2</sub> itself causes only a small initial warming. It is generally assumed that a doubling of CO<sub>2</sub> levels in the atmosphere would only increase global temperatures by 1°C.<sup>2</sup> It is the effect that increasing CO<sub>2</sub> concentrations in the atmosphere have on water vapour, by far the most abundant greenhouse gas, that is crucial. It is disputed if this effect is positive (e.g. warming) or negative (cooling). While it is not sure how further increases of atmospheric CO<sub>2</sub> will affect temperatures, in the last 16 years global temperatures have stagnated despite rising CO<sub>2</sub> emissions.<sup>3</sup> This global warming standstill has not been predicted by any climate models. Climate scientists are not able to successfully predict if the earth will be warming or cooling in the future. However, it is important to realise that mild warming and higher carbon dioxide concentration in the atmosphere are beneficial because they enhance plant growth and thus food production. As the global population is estimated to rise to approximately 9 billion by mid-century, this would be a very welcomed development.

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1 <http://www.thegwpf.org/images/stories/gwpcf-reports/hughes-windpower.pdf>

2 CO<sub>2</sub> levels in the atmosphere have increased from approximately 0.029% (or 290 parts per million) to 0.04% (or 400 ppm) over the past 50 years.

3 [http://www.thegwpf.org/content/uploads/2013/03/Whitehouse-GT\\_Standstill.pdf](http://www.thegwpf.org/content/uploads/2013/03/Whitehouse-GT_Standstill.pdf)

There is no evidence that the magnitude or frequency of extreme weather events has increased as a consequence of global warming. According to Dr Indur Goklany, extreme weather events are responsible for only 0.05% of all global deaths. Long term (1900–2008) data show that average annual deaths and death rates from all such events declined by 93% and 98%, respectively since the 1920s.<sup>4</sup> The main reason for this decline has been the rising prosperity, for which - ironically - the use of fossil fuels has been essential.

Thus, there is no reason to panic about rising CO<sub>2</sub> emissions. With apologies to Al Gore, this is the real 'inconvenient truth'.

*Note: This article was originally written in summer 2010. It was updated in March 2013.*

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<sup>4</sup> [http://www.thegwpf.org/images/stories/gwpf-reports/goklany-public\\_health.pdf](http://www.thegwpf.org/images/stories/gwpf-reports/goklany-public_health.pdf)