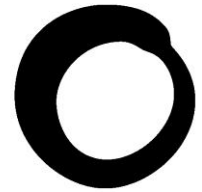


**May 2010**



**Cyfeillion  
y Ddaear  
Cymru  
Friends of  
the Earth  
Cymru**

# **Climate science: Countering the myths**

We cannot afford to ignore expert warnings on the risks of climate change. The vast majority of climate scientists agree that man-made climate change is happening. If nine out of ten pilots said they thought that a plane was likely to crash no-one would be foolish enough to fly in it.

Reducing our growing dependency on fossil fuels will strengthen our energy security as well as helping to tackle climate change. Our reliance on overseas supplies of gas and oil, with their dwindling supply and yo-yoing prices, is a major threat to the UK economy.

Slashing energy waste and developing the UK's vast potential for green energy will create new jobs and industries and warmer homes for the poor.

Friends of the Earth Cymru believes that, in view of the urgency of tackling climate change and reaping the benefits of the green economy, it is important that people are provided with scientifically sound information rather than myths and misleading arguments

---

**Friends of the Earth Cymru inspires solutions to environmental problems, which make life better for people.**

**Friends of the Earth Cymru:**

- is dedicated to protecting the environment and promoting a sustainable future for Wales**
- is part of the UK's most influential environmental campaigning organisation**
- is part of the most extensive environmental network in the world, with over 60 national organisations across five continents**
- supports a unique network of campaigning local groups, working in communities across Wales**
- is dependent upon individuals for over 90 per cent of its income.**

**To join or make a donation call us on 0800 581 051**

**Friends of the Earth Cymru, 33 Castle Arcade Balcony, Cardiff CF10 1BY**

**Tel 029 2022 9577 Fax 029 2022 8775 Email [cymru@foe.co.uk](mailto:cymru@foe.co.uk) Website [www.foecymru.co.uk](http://www.foecymru.co.uk)**

Friends of the Earth Limited Registered in London No 1012357. Registered office 26-28 Underwood Street London N1 7JQ

## **1. “Climate change is a natural not a man-made process”**

Climatic changes have occurred throughout history as a result of natural factors, such as variations in the Earth’s tilt and orbit around the Sun. The temperature rise and other changes over the last century, however, are larger than can be accounted for by these influences alone. According to the biggest science review of climate change ever, the Inter Governmental Panel on Climate Change (IPCC) Fourth Assessment Report [1], there is at least a ninety per cent chance that most of this warming is the result of human activity. This analysis is supported by the National Academies of Science of the world’s leading nations [2].

## **2. “The world is cooling not warming”**

Despite the recent cold winter experienced by many parts of the world, the planet is getting warmer. Average global temperatures have increased by about 0.74C over the last century [3]. In the 160-year record of global surface temperature, ten of the warmest years on record have occurred since 1997 and the ‘noughties’ (2000 to 2009) has been the warmest decade [4]. While some areas shivered this winter, other parts of the world experienced abnormally warm temperatures [5].

## **3. “There’s no consensus on climate change”**

Evidence that human activity is causing climate change is accepted by the world’s leading scientists, as represented by Academies of Science [2]; virtually all the world’s government’s [6]; leading health experts, such as the BMA [7]; military experts, such as the MoD [8]; leading economists, such as Lord Stern [9]; and leading business organisations, such as the CBI [10]. The consensus on climate change is well documented on the Logical Science website [11].

## **4. “Intergovernmental Panel on Climate Change reports are full of mistakes”**

Over the course of 22 years, the IPCC has drawn upon the expertise of thousands of the best scientific minds in order to create a better understanding of the complexity of climate change. Media reports have alleged that its Fourth Assessment Report (2007) contains errors. It did state incorrectly, in the section on Impacts, that 80 per cent of Himalayan glaciers would very likely disappear by 2035. Although this mistake was not made in the climate science section of the report or in the summary, it should have been spotted and corrected. Other allegations of inaccuracies by the IPCC have been shown to be largely unfounded, as this Real Climate article, ‘IPCC Errors: Facts and Spin’, shows [12]. One mistake in an almost 3000 page report does not negate the rest of it. The IPCC report still represents the most authoritative account of the current state of knowledge of climate change.

## **5. “Climate change risks are over-stated”**

Rather than being ‘alarmist’, the IPCC has been described as being excessively cautious. Its Fourth report (2007) was criticised, for instance, in an article in the New Scientist for omitting recent and more worrying research [13]. The rigorous and cautious nature of the IPCC process has been well-described by a former chairman of its Science Working Group, Sir John Houghton, in the Times on 15th March 2010 [14]. Three of the UK’s leading scientific bodies, the Royal Society, the Met Office and the Natural Environment Research Council, have warned that “the scientific evidence for dangerous, long-term and potentially irreversible climate change has strengthened significantly” since the publication of the 2007 IPCC report [15].

## **6. “It’s the sun stupid”**

Energy received from the Sun and variations in the Earth’s orbit are two of the many factors that influence the climate but cannot account for all the changes in average global temperature since the 19th Century. While there is evidence that, during the first part of the 20th Century, energy from the Sun contributed to some of the warming, over the last 30 years or so, the Earth has warmed significantly even though there has been a slight decline in solar energy received. Studies indicate that the recent warming is due to man-made greenhouse gases. [16] and [17].

## **7. “Leaked e-mails show scientists can’t be trusted”**

The e-mails stolen from the University of East Anglia were used by climate sceptics to suggest that claims that the planet has warmed were skewed. There are two important points here. Firstly, there is no evidence that this is the case. Two inquiries, one by the Parliamentary Committee on Science and Technology [18] and the other by a panel of international experts led by Lord Oxburgh [19], have cleared the scientists of any scientific dishonesty. Secondly, the evidence on whether the world has warmed was based on three separate sets of data – by NASA and the National Climate Data Centre in the USA and by the Met Office in collaboration with the University of East Anglia in the UK – all of which agree with each other [20].

## **8. “Levels of carbon dioxide in the atmosphere are too small to matter”**

Natural greenhouse gases, such as water vapour, carbon dioxide, methane and nitrous oxide, keep the Earth 30C warmer than it would otherwise be even though they make up less than one per cent of the atmosphere. Concentrations of carbon dioxide, which are just 0.03 per cent of the atmosphere, have increased from 280 ppm (parts per million) before industrialisation to 388 ppm today [21] and have been the main driver of man-made climate change. The UK’s premier science body, the Royal Society, points out, “carbon dioxide only makes up a small part of the atmosphere, but even in tiny concentrations it has a large influence over our climate” [22].

## **9. “Climate scientists have a vested interest in claiming climate change”**

Climate change science has been built-up over many years by scientists with no obvious vested interest in claiming climate change is happening. Even many of the big oil companies, who have most to lose over a switch from fossil fuels, say that climate change is happening and is man-made [23]. There is some evidence however that Exxon-Mobil has adopted the tactics of the tobacco industry in its efforts to slow down action on climate change [24]. There is also evidence of links between the fossil fuel and energy companies, especially in North America, and those who oppose the science of climate change [25].

## **10. “Climate change is just an excuse for stealth taxes”**

It is true that taxes have increased over the last decade. Spending has also increased on, for example, education and the health service. Green taxes, however, make up a smaller proportion of taxes than when the Kyoto Protocol was agreed in 1997. However, Friends of the Earth supports green taxes to shift us from an addiction to fossil fuels and to cleaner alternatives. This will help our economy become more energy efficient and survive the likely massive oil price increases in the future. The International Energy Agency has detailed how major cuts in carbon dioxide emissions could be achieved by changing global energy use and that this would require an investment of just one per cent of global GDP per year between now and 2050 [26]. At the same time, savings would be made from reduced fossil fuel use and energy security would improve.

## References

1. IPCC's 'Climate Change 2007: Synthesis Report'  
[www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf)
2. G8+5 Academies' Joint Statement: 'Climate change and the transformation of energy technologies for a low carbon future' [www.nationalacademies.org/includes/G8+5energy-climate09.pdf](http://www.nationalacademies.org/includes/G8+5energy-climate09.pdf)
3. IPCC's 'Climate Change 2007: Synthesis Report'  
[www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf)
4. 'Noughties' confirmed as the warmest decade on record' Met Office press release, 7 December 2009  
[www.metoffice.gov.uk/corporate/pressoffice/2009/pr20091208b.html](http://www.metoffice.gov.uk/corporate/pressoffice/2009/pr20091208b.html)
5. 'What's causing the cold weather' Met Office press release, 6th January 2010  
[www.metoffice.gov.uk/corporate/pressoffice/2010/pr20100106b.html](http://www.metoffice.gov.uk/corporate/pressoffice/2010/pr20100106b.html)
6. The UN's Framework Convention on Climate Change  
[unfccc.int/essential\\_background/convention/status\\_of\\_ratification/items/2631.php](http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php)
7. 'Doctors taking action on climate change' BMA website  
[www.bma.org.uk/health\\_promotion\\_ethics/climate\\_change](http://www.bma.org.uk/health_promotion_ethics/climate_change)
8. Ministry of Defence Climate Change Strategy  
[www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/HealthandSafetyPublications/SSDCD/SustainableDevelopmentPolicy/ClimateChangeStrategy.htm](http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/HealthandSafetyPublications/SSDCD/SustainableDevelopmentPolicy/ClimateChangeStrategy.htm)
9. 'Stern review on the economics of climate change' [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/stern\\_review\\_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)
10. CBI on climate change website: [climatechange.cbi.org.uk](http://climatechange.cbi.org.uk)
11. [logicalscience.com](http://logicalscience.com)
12. 'IPCC errors: facts and spin' on the 'real climate' website  
[www.realclimate.org/index.php/archives/2010/02/ipcc-errors-facts-and-spin](http://www.realclimate.org/index.php/archives/2010/02/ipcc-errors-facts-and-spin)
13. 'Climate Change: What the IPCC didn't tell us' New Scientist, 10th February 2007  
[www.newscientist.com/article/mg19325903.800-climate-change-what-the-ipcc-didnt-tell-us.html](http://www.newscientist.com/article/mg19325903.800-climate-change-what-the-ipcc-didnt-tell-us.html)
14. 'We climate scientists are not eco-fanatics' Times Online 15th March 2010  
[www.timesonline.co.uk/tol/comment/columnists/guest\\_contributors/article7061646.ece](http://www.timesonline.co.uk/tol/comment/columnists/guest_contributors/article7061646.ece)
15. 'Climate science statement from the Met Office, NERC and the Royal Society' 24th November 2009  
[www.nerc.ac.uk/press/releases/2009/29-climate.asp](http://www.nerc.ac.uk/press/releases/2009/29-climate.asp)
16. 'Climate Change Controversies' by the Royal Society  
[royalsociety.org/Climate-change-controversies-a-simple-guide](http://royalsociety.org/Climate-change-controversies-a-simple-guide)
17. 'Climate myths: Global warming is down to the Sun, not humans' New Scientist  
[www.newscientist.com/article/dn11650-climate-myths-global-warming-is-down-to-the-sun-not-humans.html](http://www.newscientist.com/article/dn11650-climate-myths-global-warming-is-down-to-the-sun-not-humans.html)
18. 'The disclosure of climate data from the Climatic Research Unit at the University of East Anglia' by the Parliamentary Science and Technology Committee, 31st March  
[www.parliament.uk/business/committees/committees-archive/science-technology/s-t-cru-inquiry](http://www.parliament.uk/business/committees/committees-archive/science-technology/s-t-cru-inquiry)
19. 'Report of the International Panel set up by the University of East Anglia to examine the research of the Climatic Research Unit' [www.uea.ac.uk/mac/comm/media/press/CRUstatements/SAP](http://www.uea.ac.uk/mac/comm/media/press/CRUstatements/SAP)
20. 'Global average temperature records', The Met Office  
[www.metoffice.gov.uk/climatechange/science/explained/explained5.html](http://www.metoffice.gov.uk/climatechange/science/explained/explained5.html)
21. 'Trends in atmospheric carbon dioxide' National Oceanic and Atmospheric Administration  
[www.esrl.noaa.gov/gmd/ccgg/trends/#mlo](http://www.esrl.noaa.gov/gmd/ccgg/trends/#mlo)
22. 'Climate change controversies' The Royal Society  
[royalsociety.org/Climate-change-controversies-a-simple-guide](http://royalsociety.org/Climate-change-controversies-a-simple-guide)
23. 'BP tackles climate change threat with £200m boost for energy efficiency' Daily Telegraph advertisement feature, 25th October 2005  
<http://www.telegraph.co.uk/finance/2954970/BP-tackles-climate-change-threat-with-200m-boost-for-energy-efficiency.html>
24. 'ExxonMobil Report: Smoke Mirrors and Hot Air', Union of Concerned Scientists, 2007  
[www.ucsusa.org/global\\_warming/science\\_and\\_impacts/global\\_warming\\_contrarians/exxonmobil-report-smoke.html](http://www.ucsusa.org/global_warming/science_and_impacts/global_warming_contrarians/exxonmobil-report-smoke.html)
25. 'Climate Cover-Up' by James Hoggan, Greystone Books
26. 'Energy Technology Perspectives', International Energy Agency, 2008