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## The sun is warmer now than for the past 11,400 years

By Christopher Monckton, Sunday Telegraph

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**The Stern report last week predicted dire economic and social effects of unchecked global warming. In what many will see as a highly controversial polemic, Christopher Monckton disputes the 'facts' of this impending apocalypse and accuses the UN and its scientists of distorting the truth**

**Last week, Gordon Brown and his chief economist both said global warming was the worst "market failure" ever. That loaded sound-bite suggests that the "climate-change" scare is less**



**Biblical droughts, floods, plagues and extinctions?**

**about saving the planet than, in Jacques Chirac's chilling phrase, "creating world government".**

This week and next, I'll reveal how politicians, scientists and bureaucrats contrived a threat of Biblical floods, droughts, plagues, and extinctions worthier of St John the Divine than of science.

Sir Nicholas Stern's report on the economics of climate change, which was published last week, says that the debate is over. It isn't. There are more greenhouse gases in the air than there were, so the world should warm a bit, but that's as far as the "consensus" goes. After the recent hysteria, you may not find the truth easy to believe. So you can find [all my references and detailed calculations here](#).

**The Royal Society says there's a worldwide scientific consensus. It brands Apocalypse-deniers as paid lackeys of coal and oil corporations. I declare my interest: I once took the taxpayer's shilling and advised Margaret Thatcher, FRS, on scientific scams and scares. Alas, not a red cent from Exxon.**

**In 1988, James Hansen, a climatologist, told the US Congress that temperature would rise 0.3C by the end of the century (it rose 0.1C), and that sea level would rise several feet (no, one inch). The UN set up a transnational bureaucracy, the Intergovernmental Panel on Climate Change (IPCC). The UK taxpayer unwittingly meets the entire cost of its scientific team, which, in 2001, produced the Third Assessment Report, a Bible-length document presenting apocalyptic conclusions well beyond previous reports.**

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This week, I'll show how the UN undervalued the sun's effects on historical and contemporary climate, slashed the natural greenhouse effect, overstated the past century's temperature increase, repealed a fundamental law of physics and tripled the man-made greenhouse effect.

Next week, I'll demonstrate the atrocious economic, political and environmental cost of the high-tax, zero-freedom, bureaucratic centralism implicit in Stern's report; I'll compare the global-warming scare with previous sci-fi alarums; and I'll show how the environmentalists' "precautionary principle" (get the state to interfere now, just in case) is killing people.

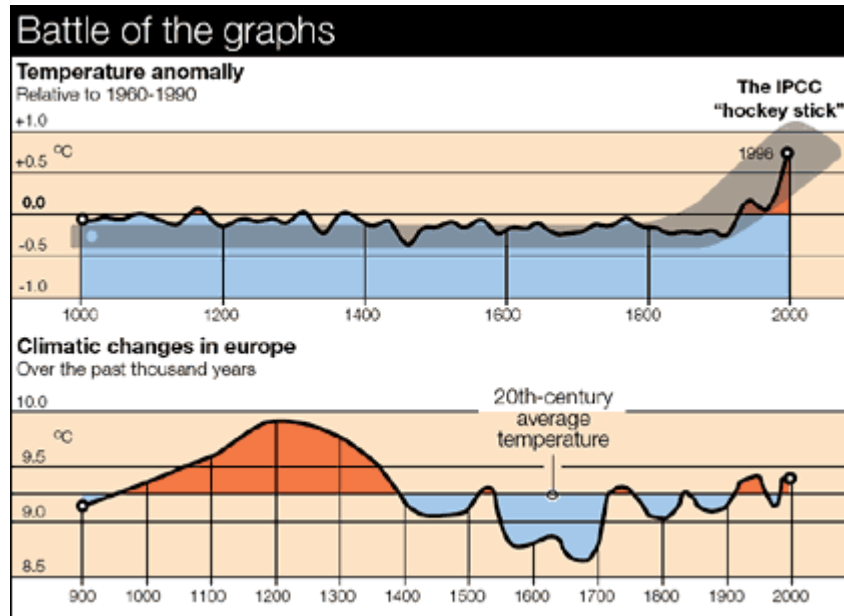
So to the scare. First, the UN implies that carbon dioxide ended the last four ice ages. It displays two 450,000-year graphs: a sawtooth curve of temperature and a sawtooth of airborne CO<sub>2</sub> that's scaled to look similar. Usually, similar curves are superimposed for comparison. The UN didn't do that. If it had, the truth would have shown: the changes in temperature preceded the changes in CO<sub>2</sub> levels.

Next, the UN abolished the medieval warm period (the global warming at the end of the First Millennium AD). In 1995, David Deming, a geoscientist at the University of Oklahoma, had written an article reconstructing 150 years of North American temperatures from borehole data. He later wrote: "With the publication of the article in Science, I gained significant credibility in the community of scientists working on climate change. They thought I was one of them, someone who would pervert science in the service of social and political causes. One of them let his guard down. A major person working in the area of climate change and global warming sent me an astonishing email that said: 'We have to get rid of the Medieval Warm Period.' "

So they did. The UN's second assessment report, in 1996, showed a 1,000-year graph demonstrating that temperature in the Middle Ages was warmer than today. But the 2001 report contained a new graph showing no medieval warm period. It wrongly concluded that the 20th century was the warmest for 1,000 years. The graph looked like an ice hockey-stick. The wrongly flat AD1000-AD1900 temperature line was the shaft: the uptick from 1900 to 2000 was the blade. Here's how they did it:

- They gave one technique for reconstructing pre-thermometer temperature 390 times more weight than any other (but didn't say so).
- The technique they overweighted was one which the UN's 1996 report had said was unsafe: measurement of tree-rings from bristlecone pines. Tree-rings are wider in warmer years, but pine-rings are also wider when there's more carbon dioxide in the air: it's plant food. This carbon dioxide fertilisation distorts the calculations.
- They said they had included 24 data sets going back to 1400. Without saying so, they left out the set showing the medieval warm period, tucking it into a folder marked "Censored Data".
- They used a computer model to draw the graph from the data, but scientists later found that the model almost always drew hockey-sticks even if they fed in random, electronic "red noise".

The large, full-colour "hockey-stick" was the key graph in the UN's 2001 report, and the only one to appear six times. The Canadian Government copied it to every household. Four years passed before a leading scientific journal would publish the truth about the graph. Did the UN or the Canadian government apologise? Of course not. The UN still uses the graph in its publications.



Even after the "hockey stick" graph was exposed, scientific papers apparently confirming its abolition of the medieval warm period appeared. The US Senate asked independent statisticians to investigate. They found that the graph was meretricious, and that known associates of the scientists who had compiled it had written many of the papers supporting its conclusion.

The UN, echoed by Stern, says the graph isn't important. It is. Scores of scientific papers show that the medieval warm period was real, global and up to 3C warmer than now. Then, there were no glaciers in the tropical Andes: today they're there. There were Viking farms in Greenland: now they're under permafrost. There was little ice at the North Pole: a Chinese naval squadron sailed right round the Arctic in 1421 and found none.

The Antarctic, which holds 90 per cent of the world's ice and nearly all its 160,000 glaciers, has cooled and gained ice-mass in the past 30 years, reversing a 6,000-year melting trend. Data from 6,000 boreholes worldwide show global temperatures were higher in the Middle Ages than now. And the snows of Kilimanjaro are vanishing not because summit temperature is rising (it isn't) but because post-colonial deforestation has dried the air. Al Gore please note.

In some places it was also warmer than now in the Bronze Age and in Roman times. It wasn't CO2 that caused those warm periods. It was the sun. So the UN adjusted the maths and all but extinguished the sun's role in today's warming. Here's how:

- The UN dated its list of "forcings" (influences on temperature) from 1750, when the sun, and consequently air temperature, was almost as

warm as now. But its start-date for the increase in world temperature was 1900, when the sun, and temperature, were much cooler.

- Every "forcing" produces "climate feedbacks" making temperature rise faster. For instance, as temperature rises in response to a forcing, the air carries more water vapour, the most important greenhouse gas; and polar ice melts, increasing heat absorption. Up goes the temperature again. The UN more than doubled the base forcings from greenhouse gases to allow for climate feedbacks. It didn't do the same for the base solar forcing.

Two centuries ago, the astronomer William Herschel was reading Adam Smith's *Wealth of Nations* when he noticed that quoted grain prices fell when the number of sunspots rose. Gales of laughter ensued, but he was right. At solar maxima, when the sun was at its hottest and sunspots showed, temperature was warmer, grain grew faster and prices fell. Such observations show that even small solar changes affect climate detectably. But recent solar changes have been big.

Sami Solanki, a solar physicist, says that in the past half-century the sun has been warmer, for longer, than at any time in at least the past 11,400 years, contributing a base forcing equivalent to a quarter of the past century's warming. That's before adding climate feedbacks.

The UN expresses its heat-energy forcings in watts per square metre per second. It estimates that the sun caused just 0.3 watts of forcing since 1750. Begin in 1900 to match the temperature start-date, and the base solar forcing more than doubles to 0.7 watts. Multiply by 2.7, which the Royal Society suggests is the UN's current factor for climate feedbacks, and you get 1.9 watts – more than six times the UN's figure.

The entire 20th-century warming from all sources was below 2 watts. The sun could have caused just about all of it.

Next, the UN slashed the natural greenhouse effect by 40 per cent from 33C in the climate-physics textbooks to 20C, making the man-made additions appear bigger.

Then the UN chose the biggest 20th-century temperature increase it could find. Stern says: "As anticipated by scientists, global mean surface temperatures have risen over the past century." As anticipated? Only 30 years ago, scientists were anticipating a new Ice Age and writing books called *The Cooling*.

In the US, where weather records have been more reliable than elsewhere, 20th-century temperature went up by only 0.3C. AccuWeather, a worldwide meteorological service, reckons world temperature rose by 0.45C. The US National Climate Data Centre says 0.5C. Any advance on 0.5? The UN went for 0.6C, probably distorted by

urban growth near many of the world's fast-disappearing temperature stations.

The number of temperature stations round the world peaked at 6,000 in 1970. It's fallen by two-thirds to 2,000 now: a real "hockey-stick" curve, and an instance of the UN's growing reliance on computer guesswork rather than facts.

Even a 0.6C temperature rise wasn't enough. So the UN repealed a fundamental physical law. Buried in a sub-chapter in its 2001 report is a short but revealing section discussing "lambda": the crucial factor converting forcings to temperature. The UN said its climate models had found lambda near-invariant at 0.5C per watt of forcing.

You don't need computer models to "find" lambda. Its value is given by a century-old law, derived experimentally by a Slovenian professor and proved by his Austrian student (who later committed suicide when his scientific compatriots refused to believe in atoms). The Stefan-Boltzmann law, not mentioned once in the UN's 2001 report, is as central to the thermodynamics of climate as Einstein's later equation is to astrophysics. Like Einstein's, it relates energy to the square of the speed of light, but by reference to temperature rather than mass.

The bigger the value of lambda, the bigger the temperature increase the UN could predict. Using poor Ludwig Boltzmann's law, lambda's true value is just 0.22-0.3C per watt. In 2001, the UN effectively repealed the law, doubling lambda to 0.5C per watt. A recent paper by James Hansen says lambda should be 0.67, 0.75 or 1C: take your pick. Sir John Houghton, who chaired the UN's scientific assessment working group until recently, tells me it now puts lambda at 0.8C: that's 3C for a 3.7-watt doubling of airborne CO<sub>2</sub>. Most of the UN's computer models have used 1C. Stern implies 1.9C.

On the UN's figures, the entire greenhouse-gas forcing in the 20th century was 2 watts. Multiplying by the correct value of lambda gives a temperature increase of 0.44 to 0.6C, in line with observation. But using Stern's 1.9C per watt gives 3.8C. Where did 85 per cent of his imagined 20th-century warming go? As Professor Dick Lindzen of MIT pointed out in The Sunday Telegraph last week, the UK's Hadley Centre had the same problem, and solved it by dividing its modelled output by three to "predict" 20th-century temperature correctly.

A spate of recent scientific papers, gearing up for the UN's fourth report next year, gives a different reason for the failure of reality to keep up with prediction. The oceans, we're now told, are acting as a giant heat-sink. In these papers the well-known, central flaw (not mentioned by Stern) is that the computer models' "predictions" of past ocean temperature changes only approach reality if they are averaged over a depth of at least a mile and a quarter.

Deep-ocean temperature hasn't changed at all, it's barely above freezing. The models tend to over-predict the warming of the climate-relevant surface layer up to threefold. A recent paper by John Lyman, of the US National Oceanic and Atmospheric Association, reports that the oceans have cooled sharply in the past two years. The computers didn't predict this. Sea level is scarcely rising faster today than a century ago: an inch every 15 years. Hansen now says that the oceanic "flywheel effect" gives us extra time to act, so Stern's alarmism is misplaced.

Finally, the UN's predictions are founded not only on an exaggerated forcing-to-temperature conversion factor justified neither by observation nor by physical law, but also on an excessive rate of increase in airborne carbon dioxide. The true rate is 0.38 per cent year on year since records began in 1958. The models assume 1 per cent per annum, more than two and a half times too high. In 2001, the UN used these and other adjustments to predict a 21st-century temperature increase of 1.5 to 6C. Stern suggests up to 10C.

Dick Lindzen emailed me last week to say that constant repetition of wrong numbers doesn't make them right. Removing the UN's solecisms, and using reasonable data and assumptions, a simple global model shows that temperature will rise by just 0.1 to 1.4C in the coming century, with a best estimate of 0.6C, well within the medieval temperature range and only a fifth of the UN's new, central projection.

Why haven't air or sea temperatures turned out as the UN's models predicted? Because the science is bad, the "consensus" is wrong, and Herr Professor Ludwig Boltzmann, FRS, was as right about energy-to-temperature as he was about atoms.

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