



# THE GREAT CARBON CON

## GLOBAL WARMING #2

**DAVID EVANS**

What do you do if you've spent years helping to save the planet by monitoring carbon emissions, only to find that the evidence doesn't quite stack up? One option is to change your mind about global warming.

Jennifer Luk (with apologies to Roy Lichtenstein)

John Maynard Keynes, accused of having made an about-turn on monetary policy during the Great Depression, rather sensibly replied: 'When the facts change, I change my mind. What do you do, sir?'

Four fundamental facts about global warming have changed during the past decade (as detailed below). But unfortunately, far too few decision-makers and the public are aware of the changes.

What do I know about global warming? As a mathematician, I spent six years building carbon-accounting models for the Australian Greenhouse Office, including the fairly complicated one that measures Australia's compliance with the Kyoto Protocol in 'land-use change and forestry'.

When I started the job in 1999, the evidence that carbon emissions caused global warming looked pretty reasonable. Not conclusive, admittedly, but the ramifications were disturbing enough that we could surely worry about that later.

The threat of global warming has been a boon for many scientists and bureaucrats, with enviably big research budgets, the creation of lots of jobs, media attention, power and status. On top of all that, helping to save the planet feels pretty good!

But from 2003, evidence began to emerge that seriously weakened the theory that carbon emissions were the main cause of global warming (which had, in any case, stopped by 2001, as detailed below). And by 2007 the evidence was pretty conclusive: at best, carbon emissions play a minor role.

Despite this, public policy and populist sentiment haven't changed since the late 1990s. For example, the Intergovernmental Panel on Climate Change (IPCC), a United Nations body established to assess climate-change information, has resisted even acknowledging the new evidence.

Despite its claim to being a scientific organisation, the IPCC is comprised mainly

of bureaucrats and conducts no research or monitoring. Its landmark report last year supposedly put an end to the debate. Perhaps it's no surprise that policymakers and the general public aren't aware of the most basic salient facts.

What follows are the four fundamental changes in the evidence about the causes

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of global warming - changes that have occurred slowly, but render much of the debate about carbon emissions obsolete. None of these facts is even controversial: scientists who back the carbon-emissions case usually don't disagree with them; they simply dispute their relevance.

### 1. THE CART BEFORE THE HORSE

Back in the late 1990s, the only evidence to support the theory that carbon was behind global warming came from analysis of ice-core samples, collected between 1985 and 1998. This was pretty low-resolution information, with the data points more than a thousand years apart. However, it appeared to show carbon dioxide and temperature moving in lockstep. This seemed too good to be true: apparently we could alter the planet's temperature simply by adjusting the levels of a minor gas.

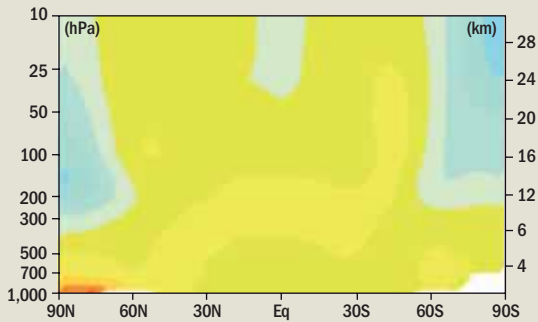
These old ice-core data are the only evidence Al Gore presents in *An Inconvenient Truth* to back the claim that carbon emissions cause global warming. Yet, by the time the movie was made, in 2005, newer data had changed the picture considerably.

Higher-resolution ice-core data showed

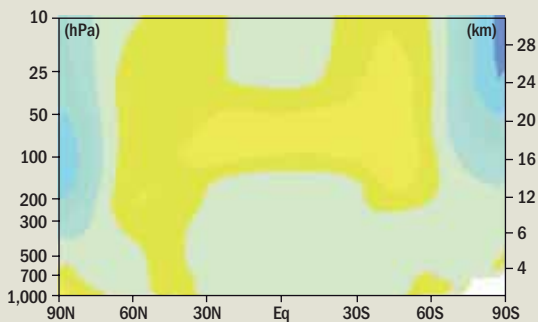
## CHART OF DARKNESS LOOKING FOR THE TELLTALE HOT SPOT

How do you measure greenhouse global warming? The UN provides the very model.

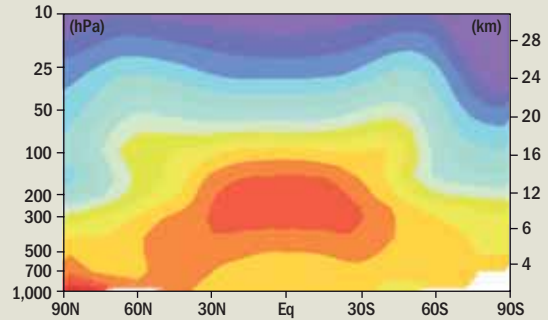
Each possible cause of global warming has a different pattern, showing where the heat rise would occur first and most. The theoretical signatures shown here are taken from the IPCC's Assessment Report 4 (2007). The horizontal axis is the latitude, from North Pole to South Pole; the vertical axes show atmospheric height (on the right) and corresponding air pressure (on the left). Coloured regions show where the temperature changes per century would occur: red represents a change of 1°C; yellow 0.5°C; green -0.5°C; and blue -1°C.



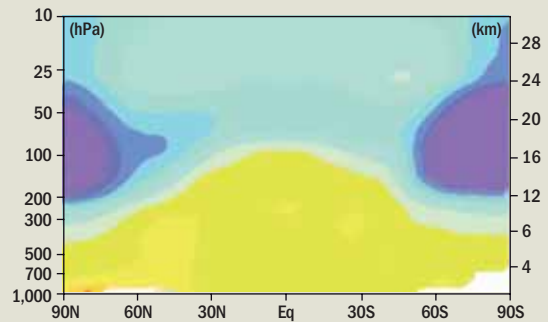
**1. Increased solar radiation** (that is, the Sun getting hotter). Warming would be moderate throughout most of the atmosphere.



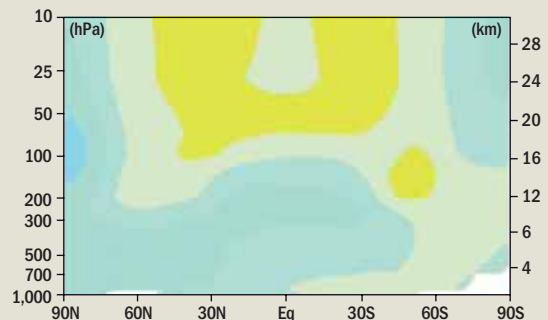
**2. Large volcanic eruption**, with huge clouds of ash and fumes. Moderate warming above 14km, and moderate cooling below.



**3. Rise in well-mixed greenhouse gases** (such as due to carbon emission). Warming would be focused in a hotspot about 8-12km above the tropics, turning to cooling above 18km.



**4. More ozone depletion** (tropospheric and stratospheric). Moderate warming below 12km, and moderate cooling above.



**5. Rising industrial pollution** (specifically of direct sulphate aerosols). Moderate cooling below 14km mainly in northern hemisphere.

See the combined signature on facing page

Source: IPCC

that, for the six global warmings during the past half a million years, temperature rises and falls occurred, on average, 800 years before the accompanying rises and falls in atmospheric carbon.

So, the carbon rises couldn't have either started or ended the temperature rises. Meaning that there must be other, natural influences on global temperatures that are more powerful than atmospheric carbon levels (hint: probably something to do with clouds - see panel over page). This lag was known and beyond dispute by 2003. Surely it was misleading of Gore not to mention the new evidence. Would anyone have believed his pitch if he'd mentioned that the supposed cause (rising and falling carbon levels) happened 800 years *after* the effect (rising and falling temperatures)?

**2. THE CUPBOARD IS BARE**

With this reversal of the ice-core evidence, there is now simply no evidence that carbon emissions cause significant global

warming. None. It's important to appreciate what evidence entails - and how it differs significantly from theories, models, surmises, politics and vested interest. In essence, evidence is a set of observations by people of events.

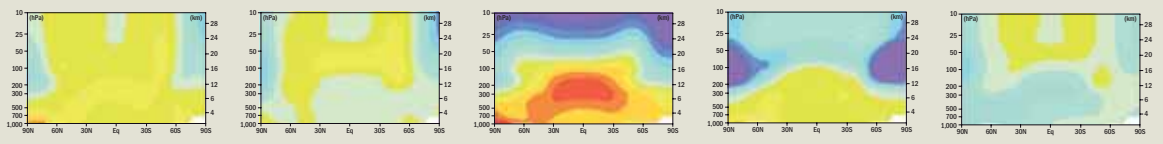
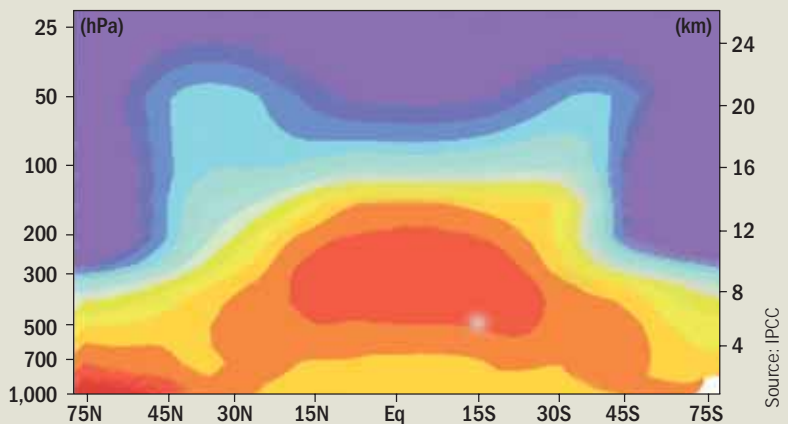
**Would anyone have believed Al Gore if he'd admitted the supposed cause happened 800 years after the effect?**

The scientific method demands evidence, and evolved as our best method for obtaining reliable information precisely because it's immune from forces such as politics and superstition.

There's ample evidence that global warming has occurred, but that evidence ▶

**PUT IT ALL TOGETHER AND THIS IS THE PATTERN THAT YOU SHOULD GET**

This theoretical signature is what the IPCC would expect to find if its views about the causes of global warming are correct. It's derived by combining the five signatures on the previous page (shown again below) in the proportions the IPCC believes they contribute to global warming. The key feature is a distinct hotspot 8-12km above the tropics.



- ▶ says nothing about the causes of the warming. Serious theoretical calculations of the temperature increase by 2100 AD range from an inconsequential 0.24°C to a catastrophic 6.2°C. But theory, even in the

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form of complicated computer models, is not evidence.

Comparing model outputs to observed results is also not evidence, because it can't prove that the model is always right - only that it was right in that instance. Existing computer models treat clouds simplistically and unrealistically, and omit the

effects of cosmic rays on clouds, so we can't be confident that they might approximate reality.

Developed nations have spent about US\$50 billion on global warming since 1990, yet have not found any evidence that carbon emissions cause global warming. If they had, don't you think we would have heard all about it, just as we hear all about how the world is warming?

**3. NO, IT'S NOT GETTING WARMER**

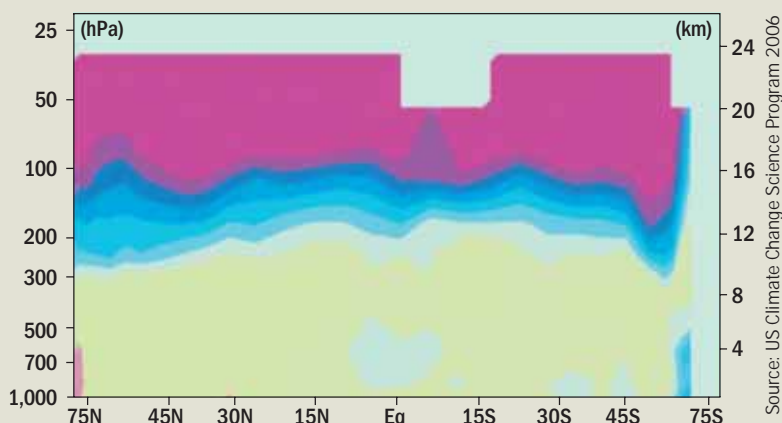
The global-warming trend that began in 1975 ended in 2001. The global temperature has been flat since then, and has actually dipped sharply during the past few months. The warmest recent year was 1998. This is a very different picture from that presented by the IPCC in 2001 of warming driven by carbon emissions for the foreseeable future.

So, why do some people say temperatures are still rising? Satellite data are the only temperature measurements we can ▶

**BUT WHEN YOU LOOK AT THE DATA . . . THERE'S NO HOTSPOT AT ALL**

This chart was published in 2006 by the US Climate Change Science Program, one of the often-cited sources for those who believe carbon emissions cause global warming. The chart shows temperature measurements by radiosondes (at all heights) since the 1960s and satellites using microwave sensors (up to 5km) since 1979.

The axes and colours are as for the previous charts, except: the horizontal axis is from only 75 degrees north to 75 degrees south; there are



no data around 60 degrees south, the vertical axis goes to only 24km; and dark blue in the previous charts is purple.

The key is that the distinct hotspot expected by the IPCC simply isn't there - not even a little one.

► trust, but they go back only to 1979. Satellites circle the Earth 24 hours a day, seven days a week, measuring the temperature across broad swathes of the globe (everywhere except the poles). Three of the four world temperature recorders use satellite data partly or exclusively, and all three say that the world stopped warming in 2001.

The fourth recorder, Nasa's Goddard Institute for Space Studies (GISS), rather ironically uses only land-based and a few ocean thermometers. However, land thermometers are often distorted by the so-called urban heat-island effect. Most were installed decades ago, in little boxes a few feet off the ground on what were then the outskirts of towns or cities, making it convenient to read the temperatures each day. But urban growth has changed the microclimate around many of these thermometers, due to concrete, asphalt, vegetation changes, houses, air condi-

tioners and so on. In contrast to the satellite data, Nasa's GISS reports a continuous warming trend since 2001.

#### 4. THE SIGNATURE IS MISSING

Each possible cause of global warming heats the atmosphere in a different pattern. Increased greenhouse warming, for

Decades of measurements by radiosonde thermometers have been unable to find even a small hotspot.

example, should cause a hotspot about 10km above the tropics. If there's no such hotspot, then either there's no significant ►

### PLAYING THE RAYS CARD OR CLOUDING THE ISSUE?

The UN's Intergovernmental Panel on Climate Change (IPCC) omits signature data for what most sceptics believe is the prime suspect for global warming: namely, clouds, cosmic rays and the Sun's magnetic field.

Although clouds are the main factor that control the Earth's temperature, they're the least understood and the most poorly represented in climate models. Cloud formation is strongly affected by the number of high-energy cosmic rays that hit the Earth. However, the Sun's magnetic field shields us from some of these rays.

Cosmic rays have a chilling effect on the Earth: they cause more low clouds. During periods of higher solar activity, the Sun's magnetic field is stronger and protects us from more of these rays, so the Earth gets hotter. The Earth's magnetic field is too



weak to significantly influence the number of rays hitting it.

Although the correlation between high-energy cosmic rays and the Earth's temperature is high, it's only a correlation and, at this stage, we can't prove that it's the key cause of any global warming there has been. The IPCC, however, focuses only on human emissions of carbon, other greenhouse gases and industrial pollution as causes of global warming. It ignores the possibility of solar-magnetic causes. DE ■

- ▶ increase in greenhouse warming, or we don't understand the greenhouse effect - in which case, all our climate models are rubbish anyway. Decades of measurements by radiosondes (devices in weather balloons that monitor and relay various atmospheric parameters such as temperature) have failed to find even a small hotspot. This is another reason we now know for sure that carbon emissions aren't a significant cause of the latest global warming. If we'd found a strong greenhouse signature, I'd switch back to being a climate-change activist.

By 2007, when it became clear that evidence of a signature was missing, the climate-change activists suggested the readings of the radiosonde thermometers might not be accurate: maybe the hot spot was there, but had gone undetected. But hundreds of radiosondes have given the same answer. Statistically, it's not possible that they've missed the hot spot.

Recently, some activists have argued that we should ignore the readings of the radiosondes, and instead take their wind measurements, apply a theory about wind shear, and run the results through their computers to estimate the temperatures. The results, they say, show that we can't rule out the presence of a hot spot. If you believe that, you'll believe anything.

## TIME TO FACE THE FACTS

Evidence of these four key changes has emerged slowly as the science for each became more settled. There was no sud-

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den news flash. In fact, most people remain ignorant that any new evidence has come to light.

However, now that we're finally coming to terms with just how expensive it will be to cut back our carbon emissions, such evidence is of global economic importance.

Before spending billions more taxpayers' dollars to reduce carbon emissions, policymakers need to clearly set out the facts supporting their case - not theories, models or opinions. The reality is that there are none. ■

More detailed data can be found at the following link:  
<http://sciencespeak.com/EvidenceLinks.pdf>

## DAVID EVANS MATHEMATICIAN AND MODELLER

David Evans holds six university degrees (despite his preference for real-world problems over academia), including a PhD in electrical engineering and a master's in statistics from Stanford, as well as a master's in applied mathematics from the University of Sydney. David was a consultant

to the Australian Greenhouse Office from 1999 to 2005, helping to develop the FullCam carbon-accounting model. He's also co-founder of two businesses, Science Speak (a scientific-modelling and mathematical-research company) and GoldNerds.com.au (which analyses Australian gold stocks). David also holds two US patents.

