

## SCEPTICS WORDS 1 - GLOBAL WARMING THEORIES

### Handout Content

The words of sceptics that are in this handout have been chosen because some of their comments discuss other theories that they believe provide a better explanation for changes in global temperatures. Such theories and the work on them are deliberately starved of research funding so they cannot undermine the political campaign on global warming.

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### Item 1-1

*"Mother Nature's inconvenient truths"* by John Christy, Inquirer Section, The Australian November 03, 2007

I've had a lot of fun recently with my tiny (and unofficial) slice of the 2007 Nobel Peace Prize awarded to the Intergovernmental Panel on Climate Change.

But, though I was one of thousands of IPCC participants, I don't think I will add "0.0001 Nobel laureate" to my resume. The other half of the prize was awarded to former US vice-president Al Gore, whose carbon footprint would stomp my neighbourhood flat. But that's another story. Both halves of the award honour promoting the message that Earth's temperature is rising because of human-based emissions of greenhouse gases. The Nobel committee praises Gore and the IPCC for alerting us to a potential catastrophe and for spurring us to a carbonless economy.

I'm sure the majority (but not all) of my IPCC colleagues cringe when I say this, but I see neither the developing catastrophe nor the smoking gun proving that human activity is to blame for most of the warming we see. Rather, I see a reliance on climate models (useful but never proof) and the coincidence that changes in carbon dioxide and global temperatures have loose similarity over time.

There are some of us who remain so humbled by the task of measuring and understanding the extraordinarily complex climate system that we are sceptical of our ability to know what it is doing and why. As we build climate data sets from scratch and look into the guts of the climate system, however, we don't find the alarmist theory matching observations. (The National Oceanic and Atmospheric Administration satellite data we analyse at the University of Alabama in Huntsville does show modest warming: about 1.4C a century, if warming trends of 0.14C a decade continue.)

It is my turn to cringe when I hear overstated confidence from those who describe the projected evolution of global weather patterns over the next 100 years, especially when I consider how difficult it is to accurately predict that system's behaviour over the next five days. Mother Nature simply operates at a level of complexity that is, at this point, beyond the mastery of mere mortals (such as

scientists) and the tools available to us. As my high-school physics teacher admonished us in those we-shall-conquer-the-world-with-a-slide-rule days, "Begin all of your scientific pronouncements with 'At our present level of ignorance, we think we know'."

I haven't seen that type of climate humility lately. Rather, I see jump-to-conclusions advocates and, unfortunately, some scientists who see in every weather anomaly the spectre of a global warming apocalypse. Explaining each successive phenomenon as a result of human action gives them comfort and an easy answer. Some of us scratch our heads and try to understand the real causes behind what we see. We discount the possibility that everything is caused by human actions, because everything we've seen the climate do has happened before.

Sea levels rise and fall continually. The Arctic icecap has shrunk before. One millennium there are hippos swimming in the Thames, and a geological blink later there is an ice bridge linking Asia and North America.

One of the challenges in studying global climate is keeping a global perspective, especially when much of the research focuses on data gathered from spots across the globe. Often observations from one region get more attention than equally valid data from another. The recent CNN report Planet in Peril, for instance, spent considerable time discussing shrinking Arctic Sea ice cover. CNN did not note that winter sea ice around Antarctica last month set a record maximum for coverage since aerial measurements started.

Then there is the challenge of translating global trends to local climate. For instance, hasn't global warming led to the five-year drought and fires in the US southwest? There has been a drought, but it would be a stretch to link this drought to carbon dioxide. If you look at the 1000-year climate record for the western US, you will see not five-year but 50-year-long droughts. The 12th and 13th centuries were particularly dry.

The inconvenient truth is that the past century has been fairly benign in the American west. A return to the region's long-term normal climate would present huge challenges for urban planners.

Without a doubt, atmospheric carbon dioxide is increasing, primarily because of carbon-based energy production (with its undisputed benefits to humanity) and many people ardently believe we must do something about its alleged consequence, global warming. This might seem like a legitimate concern, given the potential disasters that are announced almost daily, so I've looked at a couple of ways in which humans might reduce CO<sub>2</sub> emissions and their effect on temperatures.

California and some north-eastern US states have decided to force their residents within the next decade to buy cars that average 18km a litre. Even if you applied this law to the entire world, the net effect would reduce projected warming by about 0.03C by 2100, an amount so minuscule as to be undetectable. Global temperatures vary more than that from day to day.

Suppose you are very serious about making a dent in carbon emissions and could replace about 10 per cent of the world's energy sources with non-CO<sub>2</sub>-emitting nuclear power by 2020: roughly equivalent to halving US emissions. Based on IPCC-like projections, the required 1000 new nuclear power plants would slow the warming by about 0.11C a century. It's a dent.

But what is the economic and human price, and what is it worth, given the scientific uncertainty? My experience as a missionary teacher in Africa opened my eyes to this simple fact. Without access to energy, life is brutal and short. The uncertain effects of global warming far in the future must be weighed against disasters at our doorsteps today.

Bjorn Lomborg's Copenhagen Consensus 2004, a cost-benefit analysis of health issues by leading economists (including three Nobel laureates), calculated that spending on health issues such as micronutrients for children, HIV-AIDS and water purification has benefits 50 to 200 times those of attempting to marginally limit "global warming".

Given the scientific uncertainty and our relative impotence regarding climate change, the moral imperative here seems clear to me.

**John Christy is director of the Earth System Science Centre at the University of Alabama.**

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## Item 1-2

Editorial, *The Australian*, 15Mar07

### **Warming to debate: - Public dissent over climate change is a good thing**

SCIENCE is by nature a calling for sceptics. It is therefore a welcome development that reputable scientists are now publicly voicing their concerns at how politics has overtaken the facts on climate change. For too long the global warming debate has been driven by academic grant-seeking, corporate marketing, activist exaggeration and political opportunism rather than truth and public good. No one has escaped.

Britain's Conservative Party is considering rationing air travel entitlements to the public. The Tories are responding to Prime Minister Tony Blair's drive for Britain to become the first country to legislate to cut carbon emissions by at least 60 per cent by 2050. Rolling five-year carbon budgets will be introduced to meet the target and an independent monitoring committee established to check progress. The bill has failed to satisfy environmental groups who want the reduction target raised to 80 per cent. In Australia, the Howard Government is seeking to wrest a political as well as environmental dividend from the climate change debate by introducing nuclear energy in a bid to wrong-foot the Opposition while funding research into clean coal technology to protect Australia's global competitive advantage.

Above all, the Howard Government has adopted a strategy of hasten slowly. Labor, like Britain, has set a target of a 60 per cent reduction by 2050, which it hopes will be self-regulating through the introduction of a carbon trading scheme. As the election approaches, Labor may introduce harsh interim targets.

Public concern over global warming has been fuelled by former US vice-president Al Gore's roadshow to promote his Oscar-winning documentary, *An Inconvenient Truth*, and the UN's IPCC report confirming global warming and the near certainty of a human contribution to it. As the bandwagon has gathered pace, anyone who has challenged the orthodox view has been harshly dealt with.

The emergence of renewed scepticism within the scientific community is a welcome development for a debate that appears to have been hijacked by non-scientists, political advisers, and bureaucrats. An article in *The New York Times* this week reported a rising chorus of concern among even moderate scientists that Mr Gore had overcooked the evidence to gain public attention. Criticism of the Gore documentary centres on its sloppy scientific interpretations and the glossing-over of historical temperature data. Other respected scientists have told a British documentary, *The Great Climate Change Swindle*, that the scientific data actually demolishes the central global warming hypothesis that carbon emissions are responsible for rising temperatures. This, they say, is demonstrated by the absence of a temperature increase in the middle atmosphere, relative to the earth's surface. Another anomaly is that ice-core samples show atmospheric carbon build-up had followed higher temperatures so could not have caused them. These scientists favour solar activity as the answer to global warming.

*The Australian* accepts the evidence that global temperatures are rising and the need to take precautionary steps. But it is heartening that voices of expertise are being raised to challenge the orthodox view. Above all, we believe popularisation of climate change must not be allowed to stifle honest scientific debate. And if remedial action is to be taken, at very real cost, it must have a prospect of actually being able to do something about the problem. This is particularly true in light of the millions of deaths in the Third World each year from malaria and other treatable disease, an issue that struggles to receive a fraction of the attention of climate change.

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### Item 1-3

Senator Inhofe speech in the US Senate on how fear of the future is being driven by unproven and un-testable computer models:

“Even the New York Times has been forced to acknowledge the overwhelming evidence that the Earth is currently well within natural climate variation. This inconvenient reality means that all the warming doomsayers have to back up their climate fears are unproven computer models predicting future doom.

Of course, you can't prove a prediction of the climate in 2100 wrong today, which reduces the models to speculating on what 'could' 'might' 'may' happen 50 or 100 years from now. But prominent UN scientists have publicly questioned the

reliability of climate models. In a candid statement, IPCC scientist Dr. Jim Renwick-a lead author of the IPCC 4th Assessment Report-publicly admitted that climate models may not be so reliable after all. Renwick stated in June: "Half of the variability in the climate system is not predictable, so we don't expect to do terrifically well." Let me repeat: a UN scientist admitted, "Half of the variability in the climate system is not predictable.

Also in June, another high-profile UN IPCC lead author, Dr. Kevin Trenberth, echoed Renwick's sentiments about climate models by referring to them as nothing more than "story lines." A leading scientific skeptic, Meteorologist Dr. Hendrik Tennekes, a scientific pioneer in the development of numerical weather prediction and former director of research at The Netherlands' Royal National Meteorological Institute, recently took the critique of climate computer models one step further. Tennekes said in February 2007, "I am of the opinion that most scientists engaged in the design, development, and tuning of climate models are in fact software engineers. They are unlicensed, hence unqualified to sell their products to society."

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#### Item 1-4

*"Debate on climate change far from over"* - The UN panel from which governments get their information is deeply flawed, writes Economics editor Alan Wood, *The Australian*, P14, Opinion, 19Jul06

At lunchtime on Monday, John Howard and Victoria's Steve Bracks were on their feet talking about energy, climate change and the environment. While their approaches were notably different, there is one thing on which they both agree: the UN's Intergovernmental Panel on Climate Change is the font of all scientific wisdom on global warming.

In fact, it has become quite fashionable of late to assert the global warming debate is over and an overwhelming scientific consensus prevails. This is simply untrue. As acknowledged in an Australian Bureau of Agriculture and Resource Economics report on climate change scenarios, also released on Monday, there are still considerable scientific uncertainties surrounding the nature and extent of future climate change.

A report released in the US on Friday has torn apart one of the main props used by the IPCC to illustrate the need for urgent action on climate change. The report raises serious questions about the IPCC process and the findings on which world governments rely in forming their climate change policies. First, some background.

In telling the global warming story the IPCC, since 2001, has relied very, very heavily on what has become known as the "hockey stick". It is based on a 1999 paper, the principal author of which was paleoclimatologist Michael Mann. Before the publication of his paper the generally accepted view of the past 1000 years was that there was a period of elevated temperatures known as the Medieval Warm Period, which was followed by the Little Ice Age, and then a new period of global warming.



Mann's hockey stick eliminated the Medieval Warm Period, flattening the fluctuations in global temperatures over most of the past millennium (the handle of the hockey stick). until we get to the 20th century, where the rate of global warming takes off in a sharp upward surge (the blade of the hockey stick). This is the basis for the IPCC claim, now widely accepted, that the 20<sup>th</sup> century was the warmest in the past 1000 years, the 1990s were the warmest decade in the past millennium, and 1998 was the warmest year in the past 1000 years. Scary stuff!

Two Canadians, Steve McIntyre, an engineer, and Ross McKittrick, an economist, challenged Mann's work in 2003. They argued his technique produced hockey sticks from just about any set of data. Mann responded in a notably less than scientific manner by withholding adverse statistical results and important data, and discouraging the publication of criticism of his work.

A Wall Street Journal report of the controversy last year attracted the attention of the US House Committee on Energy and Commerce. It wrote to Mann and his co-authors, as well as to the IPCC, demanding relevant information and then approached independent US statisticians for advice on assessing the data provided. Leading US statistician Edward Wegman, of George Mason University, who is chairman of the US National Academy of Sciences committee on applied and theoretical statistics, agreed to assemble a group of statisticians to assess the Mann data. Their report was released last Friday and supported McKittrick and McIntyre's criticisms of the hockey stick, finding Mann's statistical work flawed and unable to support the claims of the hottest century, decade, and year of the past millennium.

Yet the IPCC used the hockey stick in its publications, media releases, press conferences - where senior IPCC figures sat with the chart as a backdrop - and, for a time, incorporated it into the IPCC's logo. It is important to understand that this is a debate about the use of statistics. Mann did no original scientific work, using available data and manipulating it in a new way.

However, it destroys the idea of an alarming escalation in global temperatures and, as the Wall Street Journal remarked on Friday, brings the present temperature rise within the range of natural historical variation.

There remains plenty of room for argument about the projections of future temperature rises and their implications, based on what are still primitive climate change models. But there is no escaping the damage done to the IPCC's reputation. It has relied heavily on a badly flawed piece of work, produced by what Wegman discovered was a small, insular group of paleoclimatologists who incestuously peer review, reinforce and defend each others' work.

Significantly, former commonwealth statistician Ian Castles and his colleague David Henderson, former head of the Organisation for Economic Co-operation and Development's economics department, have also exposed statistical and analytical flaws in the economic scenarios underlying the IPCC's climate change projections. As with McIntyre and McKittrick's criticism of the hockey stick, the IPCC establishment initially tried to ignore, then discredit, their work.

However, last year a House of Lords committee looking at the economics of climate change praised their work. The Lords committee also expressed concerns that the IPCC was an increasingly politicised body that tried to suppress dissent. It

warned of a risk it was becoming a knowledge monopoly, "in some respects unwilling to listen to those who do not pursue the consensus line".

In an article last week in Canadian newspaper the National Post, McIntyre and McKittrick say the IPCC's lead author, who selected Mann's hockey stick for prominent display, was none other than Mann himself. They quote eminent US climate science academic Kurt Cuffey as saying the IPCC's use of the hockey stick sent "a very misleading message".

They ask a pertinent question. If the IPCC process isn't fixed, and there is no evidence the IPCC intends to do anything about it, how do we know it won't send out another very misleading message in its upcoming Fourth Assessment report?

### Item 1-5

"So the bottom line is this: When it comes to future climate, no one knows what they're talking about. No-one. Not the IPCC nor its scientists, not the U.S. National Academy of Sciences, not the NRDC or National Geographic, not the U.S. Congressional House leadership, not me, not you, and certainly not Mr. Albert Gore," Frank wrote in the May issue of *Skeptic Magazine*.

"But there is no falsifiable scientific basis whatever to assert this warming is caused by human-produced greenhouse gasses because current physical theory is too grossly inadequate to establish any cause at all. Nevertheless, those who advocate extreme policies to reduce carbon dioxide emissions inevitably base their case on GCM projections, which somehow become real predictions in publicity releases," Frank explained.

"General Circulation Models are so terribly unreliable that there is no objectively falsifiable reason to suppose any of the current warming trend is due to human-produced CO<sub>2</sub>, or that this CO<sub>2</sub> will detectably warm the climate at all. Therefore, even if extreme events do develop because of a warming climate, there is no scientifically valid reason to attribute the cause to human-produced CO<sub>2</sub>. In the chaos of Earth's climate, there may be no discernible cause for warming," Frank added. "Many excellent scientists have explained all this in powerful works written to defuse the CO<sub>2</sub> panic, but the choir sings seductively and few righteous believers seem willing to entertain disproofs," Frank concluded.

**Chemist, Dr. Patrick Frank, 2008**

### Item 1-6

**Dr. Vladimir Shaidurov** presented his views on climate change in 2006. According to a March 13, 2006 press release from the University of Leicester in the UK, "A new theory to explain global warming was revealed at a meeting at the University of Leicester (UK) and is being considered for publication in the journal *Science First Hand*."

The controversial theory has nothing to do with burning fossil fuels and atmospheric carbon dioxide levels. According to Vladimir Shaidurov of the Russian Academy of Sciences, the apparent rise in average global temperature recorded by scientists over the last hundred years or so could be due to atmospheric changes that are not connected to human emissions of carbon dioxide from the burning of natural gas and oil. Shaidurov explained how changes in the amount of ice crystals at high altitude could damage the layer of thin, high altitude clouds found in the mesosphere that reduce the amount of warming solar radiation reaching the earth's surface."

The release continued, "The most potent greenhouse gas is water, explains Shaidurov, and it is this compound on which his study focuses. According to Shaidurov, only small changes in the atmospheric levels of water, in the form of vapour and ice crystals can contribute to significant changes to the temperature of the earth's surface, which far outweighs the effects of carbon dioxide and other gases released by human activities. Just a rise of 1% of water vapour could raise the global average temperature of Earth's surface more than 4 degrees Celsius."

The release concluded, "Shaidurov has concluded that only an enormous natural phenomenon, such as an asteroid or comet impact or airburst, could seriously disturb atmospheric water levels, destroying persistent so-called 'silver', or noctilucent, clouds composed of ice crystals in the high altitude mesosphere (50 to 85km)."

**Physicist and Mathematician, Dr. Vladimir Shaidurov, of the Russian Academy of Sciences.**

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### **Item 1-7**

Jonathan Lowe expressed climate skepticism. "If CO2 emissions were the major cause of global warming then we would see constant increases in temperature across the day and night as the CO2 blanket keeps the heat inside our atmosphere. Scientific research has shown that this has occurred with both minimum and maximum temperature increasing. We have pointed out time and time again how minimum temperatures are not a good indication of night time warming, especially when it rarely occurs at night," Lowe wrote of Australian temperatures on his Gust of Hot Air blog on November 7, 2007.

"If CO2 was the major cause of global warming then we would see no significant difference in rate of change of temperature anomalies, in other words, all temperatures should increase equally. If the sun was a major cause of global warming then we would see no or limited changes at night, an increase in the rate of change approaching the middle of the day, and then a decreasing rate of change of temperature anomalies when the sun starts to lose its daytime strength," he explained. "So what do we find when looking at the data?" he asked. "The data points heavily towards sun induced global warming," he concluded.



**Australian Scientist Jonathan Lowe, who specializes in statistical analysis of climate change and holds a masters in science.**

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### **Item 1-8**

Dr. A.T.J. de Laat commented in the February 2007 Bulletin of the American Meteorological Society. "The line of reasoning here is that natural factors alone cannot explain the observed twentieth-century temperature variations, while including greenhouse gases does. The logical fallacy is the 'fallacy of false dilemma/either-or fallacy,' that is, the number of alternatives are (un)intentionally restricted, thereby omitting relevant alternatives from consideration (Haskins 2006)," de Laat wrote.

"That global twentieth-century temperature variations can be explained by using a simple model merely points to a certain consistency between this model or climate model simulations and observations. Furthermore, the fact that the late-twentieth-century warming is unexplained by two factors (solar variations and aerosols) and can be explained by including a third factor (greenhouse gases) does not prove that greenhouse gases are the cause; it just points to a missing process in this model," he explained. "In fact, this whole line of reasoning does not prove the existence of global warming; it is merely consistent with it.

As an example, it is still debated whether or not land surface temperature changes during the twentieth century are affected by anthropogenic non-greenhouse gas processes and whether or not these processes affect surface temperatures on a global scale (Christy et al. 2006; Kalnay et al. 2006; de Laat and Maurellis 2006). There is a risk associated with this line of reasoning in that it suggests that understanding temperature variations of the climate system as a whole is very simple and completely understood, all one has to consider is the amount of incoming and outgoing radiation by changes in atmospheric absorbers and reflectors," he added.

"Notwithstanding the fact that temperature is not a conserved quantity in any physical system, and thus is not the best metric to study energy within the climate system, it also suggests that other processes and nonlinear behavior of the climate system are either nonexistent or do not affect (decadal and global) temperature variations. Presenting climate science this way oversimplifies the complexity of the climate system and possibly overstates our current understanding," he concluded.

**Dr. A.T.J. de Laat, specializes in atmospheric composition and climate research at the Royal Netherlands Meteorological Institute.**

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### **Item 10**

Dr. Jeffrey A. Glassman wrote an October 24, 2006 paper entitled "The Acquittal of Carbon Dioxide":

In the abstract of the paper appearing in *Rocket Scientist's Journal*, Glassman wrote, "Carbon dioxide in the atmosphere is the product of oceanic respiration due to the well known but under-appreciated solubility pump. Carbon dioxide rises out of warm ocean waters where it is added to the atmosphere. There it is mixed with residual and accidental CO<sub>2</sub>, and circulated, to be absorbed into the sink of the cold ocean waters."

Glassman further explained, "Next the thermohaline circulation carries the CO<sub>2</sub> rich sea water deep into the ocean. A millennium later it appears at the surface in warm waters, saturated by lower pressure and higher temperature, to be exhausted back into the atmosphere." "Notwithstanding that carbon dioxide is a greenhouse gas, atmospheric carbon dioxide has neither caused nor amplified global temperature increases. Increased carbon dioxide has been an effect of global warming, not a cause."

Technically, carbon dioxide is a lagging proxy for ocean temperatures. When global temperature, and along with it, ocean temperature rises, the physics of solubility causes atmospheric CO<sub>2</sub> to increase. If increases in carbon dioxide, or any other greenhouse gas, could have in turn raised global temperatures, the positive feedback would have been catastrophic. While the conditions for such a catastrophe were present in the Vostok record from natural causes, the runaway event did not occur. Carbon dioxide does not accumulate in the atmosphere," he wrote.

### **Applied Physicist and Engineer Dr. Jeffrey A. Glassman**

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#### **Item 1-10**

Dr. Robert H. Essenhigh dismissed climate fears. "Man's addition to the carbon-dioxide flux in the atmosphere, by fossil-fuel combustion, is essentially irrelevant," Essenhigh wrote on June 13, 2005.

"Of the two main reasons, the first is that nature does a far bigger job in the carbon-dioxide supply rate, and the second is that carbon dioxide is secondary to water as a so-called greenhouse gas. So shouldn't we first try to control water? And behind that again is the alternative warming concept, most generally known as the Arctic Ocean Model, which is considered by many to be the real driver for the temperature oscillations and has been for the last million years or so. So, is the carbon dioxide driving the temperature, as so many people seem to believe? Or, is the temperature driving the carbon dioxide? If it's the latter, then what's the problem with carbon dioxide emissions?" Essenhigh wrote.

According to the Intergovernmental Panel on Climate Change - and can it be wrong? - nature's rate of carbon supply to the atmosphere (carried as carbon dioxide) and back out again is about 150 gigatons per year. About 60 gigatons per year come from and go back to vegetation, and 90 gigatons per year are from and to the sea. And from man? That's about 5 or 6 or possibly 7 gigatons per year, which is

about the size of the noise in the nature data and is essentially trivial by comparison," he added.

"And, of the two gases in the atmosphere that do most of the warming, carbon dioxide, as noted, is secondary. Water is responsible for roughly 80 percent to 85 percent of the absorption and re-radiation, and carbon dioxide is responsible for (most of) the balance of 15 percent to 20 percent," he added.

**Dr. Robert H. Essenhigh, a Bailey Professor of Energy Conversion in the department of Mechanical Engineering at Ohio State University.**

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#### **Item 1-11**

Dr. Brian G. Valentine said;

"Human development, associated with the continual advance of civilization on the Earth, has always influenced the local weather; and the degree of influence on local weather is probably proportional to the magnitude of the changes in the Earth's topography that have resulted from continual human advances," Valentine wrote to EPW on May 17, 2007.

"There is no evidence that any of these changes in local weather have ever resulted in a change to the global climate. My own research has convinced me that excepting for one situation, there have NEVER been ANY influences that have changed the global climate - not solar, not stellar, not variations in Earth's spin on its axis - nothing - that can be demonstrated beyond reasonable doubt, for which equally valid evidence is available that contradicts the assumption of global climate change," Valentine explained.

"This single exception is the known variation of eccentricity of the Earth's orbit about the Sun. This is the periodic variation of distance from Earth to the Sun that changes the distance from the Earth to the Sun within Earth's seasons, and occurs within tens of thousands of year epochs," he concluded. *(Note: Valentine is expressing his personal views.)*

**Chemical Scientist Dr. Brian G. Valentine of the U.S. Department of Energy and professor at University of Maryland, has studied computational fluid dynamics and modeling of complex systems.**

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#### **Item 1-12**

Dr. Augie Auer of the New Zealand Climate Science Coalition dismissed climate fears:

"People should not allow themselves to be deluded by the computer-modeled speculation with which they are bombarded in the news media these days.

Measurements show mankind's contribution to the greenhouse effect through carbon dioxide emissions has been somewhere between miniscule to indiscernible," said Professor Auer in an April 5, 2007 article. "In any case, records tell us that increases in the level of carbon dioxide in the atmosphere have followed, not led, natural cyclical increases in Earth's temperature," Prof. Auer added.

Auer took to task doomsday computer predictions. "Most of these climate predictions or models, they are about a half a step ahead of PlayStation 3 (video game). They're really not justified in what they are saying. Many of the assumptions going into [the models] are simply not right," Auer said in May 2007 in a New Zealand radio interview shortly before his death in June 10, 2007.

Auer also declared man-made climate fears unfounded. "We're all going to survive this," Auer said in a May 19, 2007 article in the Timaru Herald. "If we didn't have the greenhouse effect the planet would be at minus 18 deg C but because we do have the greenhouse effect it is plus 15 deg C, all the time," he explained. "We couldn't do it (change the climate) even if we wanted to because water vapour dominates," he concluded.

**Atmospheric scientist Dr. Augie Auer of the New Zealand Climate Science Coalition, former professor at the University of Wyoming and former MetService chief meteorologist.**

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### **Item 1-13**

Meteorologist Jim Ott expressed climate skepticism in 2007 of climate fears. "There is no question that the past 25 years have been warmer than average. There is also no question that background levels of carbon dioxide, or CO<sub>2</sub>, in the atmosphere have shown a slow but steady increase since the late 1950s, when measurements were begun in a remote spot in the Hawaiian Islands. That is where the certainty ends and the questions really begin," Ott, who hold a masters of science, wrote on February 10, 2007.

"Evidence buried deeper in the Earth suggests that there may have been four major glaciations in North America, with each period of cooling followed by warming. Theories abound about why the climate changed enough to form the glaciers and then to melt them, but the fact is no one knows for sure what caused those climate changes. One thing we do know: It wasn't anything that humans did. And if we really don't know the answers, isn't it possible that the same factors that caused those climate changes could become active again?" he wrote.

"More questions: If CO<sub>2</sub> levels have been increasing since the Industrial Revolution in the 19th century, as many scientists surmise, why have we seen some major changes in weather patterns over that time period that don't fit the global warming theory? For example, why were the 1930s much warmer than the 1960s? And why were some of our most severe winters in the late 1970s and early 1980s? Weren't CO<sub>2</sub> levels rising during those times?"

Obviously, other factors besides man have an impact on climate," he added. "If we conclude that from now on only human activity can affect climate change, we are ignoring factors that we don't understand. Could we be in for some unexpected surprises if we assume that the Earth's climate will only get warmer in the coming decades?" he wrote. "Assuming that 25 years of warmer-than-average weather constitutes a long-term, irreversible climate change ignores other periods of anomalous weather that were only temporary. Assuming that human activity is the only factor that will affect the Earth's climate, and that what is happening now will continue in the future, leaves some big questions unanswered," he concluded.

**Meteorologist Jim Ott, a member of the American Meteorological Society and a former lecturer at University of Wisconsin.**

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#### **Item 1-14**

Dr. Michael J. Economides rejected climate fears. "After a desperate literature search over four years, involving as many as 30 engineering and science graduate students, we have yet to come up with one professional paper that shows a quantitative causality between increased carbon dioxide and enhanced global temperature,"

Economides, who is a member of the Russian Academy of Natural Sciences, wrote in an April 9, 2007 article in *Energy Tribune*. "This means there is not one paper in the literature of heat transfer or thermodynamics that shows the physics of global warming in a quantified way, using well-known laws or principles. There are, however, many arm-waving and postulating writings, often in the popular press, all referencing the other 'hundreds of papers,'" Economides explained.

**Dr. Michael J. Economides, Professor of Chemical and Biomolecular Engineering at Cullen College of Engineering at University of Houston and the author of numerous books and over 50 scientific studies.**

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#### **Item 1-15**

Anthony Watts has examined 460 of the 1221 official climatic weather stations in the 48 lower states, and discovered multiple irregularities that are causing temperature data to skew higher than it should. Watts, who publishes a website devoted to investigating surface stations, believes his research casts doubt on NOAA's current and historical temperature data reports.

"I believe we will be able to demonstrate that some of the global warming increase is not from CO2 but from localized changes in the temperature-measurement environment," Watts told the *Pittsburgh Tribune-Review* on June 17, 2007. Watts examined temperature stations that the National Oceanic &



Atmospheric Administration's (NOAA) uses as part of its National Climatic Data Center. The NCDC has about 1,221 mostly rural weather observation stations around the country. Watts, who founded the web site [surfacestations.org](http://surfacestations.org), has made it his mission to quality check weather stations to see if the data is being accurately captured.

Watts noted one such weather station in California was "surrounded by asphalt and concrete, it's also within 10 feet of buildings, and within 8 feet of a large metal cell tower that could be felt reflecting sunlight/heat. And worst of all, air conditioning units on the cell tower electronics buildings vent warm air within 10 feet of the sensor." Watts concluded, "I can tell you with certainty, the temperature data from this station is useless." Watt's extensive data research was noted by Meteorologist Joseph Conklin on August 10, 2007: "The (U.S.) National Climate Data Center (NCDC) is in the middle of a scandal. Their global observing network, the heart and soul of surface weather measurement, is a disaster. Urbanization has placed many sites in unsuitable locations - on hot black asphalt, next to trash burn barrels, beside heat exhaust vents, even attached to hot chimneys and above outdoor grills! The data and approach taken by many global warming alarmists is seriously flawed. If the global data were properly adjusted for urbanization and station siting, and land use change issues were addressed, what would emerge is a cyclical pattern of rises and falls."

**Anthony Watts, former meteorologist, Redding, California**

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#### **Item 1-16**

Smith expressed climate skepticism in 2007. "There is enough doubt to scuttle any idea that man is causing [global warming]," Smith wrote to EPW on May 27, 2007. "The earth is a giant swamp cooler, with increased warming (mostly in the oceans) leading to increased evaporation, which ultimately leads to more clouds forming somewhere, and hence less solar radiation reaching the ground so it cools down again. So long as we have oceans, we can't change the temperature of the earth, either up or down, even if we wanted to," Smith, who received the Distinguished Alumni Award from the University of Auckland, explained.

"The so-called global mean temperature is reputed to be 58F versus about 57 F a century ago. So what value would you like it to be and why?" Smith added. In 2005, Smith also detailed his skepticism in a January 2005 *Physics Today* article. "The largest single repository of CO<sub>2</sub> on Earth is the oceans, and that the solubility of CO<sub>2</sub> in water drops as the water temperature increases. So clearly a mechanism exists whereby increasing ocean water temperatures (which is where most of the solar energy goes) causes increased out-gassing of CO<sub>2</sub> into the atmosphere. Furthermore, Arctic permafrost zones revert to marshy peat bogs when the Arctic warms, and then bacterial activity takes hold and converts decaying ancient vegetation into atmospheric CO<sub>2</sub>. Both of those processes are happening right now."

"The Russian Vostok ice cores going back 420 000 years and the Dome-C ice cores going back 730 000 years show that the Antarctic ice sheet has not melted during that time frame, even in the warmest interglacial periods. The ice cores also show periods of rapid global warming followed by rapidly increasing atmospheric CO<sub>2</sub>," he added.

**Physicist George E. Smith, lecturer at University of Auckland, member of the American Association for the Advancement of Science and the American Institute of Physics.**

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#### **Item 1-17**

Correa wrote in a recent paper entitled "Global Warming: An Official Pseudoscience." about "mass-hysterias as the pseudoscientific fad of 'global warming.'" "In the 70s, in the wake of the atmospheric cooling experienced between 1945-1947 and 1972, there was a passing fad of 'global' cooling, supposedly buttressed by study of the fossil record and ice samples, which had 'established' the existence of cycles of minor ice-ages (see reference to the Milankovitch model).

At that time, the fear was that the earth was just turning the corner into a new ice-age," Correa wrote. "Just like seawater shows oscillations in temperature or content of sensible heat, the atmosphere, too, is subject to long-term oscillations in energy content, including sensible heat and its measure by temperature. In fact, the evidence indicates that the atmosphere undergoes regular periods of cooling and heating, both near the ground and all the way up, through the troposphere, to the tropopause and the stratosphere.

The scientific evidence collected over the past 50 years suggests that there are periods of cooling and warming superimposed on cycles of various scales, and that these variations are connected, in ways not yet understood, to solar periodicities, geothermal energy, varying atmospheric electricity and latent heat, and varying cloud cover and cloud composition," he added.

**Biologist and Biophysicist Dr. Paulo N. Correa.**

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#### **Item 1-18**

William R. Kininmonth rejected man-made climate fears and asserted warming is natural. "How often does it need to be said that CO<sub>2</sub> is a colourless, odourless gas whose only detrimental characteristic is to form a very weak acid (carbonic acid) when dissolved in water. On the other hand, CO<sub>2</sub> is an essential component of photosynthesis: Increased CO<sub>2</sub> in the atmosphere is an effective fertiliser of the biosphere as shown by horticulturalists artificially increasing the CO<sub>2</sub> content within glasshouses. CO<sub>2</sub> is NOT a pollutant," Kininmonth said in a May 30, 2007 article.

"There is every reason to believe that increasing CO<sub>2</sub> in the atmosphere will have no significant impact on the climate system. The greatest impact of atmospheric CO<sub>2</sub> on the earth's radiation budget was the first 20 ppmv. After this concentration the source of IR radiation to space from the active CO<sub>2</sub> radiation bands was in the stratosphere, where temperature does not change as the emanation goes to higher and higher altitudes with increasing concentration," Kininmonth explained.

"There is every reason to believe that earth is near an upper temperature limit given its present distribution of land and ocean and the strength of solar irradiance. The earth's surface is heated by way of solar radiation and back IR radiation emanating from clouds, greenhouse gases and aerosols; it is cooled by conduction, evaporation and IR emission. Solar radiation and conduction are essentially constant and the earth's surface temperature will vary according to increasing back IR radiation (radiation forcing from CO<sub>2</sub> and water vapour) being offset by surface IR emission and latent heat of evaporation," he added.

"AGW (anthropogenic global warming) is a fiction and a very dangerous fiction," he concluded. On June 1, 2007, Kininmonth wrote, "Not only is it speculative to claim that humans can in any way influence the course of climate but it is arrogant to suggest that today's climate is getting worse than it has been in the past. For example, who would prefer to return to pre-industrial conditions as they were during the Little Ice Age? Frost Fairs were common on many rivers of Europe and the London diarist John Evelyn records that in 1683-84 the Thames River froze from late December to early February. Conditions were terrible with men and cattle perishing and the seas locked with ice such that no vessels could stir out or come in. The fowls, fish and exotic plants and greens were universally perishing. Food and fuel were exceptionally dear and coal smoke hung so thickly that one could scarcely see across the street and one could scarcely breathe."

**Atmospheric scientist William R. Kininmonth, who headed Australia's National Climate Centre from 1986 to 1998 and coordinated the scientific and technical review of the 1997-98 El Niño event for the World Meteorological Organization and its input to the United Nations Task Force on El Niño.**

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### Item 1-19

Geologist David Archibald shows that solar cycles are more important than CO<sub>2</sub> levels. In a May 2007 updated paper, "The Past and Future of Climate" Archibald predicts an "imminent cooling" by 2030 based on solar cycles states.

"Most rural temperature records in the United States were set in the 1930s and 1940s. Greenland had its highest recorded temperatures in the 1930s and has been cooler since," Archibald wrote. "The 1.5° temperature decline from the late 1950s to the mid-70s was due to a weak solar cycle 20 after a strong solar cycle 19," Archibald explains. Archibald also noted that the Medieval Warm Period was originally recognized by the UN IPCC to have been warmer than current

temperatures, but it "become inconvenient to the IPCC, so they haven't mentioned it since." Archibald asserted,

"Anthropogenic warming is real, it is also miniscule." He explained, "Since the beginning of the Industrial Revolution, increased atmospheric carbon dioxide has increased the temperature of the atmosphere by 0.1°. There is no correlation in the geologic record between atmospheric carbon dioxide and global temperature. The Earth went into an ice age 450 million years ago despite a level of atmospheric carbon dioxide that is **ten times** what it is today," Archibald wrote. "There are no deleterious consequences of higher atmospheric carbon dioxide levels. Higher atmospheric carbon dioxide levels are wholly beneficial," he added. "Anthropogenic Global Warming is so miniscule that the effect cannot be measured from year to year, and even from generation to generation," he concluded.

**Geologist David Archibald of Summa Development Limited in Australia wrote a scientific paper titled "Solar Cycles 24 and 25 and Predicted Climate Response" in *Energy and Environment* in 2006.**

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#### **Item 1-20**

Dr. Martin Hertzberg distrusts climate computer models and believes the models do not adequately account for water in the atmosphere. According to the May 14, 2007 issue of *The Nation* magazine, Hertzberg said water in the form of oceans, snow, ice cover, clouds and vapor "is overwhelming in the radiative and energy balance between the Earth and the sun. Carbon dioxide and the greenhouse gases are, by comparison, the equivalent of a few farts in a hurricane."

The article explained Hertzberg's views: "Water covers 71 percent of Earth's surface. Compared with the atmosphere, there's 100 times more CO<sub>2</sub> in the oceans, dissolved as carbonate. As the post-glacial thaw progresses the oceans warm up, and some of the dissolved carbon emits into the atmosphere, like fizz from soda." Hertzberg is quoted saying, "The greenhouse global warming theory has it ass backwards. It is the warming of the Earth that is causing the increase of carbon dioxide and not the reverse."

The article noted, "In vivid confirmation of that conclusion, several new papers show that for the last 750,000 years, CO<sub>2</sub> changes have always lagged behind global temperatures by 800 to 2,600 years."

**Dr. Martin Hertzberg, a retired meteorologist with a PhD in physical chemistry.**

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#### **Item 2-21**

Dr. Habibullo Abdussamatov pointed to global warming on Mars and the melting ice cap on the red planet as more evidence that the sun was a key driver of climate change. "Mars has global warming, but without a greenhouse and without

the participation of Martians," Abdussamatov said in an interview on January 26, 2007 with Canada's National Post.

"These parallel global warmings -- observed simultaneously on Mars and on Earth -- can only be a straight-line consequence of the effect of the one same factor: a long-time change in solar irradiance," Abdussamatov explained. "It is no secret that increased solar irradiance warms Earth's oceans, which then triggers the emission of large amounts of carbon dioxide into the atmosphere. So the common view that man's industrial activity is a deciding factor in global warming has emerged from a misinterpretation of cause and effect relations," Abdussamatov added.

A predicted decline in solar irradiance is going to lead to global cooling by 2015 and "will inevitably lead to a deep freeze around 2055-60," according to Abdussamatov. Abdussamatov was also featured in a February 28, 2007 article in National Geographic titled "Mars Melt Hints at Solar, Not Human, Cause for Warming, Scientist Says," where he reiterated his scientific findings that "man-made greenhouse warming has made a small contribution to the warming seen on Earth in recent years, but it cannot compete with the increase in solar irradiance."

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**Dr. Habibullo Abdussamatov, head of Space Research for the Pulkovo Observatory in Russia.**

#### **Item 1-22**

Ernst-Georg Beck found levels of atmospheric CO<sub>2</sub> levels were not measured correctly possibly due to the fact that they measurements did not fit with hypothesis of man-made global warming. The abstract to the paper published in Energy and Environment reads in part, "More than 90,000 accurate chemical analyses of CO<sub>2</sub> in air since 1812 are summarized.

The historic chemical data reveal that changes in CO<sub>2</sub> track changes in temperature, and therefore climate in contrast to the simple, monotonically increasing CO<sub>2</sub> trend depicted in the post-1990 literature on climate-change. Since 1812, the CO<sub>2</sub> concentration in northern hemispheric air has fluctuated exhibiting three high level maxima around 1825, 1857 and 1942 the latter showing more than 400 ppm."

The paper concluded: "Most authors and sources have summarized the historical CO<sub>2</sub> determinations by chemical methods incorrectly and promulgated the unjustifiable view that historical methods of analysis were unreliable and produced poor quality results.

**German scientist Ernst-Georg Beck, a biologist, authored a February 2007 paper titled 180 Years of Atmospheric CO<sub>2</sub> Analysis by Chemical Methods.**

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#### **Item 1-23**



Dr. Willem de Lange has also declared himself skeptical of man-made climate fears. "The Greenhouse Effect is a climate feedback mechanism - it modifies climate change but does not drive it," de Lange wrote to EPW on December 18, 2007.

"Earth's climate is a complex system that is continually changing at different temporal and spatial scales - it may change abruptly, or gradually and affect regions or the whole globe. The primary driver of Earth's Climate at Human time scales is the quantity and quality of Solar radiation - the total amount, and the distribution of radiation across different wavelengths," de Lange explained.

"Humans affect climate in a variety of ways - Human impacts are greatest at the micro-scale (your office), and diminish at larger spatial and temporal scales (impact at a global scale over the last 100 years is small - as far as I can tell it tends to disappear into the measurement errors). Emissions of greenhouse gases are a minor contribution to climate feedback as the Greenhouse Effect operates between physically constrained limits," he wrote.

"Catastrophic climate changes in the next century are unlikely based on observational data," he concluded.

**Oceanographer Dr. Willem de Lange of the department of Earth and Ocean Sciences at the University of Waikato in New Zealand.**