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***While scientists continue to research what is really driving climate change, a whole industry has grown up around this issue. The size of the industry and its vocal support by mass media, political and environmental organizations is a colossus of immense proportions. It is, however, a colossus built on sand.***

**Note:** Underlined phrases in the following piece are active Web links.

## **Are climate change investors living in a fool's paradise?**

**Key science risks being ignored while financial stakes rise higher and higher**

By: Tom Harris

fool's par-a-dise: "a state of happiness that is temporary and insubstantial because it is based on illusions or unrealistic hopes" - Encarta® World English Dictionary [North American Edition] © & (P)2007 Microsoft Corporation. All rights reserved. Developed for Microsoft by Bloomsbury Publishing Plc.

I am struck by the diversity of risk analyses being carried out by investors in today's climate change market place. Whether it's 'carbon'\* market conferences and publications, 'ethical investments', insurance company projects or the activities of financial, legal and engineering institutions, it seems at first glance that they have it all covered. Many financial, political, procedural, legal and technical issues are addressed. Anything that might pose a risk to the market and the hundreds of billions of dollars being poured into one of the greatest enterprises in human history – 'fighting' global climate change – appears to be examined.

It looks on the surface like an investment and legislative dream come true, combining the public's desire to 'save the planet' and compensate for recent stock market losses with helping corporations fulfill their 'corporate social responsibilities'. It even satisfies the natural desire of politicians to be seen to be leading their nations to safety and a supposedly green, prosperous future.

On closer examination however, one notices something remarkable. Practically without exception, all of these organizations, many of them among the most successful and respected in the world, completely ignore the risk that the very foundation of all of these activities might be shown to be faulty. Like many of those who were caught off guard by the subprime mortgage crisis, those involved in the rapidly expanding climate change industry are not asking the most fundamental of questions:

- What if the science that supposedly backs concerns over carbon dioxide (CO<sub>2</sub>) emissions cannot be justified?

And, even more important to the investment, legal and political community:

- What if the public at large come to believe that the whole thing is a gigantic scam? What if it becomes common knowledge that we can't stop climate change and all of the great and

glorious plans to restrict CO<sub>2</sub> and other greenhouse gas emissions are seen as a complete waste?

In these tough economic times, government regulations such as cap and trade would then be dropped like a hot potato. 'Carbon' credits, as well as the massive investments into reducing CO<sub>2</sub> emissions, would quickly become worthless. Careers, companies and investors would be ruined, governments disgraced and the environmental movement set back decades as their primary crusade over the last ten years is exposed as hopelessly misguided, or even worse, an enormous fraud.

Sound improbable? I wouldn't bet on it.

Behind the scenes in the climate science community, recent planetary cooling and the continuing advance of this very new field has triggered a crucially important development - the so-called 'settled' science of climate change has entered a new phase referred to as 'negative discovery'. The more we learn, the more we come to realize how little we actually understand about this, the most complex science ever tackled. What we thought we knew with confidence only a few years ago is coming to be seen by many scientists as completely wrong, or at best highly debatable. In virtually every area cited as evidence of human-caused global climate change – temperatures and CO<sub>2</sub> levels, ice caps, storm frequency, sea level rise, even polar bear populations (which have been rising for decades) – scientists are discovering strong evidence that what we are now experiencing is mostly due to natural cycles. At the same time, researchers are developing elegant and convincing new theories that fit the observational data far better than the greenhouse gas-focused computer models that have driven climate concerns to date. President-elect Barack Obama may actually believe that "The science is beyond dispute and the facts are clear", as he [told](#) delegates to the UN climate conference in Poland, but climate scientists know that the whole field is in intense dispute and very few of the key parameters driving climate are properly understood at all.

The impact of clouds is a stunning example of this uncertainty. The calculated net impact of clouds has changed over the past few years from an overall warming effect to a net cooling influence, the magnitude of which is still under serious debate. It is not that clouds have suddenly changed their behavior, of course; it is our *understanding* of clouds that is evolving. For example, see the scientific paper [here](#) where Professor Minghua Zhang, Director of the Institute for Terrestrial and Planetary Atmospheres of Stony Brook University, New York writes:

*"Several satellite and surface measurement programs were specifically established to narrow model uncertainties of cloud feedbacks. After about 15 years of intensive research, however, this issue is still evasive."*

And remember, clouds have far more influence on climate than do human CO<sub>2</sub> emissions.

Some scientists even maintain that increasing CO<sub>2</sub> levels may actually result in *lower* global temperatures. For example, a scientific paper, "Greenhouse gases and greenhouse effect", just published in the leading scientific journal *Environmental Geology* by University of Southern California (Los Angeles) Professor George V. Chilingar et al (read paper [here](#)), concludes:

*"rising concentration of CO<sub>2</sub> should result in the cooling of climate."*

Furthermore, the basic premise that worldwide CO<sub>2</sub> levels are higher now than in pre-industrial times is in dispute in responsible scientific circles (Canadian climatologist Dr. Tim Ball discusses these findings [here](#)).

No one knows whether or not such opinions will ultimately prove to be correct, but of one thing there is no doubt – the science of climate change is completely *unsettled* once you get away from the glare of the spotlights at highly political UN, governmental and climate activist meetings.

While most main stream media and politicians have yet to awaken to this reality, many in the public have already caught on and recent polls (see [here](#), [here](#) and [here](#), for example) show a dwindling enthusiasm to make the sacrifices necessary to have any significant impact on the emissions of so-called 'global warming gases'. Most climate campaigners hope the public don't notice that the science is changing dramatically and blame lessening public support for global warming projects and policies on a poor economy or a lack of understanding. These issues play a role, but the fact that the vast majority of the investment and legal community are completely ignoring the risk that the foundations of climate concerns come to be seen as rapidly unraveling is an astonishing blindness that threatens to catch many over exposed to what are in fact exceptionally risky ventures.

To give readers a taste of the sea state change that is going on in the science, let's take a quick look at just one of the fundamental misunderstandings in the field – the allegedly unusual temperature rise of the 20<sup>th</sup> century and the hypothesized connection to CO<sub>2</sub> levels.

Most people do not realize that Earthly temperatures have been appreciably higher than today many times in the past, and also lower. As recently as 6,000 years ago, it was as much as 3 degrees Celsius warmer than now. Eleven thousand five hundred years ago, while the world was coming out of the thousand-year-long "Younger Dryas" cold episode, temperatures rose about 5° C in a single decade – that is nearly *100 times* faster than the 20<sup>th</sup> century's 0.6° C warming that climate campaigners believe is a precursor to catastrophic global warming.

So what caused the supposed warming (the magnitude of which remains in dispute) of the past century? It appears to have been due mostly to changes in the output of the sun. Scientists are consistently finding excellent correlations between the regular fluctuations in the brightness of the sun and our planet's climate. This is not unexpected. After all, the sun and the stars are the ultimate source of all energy on Earth.

But climate campaigners and some scientists counter that the variations in direct solar energy input to our planet is not sufficient to account for the observed warming of the 20<sup>th</sup> century. That is correct, but as explained by ICSC Chair Professor Tim Patterson, a leading paleoclimatologist at Carleton University in Ottawa, Canada, it is *secondary* solar effects that account for most of the difference. Here he describes one of these effects:

*"In a series of groundbreaking scientific papers starting in 2002, Veizer, Shaviv, Carslaw, and Svensmark have collectively demonstrated that as the output of the sun varies, and with it, our sun's protective solar wind, varying amounts of galactic cosmic rays from deep space are able to enter our solar system and penetrate Earth's atmosphere. Cosmic rays cause cloud formation, which overall, has a cooling effect. When the sun's energy output is greater the Earth warms slightly due to direct solar heating. Additionally, the stronger solar wind generated during "high sun" periods blocks many of the cosmic rays from entering our atmosphere. Cloud cover decreases and Earth warms still more.*

*The opposite occurs when the sun is less bright. More cosmic rays get through to Earth's atmosphere, more clouds form, and the planet cools more than would otherwise be the case due to direct solar effects alone. This is what happened from the middle of the 17th century into the early 18th century, when the solar energy input to our atmosphere was at a minimum and the planet was stuck in the Little Ice Age.*

*These, and other new findings, suggest that changes in the output of the sun have caused most recent climate change. By comparison, variations in carbon dioxide, the gas most targeted by national climate change campaigns, have shown poor correlation with our planet's climate on long, medium and even short time scales."*

Solar scientists predict that, by 2020, the sun will be starting into its weakest 11-year 'Schwabe' solar cycle of the past two centuries, likely leading to cooler conditions on Earth. Beginning to plan for adaptation to such a cool period, one that is projected to encompass several Schwabe cycles, as did the Little Ice Age between about 1400 and the mid-1800's, should be a priority for governments. As Dr. Ball, a former climatology professor at the University of Winnipeg, and other scientists have been explaining for years, it is global cooling, not warming, that is the major climate threat.

But what about the 2500 expert reviewers of the UN Intergovernmental Panel on Climate Change (IPCC) who supposedly agreed that human greenhouse gas emissions were responsible for most of the warming of the past fifty years?

As explained [here](#), the vast majority of these reviewers never even assessed this, the most important conclusion of the whole IPCC report, before it was published. And almost none of these scientists were then involved in approving the well-publicized 'Summary for Policymakers', the document cited by virtually all media as representing the views of thousands of scientists. Sadly, the consensus claims of the IPCC are a myth. And, of course, most of the tens of thousands of other climate scientists in the world have nothing whatsoever to do with the UN reports; indeed, many of them have expressly criticized what they view as alarmist IPCC views.

But what about the national science academies that have endorsed the catastrophic view of human-caused climate change? That too is completely misleading. Since none of these organizations are known to have polled their members, and released the results of the polls, the support of the academies is merely a political statement from their executives. J.A.L. Robertson explained in the April 28, 2006 edition of the National Post what happened in Canada, for example:

*"To claim that the IPCC-2001 assessment was "supported by the Royal Society of Canada" is stretching the truth. Prior to last year's Montreal conference, the president of the Royal Society of London, whose manner of promoting Kyoto has been criticized, drafted a resolution in favour and circulated it to other academies of science inviting co-signing. The Canadian Academy of Science is one of three academies within the Royal Society of Canada (the other are from the humanities). The president of the RSC, not a member of the Academy of Science, received the invitation. He considered it consistent with the position of the great majority of scientists, as repeatedly but erroneously claimed by Kyoto proponents, and so signed it. The resolution was not referred to the Academy of Science for comment, not even to its council or president (I learned this when, as a member of the Academy of Science, I inquired into the basis for the RSC supporting the resolution)."*

A similar episode happened in the United States and Russia concerning The Royal Society initiative. MIT's Professor Richard Lindzen, a past IPCC lead author, explained the misunderstandings of a previous National Academy of Sciences report [here](#) and concluded: "there is no consensus, unanimous or otherwise, about long-term climate trends and what causes them."

To meaningfully assert that there is a consensus in any field, we need to actually have evidence. And the best way to gather this evidence is to conduct unbiased, comprehensive worldwide polls. Since this has never been done in the climate science community, we simply do not know what, if any,

consensus exists among world climate scientists about the causes of climate change. There have been smaller polls, however. For example, in a 2003 poll conducted by environmental researchers Dennis Bray and Hans von Storch of the Institute for Coastal Research in Germany, two-thirds of more than 530 climate scientists from 27 countries surveyed did not believe that "the current state of scientific knowledge is developed well enough to allow for a reasonable assessment of the effects of greenhouse gases." About half of those polled stated that the science of climate change was not sufficiently settled to pass the issue over to policymakers.

Investment decisions often take into account scientific risk, such as when there is a possibility of a product or service being knocked off by an even better discovery or invention. Investors are also concerned about, and so assess the risks of, for example, a publically traded pharmaceutical company getting its science wrong, or an automobile manufacturer making engineering mistakes that create a death trap. The assessment of the risk of 'bad science' leading to costly legal battles is part of any professional investment decision in such cases. But, strangely, such due diligence is *not* generally being conducted with respect to the basic science underlying climate change investment decisions. So science is a looming iceberg with the potential to sink a whole industry while the participants argue about the technical details of the marketplace.

If the science of the Kyoto Protocol is wrong, as it increasingly appears to be, it is only a matter of time before this becomes common knowledge. [The recently-revealed colossal errors of judgement by the world's leading financial authorities makes it now far easier for the public to accept that massive blunders have also occurred in 'official' climate science.](#) As Abraham Lincoln said, "You can fool all of the people some of the time. You can fool some of the people all of the time. But you can't fool all of the people all of the time."

Instead of ignoring, or at times denigrating 'climate skeptics', it has now become urgent that they are *welcomed* into the discussion and regularly consulted about the evolving science, despite the political incorrectness of their opinions. It is only through a full appreciation of the relevant factors, including all reputable opinions of the science, that another collapse on the scale of the sub-prime mortgage fiasco can be avoided.

The International Climate Science Coalition welcomes the opportunity to help the financial, legal and business communities understand the immense risk they are taking by not considering the demonstrable uncertainties in the science of global warming. Ethical and liability implications aside, the only way investors can truly be afforded "early warning intelligence" about the risks in the marketplace is if their advisors are well versed in the risks themselves. As the market expands it will attract the attention of an increasingly larger public who will start to ask questions and hold analysts responsible for properly assessing and explaining the science risks associated with their investments. At the very least, investment managers must start to prepare for this inevitable, and undoubtedly intense, scrutiny.

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*\* 'Carbon markets', 'carbon trading', 'carbon footprints', etc. are all misnomers. 'Carbon' is a solid, naturally occurring, non-toxic element found in all living things. Carbon forms thousands of compounds, much more than any other element. Everything from medicines to trees to oil to our own bodies and those of all other creatures are made of carbon compounds. But pure carbon occurs in nature mainly in only three forms: graphite, diamonds and 'amorphous' (structureless) carbon such as soot. What is really being addressed when discussing 'carbon markets', etc. is one specific compound of carbon, namely carbon dioxide (CO<sub>2</sub>), an invisible, odourless gas crucial for plant photosynthesis and so all life. Ignoring the oxygen atoms and calling CO<sub>2</sub> merely "carbon" makes about as much sense as ignoring the oxygen in water (H<sub>2</sub>O) and calling it "hydrogen". For more on this see ["Words key weapon in climate war"](#).*