

NEW REPORT UNDERMINES CLIMATE CHANGE CLAIMS

Key scientific questions remain unanswered.

7th December 2004: As the 10th Conference of the Parties (COP) begins in Buenos Aires this week - the first COP since the ratification of the Kyoto protocol - scientists have published new research that calls into question many of the scientific assumptions driving global climate change policy.

The report, produced by the George C. Marshall Institute in Washington DC and the Scientific Alliance in London, suggests that calls for global action on climate change are often based on poor or uncertain science. In particular, the report sets out nineteen key questions and assumptions underpinning the climate change debate and global climate policy, highlighting a number of important areas where scientific uncertainty remains, as well as those where sound scientific evidence throws the Kyoto process into doubt.

Mark Adams, Director of the Scientific Alliance, said: “The debate over the state of climate science and what it tells us about past and future climate has been going on for at least 15 years. It is not close to a conclusion, in spite of assertions to the contrary. The purpose of our paper is to subject the fundamentals of climate change science to the highest level of scientific scrutiny and to highlight those areas where further research is still needed. “

William O’Keefe, President of the George C. Marshall Institute, said: “Climate change science has fallen victim to heated political and media rhetoric and as a consequence, the quality of science and rigors of the scientific process have suffered. The result is extensive misunderstanding over what we know about the climate system and what influences it, and the impact of human activity on future climate. The world will be ill served if global climate policy, planned out at events such as COP10, continues to be driven by politicized science instead of scientific facts and reality. The aim of our paper is to go some way towards restoring accuracy and clarity to the debate.”

There are key issues that must be better understood if policy is to more closely match current knowledge levels. Examples of issues that are not adequately understood in the climate debate include:

- **The assertion that there is a direct causal relationship between increased atmospheric concentrations of CO₂ and other green house gases, and increased temperature** – during the 20th century, greenhouse gases CO₂ rose steadily, while temperatures rose fell and rose in a pattern that showed no direct relation to increased greenhouse gases.

- **Whether global warming over the past century is unique to the past 1000 years or longer** – the IPCC Third Assessment Report conclusion that the warming of the 20th century is unique to at least the past 1000 years was based on a study (by Mann, et al.) that has been shown to be incorrect by *three* studies recently published in peer-reviewed literature. These studies show that many parts of the world have experienced warmer temperatures at some time during the last 1000 years than they did during the later part on the 20th century.
- **The influence of the sun on global climate** – new studies indicate that changes in the Sun's magnetic field may be responsible for shorter-term changes in climate, including for much of the 20th century.
- **The influence of human activity on the possibility of abrupt climate change** – all available evidence indicates that 'ice ages' are caused by changes in the amount of solar energy reaching the Earth's surface rather than changes in greenhouse gas concentrations.
- **The accuracy of climate change modelling** – the estimates from current climate change models are highly uncertain and large differences between the results from different modelling methods remain. No climate model has been scientifically validated
- **Understanding about major climate processes and their importance in terms of understanding future climate change** - key uncertainties about the influence of ocean circulation, the hydrological (water) cycle, cloud formation and the properties of aerosols on the climate system remain. The cumulative effect of these and other uncertainties in our understanding of the climate system is an inability to accurately model the climate system and therefore accurately project future climate.

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Copies of the report can be obtained from: <http://www.marshall.org>

For further information, please contact:

William O'Keefe, President of the George C. Marshall Institute: 202 296 9655

Mark Adams, Director, Scientific Alliance: 0044 (0) 7963 834412 (United Kingdom)

Notes to Editors

- The George C. Marshall Institute, a non-profit research group founded in 1984, is dedicated to fostering and preserving the integrity of science in the policy process. The Institute conducts technical assessments of scientific developments with a major impact on public policy and communicates the results of its analyses to the press, Congress and the public.

- The Scientific Alliance, formed in 2001, is a non-profit membership-based organisation based in London. The Alliance brings together both scientists and non-scientists committed to rational discussion and debate on the challenges facing the environment today.

The nineteen questions addressed by the report are as follows:

1. How is the atmospheric concentration of carbon dioxide (CO₂) determined and how accurate are the measurements?
2. How much of today's atmosphere is CO₂?
3. What has been the history of atmospheric CO₂ concentrations?
4. Do we know why CO₂ concentrations are rising?
5. What do we know about the relation between increases in the atmospheric concentrations of CO₂ and other greenhouse gases and temperature?
6. If temperature changes cannot be correlated with the increase in atmospheric concentrations of CO₂ and other greenhouse gases, what is causing them?
7. What influence does the Sun have on global climate?
8. What is known with a high degree of certainty about the climate system and human influence on it?
9. What major climate processes are uncertain and how important are these processes to understanding future climate?
10. What tools are available to separate the effects of the different drivers that contribute to climate change?
11. How accurate are climate models?
12. What is the basis for forecasts of large temperature increases and adverse climate impacts between 1990 and 2100?
13. How accurate are the parameters used in climate models?
14. How well have models done in "back-casting" past climate?
15. Is global warming over the past century unique in the past 1000 years or longer?
16. How much does the global climate vary naturally?
17. What do we know about the extent of human influence on climate? To what extent has temperature increase since 1975 been the result of human activities?
18. Could climate change abruptly?
19. Will sea level rise abruptly?