

Accuracy of Intergovernmental Panel on Climate Change Results Challenged by Recent H. Douglas Lightfoot Paper

A recent independent review, by H. Douglas Lightfoot, of a crucial Intergovernmental Panel on Climate Change (IPCC) report, Climate Change 2007: The Physical Science Basis (AR4), appears in the December 2010 (vol. 21.7) issue of Energy & Environment (Multi-Science Publishing).

([PRWEB](#)) December 15, 2010 -- H. Douglas Lightfoot's recent paper, "Nomenclature, radiative forcing and temperature projections in IPCC Climate Change 2007: The Physical Science Basis (AR4)", identifies significant inconsistencies and problems in the crucial IPCC AR4 report.

Three main problems are identified:

Firstly, atmospheric carbon dioxide concentration units have been confused. Measurement units of "parts per million by volume" (ppmv), meticulously specified by Charles Keeling for measurements of carbon dioxide concentration in the atmosphere, were replaced by "parts per million" (ppm), a measurement by weight without sufficient notification. For carbon dioxide, 1 ppmv is equal to 1.52 ppm, a significant difference.

"This confusion has escaped to the scientific community at large," explains author H. Douglas Lightfoot, "and has potential to cause serious problems. One has only to remember the Gimli Glider, an Air Canada flight, which ran out of fuel in mid-air over confusion between gallons and litres, to recognize potential hazards in confusing units."

Secondly, the most frequently quoted estimate of the warming effect of carbon dioxide appears to be overestimated by 2 to 10 times. There is a large discrepancy in the warming contribution of carbon dioxide between pre-industrial times and the present era. Before 1750, carbon dioxide was estimated to contribute approximately 11% of the warming effect, whereas between 1750 and 2005 the IPCC report states the effect at close to 100% of total warming.

The paper suggests the large discrepancy in values is unsubstantiated, casting doubt on the validity of the IPCCs reported contribution of carbon dioxide to current global warming.

Finally, the paper explains that there is simply no evidence to support the upper range of projected increases in atmospheric temperature to 2100 of between 2.9 and 6.4C, stated in the AR4 report. Using only information presented in the AR4 report, calculations show that required levels of atmospheric carbon dioxide are two to four times more than is possible for the scenario estimates of world energy demand in the year 2100.

Identified inconsistencies in the AR4 report are evidence that there are no trustworthy temperature projections in AR4 for the purpose of policymaking.

"A reasonable recommendation is that the IPCC issue a warning about the problems in AR4," Mr. Lightfoot explained, "followed by a schedule for completing necessary corrections. This would minimize damage to the credibility of the IPCC and that of its scientists, many of whom have done good work and are not associated with the temperature change projections."



“An investigation into how these problems passed through unnoticed would be a welcome further step,” Mr. Lightfoot explained. “It is imperative that a body of engineers and scientists independent of the IPCC verify the results of the re-assessment. I support the 2010 Interacademy Council review of the IPCC’s procedures. Their recommendations are an important step towards preventing the types of problems identified in the IPCC’s AR4 report.”

“We currently have a debate in the climate sciences,” Mr. Lightfoot explained. “It is possible that several of the existing inconsistencies identified in my recent paper are contributing to this debate. It is my hope that the process for correcting these problems can change the debate to a useful and beneficial dialogue.”

For science journalists and editors:

A more detailed explanation of this paper’s findings is available by contacting The Lightfoot Institute through their website: www.thelightfootinstitute.ca.

About H. Douglas Lightfoot:

A retired Mechanical Engineer, H. Douglas Lightfoot graduated from the University of British Columbia and later received an MBA from Concordia University. He spent eighteen years with Domtar Inc., working on research, engineering and economic studies of alternate energies as well as a wide variety of projects for the pulp and paper, chemicals and construction materials businesses. He is an affiliated member of the Global Environmental and Climate Change Centre (GEC3), McGill University branch. He is also co-founder of The Lightfoot Institute.

About The Lightfoot Institute:

The Lightfoot Institute is a Canadian non-profit research and education organization, with charitable status, formed:

“To generate awareness of today’s global energy challenges and to advance a workable and sustainable plan that would solve the universally growing needs.”

About Energy & Environment:

Energy & Environment is an interdisciplinary journal aimed at natural scientists, technologists and the international social science and policy communities covering the direct and indirect environmental impacts of energy acquisition, transport, production and use.

Copies of the paper are available at the following website: www.multi-science.co.uk/ee.htm

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