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Global Warming or Just Hot Air?

Environmental issues have assumed a prominent place in today's political and scientific thought in the western industrialized countries. Within the last 50 years, these countries have attained a comfortable control over man's historic struggle with the elements of nature. Although natural disasters of earthquakes, drought, hurricanes, and flooding still occur quite regularly, the affluent, industrialized countries deal effectively with these occurrences, and the loss of life and general impoverishment that has historically resulted from these disasters has been greatly diminished. This relatively new position of strength to withstand the results of natural disasters has spawned a new vision of man's relationship to nature. Out of this new vision, concern for global trends and possible trends has generated several issues that are being addressed by political leaders and policy makers across the globe.

Global warming caused by man is probably the most significant environmental/ political issue of the day. A crescendo of news reports proclaiming consensus among global climatologists was unleashed upon the public prior to the Kyoto gathering in Japan in December of 1997. Subsequent reports note that the scientific community is now in agreement that man-induced global warming is occurring and that steps must be taken to avert a global disaster. At the very least, additional funding will be required for further research and monitoring of the situation. At every opportunity, Vice President Gore, a notable proponent of the global warming hypothesis, declares the scientific debate to be closed and attempts to focus attention on his plan to save the world

from the reckless behavior of man.

Contrary to the opinion of Vice President Gore, the scientific discussion of the global warming issue is not over. As evidence of this, a petition drive led by Dr. Arthur Robinson from the Oregon Institute of Science and Medicine has gathered signatures, as of June 1998, from over 16,500 individuals who hold degrees in science on a petition that states in part, "There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable

future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate." It appears that serious scientific discussion of the topic is just now beginning.

The subject of the global warming debate is the greenhouse effect that results when greenhouse gases in the earth's atmosphere absorb infrared heat radiating from the earth and hold that heat close to the surface of the earth preventing its escape back into

outer space. The greenhouse effect is necessary and essential to life on this planet and maintains the earth's temperature and climate that we enjoy today.

From the geologic record of the earth's climatic history, abundant evidence exists that the earth's temperature is in constant flux when viewed over geologic time. Ice ages and warm periods have come and gone in the past without any influence from man. Such changes should continue in the future from natural causes (most likely from slight fluctuations in heat generated by the sun). The crux of the political debate today is whether or not activities of →

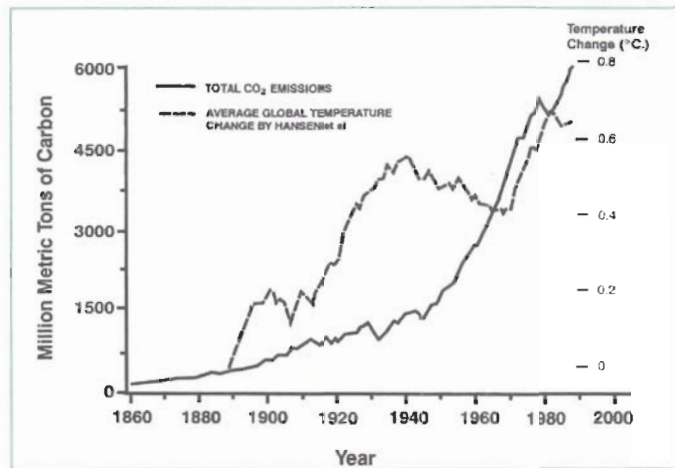


Figure 1. Global CO₂ emissions from fossil fuel burning compared to average global temperature change.

man, namely the release of carbon dioxide, are affecting or will affect the earth's climate.

Measurements taken over the last 40 years at the Mauna Loa Observatory in Hawaii and confirmed by measurements taken around the world show a steady increase in atmospheric carbon dioxide. Since carbon dioxide is a greenhouse gas, it has been reasoned that the observed increase should cause an increase in the earth's greenhouse effect. Although Dr. James Hansen's analysis of land-based temperature points, which is regularly cited in discussions on this topic, indicates an increase in global temperature during the last 100 years, the bulk of the temperature increase occurred before any significant man-induced increase in carbon dioxide concentration began. In fact, as illustrated on Figure 1, the earth's temperature exhibited a 30-year cooling trend from 1940 through 1970 while carbon dioxide concentrations were rapidly increasing. The reasonable conclusion from these data is that carbon dioxide concentrations were not the controlling factor in global temperature during this period. This conclusion is not surprising in light of the fact that carbon dioxide comprises less than 2% of the earth's greenhouse gases.

Since the proponents of man-induced global warming have no hard data to support their hypothesis, they rely primarily on anecdotal justification bolstered by computer simulations of the earth's climate for the next 100 years. These computer simulations comprise hundreds of assumptions and estimated data points which can and do yield variable results depending upon the individual doing the estimating. The results are so sensitive to the initial input data that a 1% difference in the input parameters can change the result from a global temperature increase over 100 years to a global temperature decrease over the same time period. In addition, none of these global climate models has yet produced anything that resembles a history match of the observed temperature data over the last 100 years.

Considering the dramatic implications from the political proposals currently being considered, scientific discussion must be continued on man-induced global warming and proponents of this hypothesis should be challenged to support their contention and explain the observed facts and data. Earth scientists especially need to be informed on this matter and need to lead the public debate regarding the theory's merits. While man-induced global warming may have little scientific basis, it is a very real political issue with very severe consequences for all of us. It is imperative that knowledgeable earth scientists confront this issue and not sit idly by and allow special interest politics to achieve its goal.

Editor's Note: This abstract is unedited and unabridged, and printed as presented by the author. The views and opinions

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Biographical Sketch

William M. Kazmann received a B.S. and M.S. in Petroleum Engineering from the University of Texas at Austin in 1973 and 1974. His career as a petroleum engineer began with Texas International Petroleum Corp. based in Midland and Oklahoma City and then Bonray Drilling Company. Bill became a geological engineer with Wessely Energy Corporation in Dallas in 1978 to 1980 where he was involved in the development and sale of drilling prospects to industry partners and provided technical testimony at various state regulatory hearings. In 1980 through 1984 he worked for Resource Evaluations, Inc. as petroleum engineer and vice president. He organized his own exploration partnership, Onset Petroleum Corporation, with capitalization of \$1.2 million to fund a secondary office in Houston. He co-founded Primary Petroleum Corporation in 1984 where duties included all aspects of evaluation, selection, and development of drilling prospects for sale to industry partners. Bill joined LaRoche Petroleum Consultants, Ltd., in Dallas in 1996 where he is a partner, preparing field studies, reserve estimates, and reports on domestic and international oil and gas properties. His areas of expertise include the Gulf Coast, Permian Basin waterfloods, and the Mid-Continent. □

