Briefing Note on Global Warming Debate

Weather systems are complex - Weather is what you experience when you are outside. It is the total impact of dozens of variables including cosmic and solar radiation, volcanic heat entering the bottom of the ocean, and so-called greenhouse gas or carbon dioxide (CO2) emissions. A change in any variable has implications for the entire system. The diagram here is a grossly simplified representation. CO2, one small component of the atmosphere, has been the sole focus of scientific and political considerations.

Current climate changes are within natural levels of variability - Climate is the average of the weather over time or in a region. The climate changes naturally and significantly all the time. Global temperature is part of the change and is either going up or down. This graph, based on satellite measurements, shows that recent warm temperatures peaked in 2000 and the earth is now heading into a cooling phase.

Human-caused warming theory dominates public policy - The most fashionable climate theory is known as the Anthropogenic Warming Theory (AGW). Three basic assumptions underlie its view that humans are causing global warming/climate change:

1. Carbon dioxide is a greenhouse gas - it delays the escape of heat from the earth to space.
2. If CO2 increases temperature increases.
3. CO2 will increase because of human production – primarily through carbon based forms of energy consumption.

CO2 Levels Follow Temperature Changes - Every record of any duration for any period shows temperature increasing before CO2. Temperatures have declined since 2000 even though CO2 levels are increasing.

Human-caused CO2 production is a tiny fraction of total greenhouse gases in our atmosphere – The most common greenhouse gas is water vapour in clouds, representing 95% by volume. CO2 is less than 4% of these greenhouse gases and the human portion is approximately 0.12% of that.

Current atmospheric levels of CO2 are the lowest in 600 million years. Present CO2 levels, measured in parts per million, are 385 ppm. Previous levels have exceeded 4000 ppm and the average level for the last 300 million years is approximately 1000 ppm.1 This figure matches what research shows is ideal for plants. Commercial greenhouses pump in that level to increase plant yields four times. If you reduce CO2 levels plants suffer. At 250 ppm many die and at 150 ppm they die. No plants, no oxygen, no life on earth.

CO2 levels do not match temperature in any record – The main proponent of the Anthropogenic Warming Theory has been the United Nations’ Intergovernmental Panel on Climate Change (IPCC) which has used its model to advocate for increased government planning and management of economies. Only its computer models have identified CO2 as the cause of warming and climate change. Since weather is so complex computer models do not work. They cannot forecast weather past ten days accurately, let alone 50 or 100 years.

Solar energy variations match temperature records. The sun causes temperature change in three ways:

1. Physical changes in sun/earth relationships known as the Milankovitch Effect, the elliptical orbit changes the sun’s distance to the earth which impacts temperature.
2. Changes in solar magnetic fields manifested by sunspots that change low cloud formation and thereby temperature.
3. Changes in the sun’s electromagnetic spectrum, heat and light.

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1 Dr. Fred Singer, Professor Emeritus of environmental science at the University of Virginia