Title: Global Climate Change-the Technology Challenge

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**Synopsis**

This presentation provides a succinct analysis of the projected warming the earth is likely to experience in the decades ahead, the emission reductions, and the technologies needed to help achieve these emission reduction. Population growth and the developmental pressures, spawned by an increasing demand for resource intensive goods, foods and services, are altering the planet in ways that threaten the long-term well being of humans and other species. The paper will discuss the role that climate change plays in challenging long-term sustainability. Transparent modeling tools and the most recent literature are used, to quantify the challenge posed by climate change and potential technological remedies. The presentation examines forces driving CO2 emissions, how different emission trajectories could affect warming this century, a sector-by-sector summary of mitigation options, and R&D priorities. It is concluded that the current generation of energy generation and end use technologies are capable of achieving less than half of the emission reduction needed for such a major mitigation program. New technologies will have to be developed and deployed at a rapid rate, especially for the key power generation and transportation sectors. Current energy technology research, development, demonstration and deployment programs fall far short of what is required.

**Biography**

Frank Princiotta is Director of the Air Pollution Prevention and Control Division (APPCD) of the National Risk Management Research Laboratory. He has a degree in Chemical Engineering and a Nuclear Engineering Certificate from the Oak Ridge School of Reactor Technology. As Director of APPCD in Research Triangle Park, North Carolina since 1972, he is responsible for R,D & D for methods and technologies for controlling and characterizing air pollution from major sources. He has been a key agency expert in air pollution control for over 30 years; he has been the recipient of a gold medal, four EPA bronze medals for his accomplishments in the air pollution control field. He has also received the President’s Meritorious Executive Award on two separate occasions. He played the leadership role in the development and demonstration of sulfur dioxide pollution control technology for coal-fired boilers, which has been the mainstay of SO2 control worldwide. An author of many scientific papers on air pollution control, he has been a frequent speaker before technical societies and conferences and has chaired numerous symposia and has testified before House and Senate Committees on air pollution control. Most recently he has focused on global climate change which he considers the most important environmental issue of the century. He has analyzed the role that technology will need to play, if we are to avoid the potentially catastrophic impacts associated with an unconstrained and uncontrolled use of energy.