

## **Climate Change Reality: Adaptation and Mitigation Requires a Robust Economy**

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Climate change and global warming are issues of great concern to humankind. The geologic record documents a cyclic pattern of warm versus cool climates throughout Earth's history. Recent observations and data collections demonstrate a significant pattern of ocean and atmospheric warming. Controversy exists as to how much of this change is part of natural cycles and how much is contributed from anthropogenic greenhouse gas and aerosols. How these patterns of climate change impact society requires careful evaluation of data and predictive models for future climates. Realistically, our response must include both adaptation to change and mitigation of consequences.

Adaptation is adjustment to our environment, such as retreat from the present shoreline as sea level rises or changes in planting schedules or areas as rainfall patterns shift. Mitigation involves efforts to modify or negate the consequences of environmental change, including constructing and strengthening levees to control higher river discharge into an ocean with rising sea level.

Many professional organizations representing members active in energy and resource industries have a role in our understanding both climate change and global warming, and assessing the economic realities associated with a changing environment. These organizations exist to advance the science and profession of energy-related geosciences worldwide, through assembly and distribution of the best science related to the discovery and production of oil, natural gas, coal and other forms of energy, especially those considered as sustainable. Issues of peak production versus peak-demand, and sustained subsidization of renewables are clearly part of this discussion.

The necessary development of new technologies and the maintenance of the existing energy-supply infrastructure require investment capital from a robust global economy. Energy for that global economy will be supplied by fossil-fuels for the foreseeable future. The issue of responsible and ethical planning for environmental change is a shared task.

### **BIOGRAPHY**

John M Armentrout served as Co-Chair for the AAPG Global Climate Change Committee during 2008-2010, and co-convened three Climate Change Symposia and chaired a technical session on climate change at the 2008 ACE meeting. He has continued to address climate change issues and present his updated perspective locally in Oregon.

John's professional career included 26 years as an exploration geologist for Mobil Oil Corporation and 15 years as an international consultant and seminar teacher following retirement from ExxonMobil in 2001. He is an honorary member of the Pacific Section, and was AAPG Vice-President Sections 2007-2008.