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Written testimony by AAPG President Peter R. Rose was presented to the full U.S. Senate Committee on Energy and Natural Resources in favor of restoration of program funding for the 2007 Department Of Energy oil and natural gas research program. When the full DOE budget was presented to Congress by Energy Secretary Bodman on February 9, 2006, the Department request proposed to terminate the oil and gas research and development programs. The reason given for termination was that there were sufficient market incentives for private industry support.

The DOE also proposed repeal the Energy Policy Act of 2005 program to establish a new mandatory oil and gas research and development (R&D) program, called the Ultra-Deep and Unconventional Natural Gas and Other Petroleum Research program that would be funded from Federal revenues from oil and gas leases beginning in FY 2007. The Department indicated that it felt these R&D activities were more appropriate for the private-sector oil and gas industry to perform.

AAPG's testimony requests restoration of the R&D programs as a matter of national priority, and expresses deep concern about the actions to dismember the recently passed Energy Policy Act of 2005 provisions.

Department of Energy 2007 Budget request for Oil and Natural Gas Research and Development

Testimony submitted for the record to the United States Senate Committee on Energy & Natural Resources by Pete Rose, President, American Association of Petroleum Geologists

February 9, 2006

To the Chair and Members of the Committee:

Thank you for this opportunity for the American Association of Petroleum Geologists (AAPG) to provide its perspective on the fiscal year 2007 budget request for oil and gas research and development (R&D) programs within the Committee's jurisdiction. The Administration's budget contains significant reductions for the Department of Energy (DOE), Office of Fossil Energy, including the elimination of the oil and gas technology programs. AAPG requests restoration of these DOE Fossil Energy oil and gas technology programs as a matter of national policy.

In addition the budget language also proposes to repeal the Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund of the recently signed Energy Policy Act of 2005. AAPG is deeply concerned about establishing the precedence by efforts to dismantle, piecemeal, provisions of that landmark legislation - the first update of US energy policy in more than a decade.

AAPG applauds the Administration's efforts to enhance research in areas that diversify the options to supply energy in our economy. AAPG supports the continued efforts to develop technologies to conserve energy and technologies that will permit the economy to perform more efficiently with reduced energy input. However, as a professional organization, AAPG's members understand that fossil fuels will continue to be a mainstay of the world's energy economy and will provide many of the raw materials that allow us to function in our modern world.

AAPG, an international geoscience organization, is the world's largest professional geological society representing over 30,000 members. The purpose of AAPG is to advance the science of geology, foster scientific research, promote technology and advance the well-being of its members. With members in 116 countries, AAPG serves as a voice for the shared interests of petroleum geologists and geophysicists in our profession worldwide. Included among its members are numerous CEOs, managers, directors, independent/consulting geoscientists, educators, researchers and students. AAPG strives to increase public awareness of the crucial role that geosciences, and particularly petroleum geology play in energy security and our society.

DOE Fossil Energy Research and Development

AAPG strongly feels the Department of Energy's (DOE) Fossil Energy research and development (R&D) budget funding for Oil Technology R&D and Gas Technology R&D in the Office of Fossil Energy and the Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund of the recently signed Energy Policy Act of 2005 are vital for a viable domestic industry in the near-mid- and long-term.

Historically, members of Congress have continually emphasized the need for a comprehensive energy policy containing a strong R&D component. AAPG recognizes the importance of maintaining a strong domestic petroleum industry. Our members support and emphasize the need for continuing efforts in R&D in order to sustain the standard of living U.S. citizens have earned and expect. While the price of crude oil is established by a global market, the costs of exploration, development, and production are influenced strongly by the application of discoveries in geosciences and new developments in technology. Thus, focused R&D can make a significant contribution to sustaining our domestic petroleum industry and to national energy security.

The expanding global economies, including the United States, China and India, place increasing demand on available global energy production capacity. Now, perhaps more than any time in the history of the industry, accelerating technology development and the related opportunities for expanding the base of trained geoscientists available to the industry is critically important. It is also important to recognize the leadership role of the United States in technology development and deployment on the global economy. Commercial export of those technology innovations provides jobs and business opportunities for domestic companies servicing the international oil and gas community.

While our dependence on crude oil and natural gas has changed little since the "energy crisis" of 1973, public and private funding of R&D for these commodities has declined significantly. Many of the major companies and some companies in the related service industry, that once maintained strong programs in R&D, have disappeared through mergers and acquisitions. Others have replaced or retooled some of those R&D activities with technical-service functions, primarily in support of their international activities. In addition, federal funding for R&D programs has declined significantly. While some states, private foundations, smaller companies, and independents are continuing to support R&D in oil and gas, the amount is woefully inadequate to meet the needs of the domestic industry. Thus, absent adequate public support for these endeavors, the continuing flow of new discoveries in the geosciences and new technological breakthroughs that will be needed to continue to support a viable domestic industry in the 21st century will not occur.

Our nation is the world's largest consumer and net importer of energy. According to the Energy Information Administration, during the first nine months of 2005, the U.S. consumed 20.6 million barrels of oil per day, with as much as 12.9 million barrels supplied by imports of crude and products. Our national energy and economic security depends on a vibrant domestic oil and gas industry. Independent producers drill 90 percent of domestic oil and natural gas wells, produce approximately 85 percent of domestic natural gas and produce about 65 percent of domestic oil. Domestic production creates jobs, produces tax revenue, provides royalty income to hundreds of thousands of mineral owners, and contributes to economic development in producing areas (mostly rural) of the nation.

Federal funding of R&D increases the potential for incremental domestic oil and gas supply, and it is not a subsidy. Almost 85 percent of the jointly-funded R&D and technology transfer programs carried out by universities, state agencies and independent companies are focused on the development of new reserves by domestic independent producers. R&D programs, such as those designed for development of unconventional tight sandstone and shale reservoirs, develop and demonstrate new and innovative technologies. These technologies are used to extend the life of existing oil and gas reservoirs as well as to explore and develop reserves such as the U.S. supply of unconventional gas, which was largely driven by focused federal spending and tax incentive programs. As technology evolves, today's unconventional oil and gas reserves are tomorrow's conventional reserves. It is more important now than ever that the U.S. leverage its investment to find new sources of oil and gas-the unconventional reserves of tomorrow.

Today, revolutionary oil and gas technology is seldom available in the market at any price. Irrespective of the price of oil and gas, procurement of new technologies will be a continuing challenge for domestic U.S. oil and gas producers. Private sector R&D is typically conducted by major international companies with a strong focus on international projects in super giant offshore fields with limited application to domestic onshore production. Most programs jointly funded by DOE result in the transfer of technologies to a much wider range of problems and thus are more cost effective and useful for increasing the supply right here in the U.S.

Further, federal R&D funds form a crucial element of university programs that foster undergraduate and graduate research initiatives which replenish the corps of future petroleum geologists, engineers and geophysicists. Enrollment in the geosciences departments across the U.S. has decreased by 70 percent in the past 20 years, while international oilfield education has increased significantly. Accordingly, our universities will graduate even fewer technical professionals to maintain an already strained national energy sector. As the age demographics of trained and experienced petroleum workforce continues to edge toward retirement age, DOE's research and development programs serve the additional

purpose of helping to attract new students and employees into this vital industry. More than 60% of AAPG members are age 55 or older and increases in graduation of professionals from our universities is critical to national security.

DOE's past R&D programs have helped develop broad advances in many oilfield technologies, such as 3-D and 4-D multi-component seismology. New completion and production techniques provide the opportunity to enhance environmental compliance, thus minimizing industry impact to our environment. Many of these technologies were funded under DOE's Reservoir Class Program in the 1990's and are now significantly paying dividends. DOE's oil and gas R&D programs have enabled producers to reduce costs, improve operating efficiency and enhance environmental compliance, while increasing ultimate recovery and adding new reserves.

The full recognition of the vital importance of R&D programs like those sponsored by DOE's Office of Fossil Energy is of paramount importance to the future of our country and our society. No task before our nation is more critical than energy security and this concept is not new-it is a traditional ideal of democracy. But it is time that we moved toward the fulfillment of this ideal with more vigor and less delay. For energy security is both a foundation and unifying force of our democratic way of life-it is the mainspring of our economic progress. In short, R&D programs are at the same time the most profitable investment society can make and the richest return that it can confer. Today, more than at any other time in our history, we need to develop our oil and gas resources to the fullest. Without federal support for R&D programs, this achievement becomes more difficult.

Thank you for the opportunity to present this testimony to the Committee.

If you would like additional information for the record, please contact me at 1-888-945-2274, ext. 639, fax, 1-918-560-2626, or P.O. Box 979, Tulsa, Oklahoma 74101 0979 (AAPG offices at 1444 South Boulder Avenue, Tulsa OK 74119).