

**Testimony Submitted by
American Geosciences Institute**

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**To the United States Senate Committee on Appropriations
Subcommittee on Energy and Water Development**

**Regarding the Department of Energy's Offices of Science, Energy Efficiency and Renewable
Energy, and Fossil Energy Research and Development**

May 7, 2014

Thank you for this opportunity to provide the perspective of the American Geosciences Institute (AGI) on fiscal year (FY) 2015 appropriations for programs within the Subcommittee's jurisdiction. Department of Energy (DOE) investments in geoscience-related research and development (R&D) will help develop and sustain energy resources to support economic growth and resilient communities.

AGI supports robust funding for science at DOE and the President's request of \$5.111 billion for the Office of Science. AGI supports proposed increases to the Geothermal Energy Technologies Program and the continued funding of the Critical Materials Hub in the Office of Energy Efficiency and Renewable Energy. We support the Multiagency Collaboration on Unconventional Oil and Gas Research and DOE's proposed investment of \$35 million in the Natural Gas Technologies Program. We note that there may be scope for increased collaboration between DOE and the U.S. Geological Survey in several of these programs. AGI supports funding for research and technology that will lead to a clean energy future and we also recognize that fossil fuels will continue to be important energy sources for several decades. We regret the severe cuts to Fossil Energy Research and Development, including the Focus Area for Carbon-Sequestration Science. We urge the Committee to fund continued research to support economically and environmentally efficient use of fossil fuels.

AGI is a nonprofit federation of about 50 geoscientific and professional associations that represent approximately 250,000 geologists, geophysicists, and other earth scientists who work in industry, academia, and government. Founded in 1948, AGI provides information services to geoscientists, serves as a voice of shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society's use of resources, resilience to natural hazards, and the health of the environment.

DOE Office of Science

The DOE Office of Science is the single largest supporter of basic research in the physical sciences in the United States. The Office of Science manages fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science. The Biological and Environmental Research Program carries out important work in atmospheric modeling and the linkages between earth, biological, and human systems. **AGI asks that you support the President's request of \$5.111 billion for the Office of Science.**

DOE Office of Energy Efficiency and Renewable Energy

Geothermal Technologies Program: The President is requesting a significant increase (of \$15.725 million, or 34.4 percent) in funding for the Geothermal Technologies Program. This program is a world leader in supporting the development of geothermal energy, in funding applied geothermal research, and in linking the public and private sectors in this effort. AGI appreciates the work of the Geothermal Technology Program to facilitate data sharing across and between institutions. We note that “the program will strengthen subsurface R&D collaboration with offices across DOE.” Coordinating across DOE is an excellent first step but we urge the Committee to support interagency collaboration on subsurface R&D. The U.S. Geological Survey (USGS) is charged in its Organic Act with “examination of the geological structure” of the nation and therefore has great experience and expertise in studying the subsurface. **AGI asks the Committee to support interagency collaboration on subsurface R&D in order to avoid unnecessary duplication of effort and to ensure the most efficient use of federal resources. AGI supports the requested increase for Geothermal Technologies.**

Advanced Manufacturing Program: The Critical Materials Hub, a wide-ranging consortium led by Ames National Laboratory, is carrying out research that should increase resilience to possible disruptions in the supply chains of elements that are critical to the energy sector. The Hub is to “develop solutions across the lifecycle of critical materials.” We understand that DOE and the Hub focus on the mid-stream section of lifecycles, from processing to end-use applications and recycling, but the full lifecycle of mineral materials starts with understanding the earth processes that create ore deposits and continues through to ultimate disposal of the materials, which often involves storage or dispersal in the earth system. **We urge DOE to take a more comprehensive and holistic view of the lifecycle of materials and to include geoscience aspects of materials in their lifecycle analyses.** The USGS may be able to provide additional expertise in the geoscience of energy critical materials. **AGI supports funding for the Critical Materials Hub of \$25 million.**

DOE Office of Fossil Energy Research and Development

Natural Gas Technologies Program: Developments in the production of natural gas have transformed the United States' energy portfolio and reduced the cost of energy significantly. It is appropriate that DOE is proposing a major increase (\$14.4 million, or 69.9 percent) in the Natural Gas Technologies Program. AGI supports DOE's collaboration with USGS and the

Environmental Protection Agency on the Multiagency Collaboration on Unconventional Oil and Gas Research. **AGI supports funding of \$35 million for Natural Gas Technologies.**

Coal Program: The Energy Information Administration projects that about 50 percent of U.S. total energy use will come from coal, petroleum, and other liquids through at least 2040, and that more than 30 percent of electricity will be generated from coal through 2040. Reducing greenhouse gas emissions is essential but, even with our best efforts, fossil fuels will remain important components of our energy system for decades, and we should not overlook any opportunity to improve the efficiency and lessen the impact of using fossil fuels. The President's budget proposes severe cuts to the Coal Program, including cuts to research on carbon capture and storage. AGI is particularly concerned about the proposed \$29 million reduction in funds for Carbon Storage activities. Geological carbon sequestration requires both technology and detailed understanding of the storage reservoir. **AGI believes that the proposed cut of \$2.8 million (29 percent) to the Focus Area for Carbon Sequestration Science is premature and that further investigation of the geological aspects of carbon storage is warranted.** We recognize that there may be overlapping responsibilities between USGS and DOE in Carbon Storage research and we urge the Committee to ensure that all federal research is funded appropriately and coordinated efficiently.

Thank you for the opportunity to present this testimony to the subcommittee. If you would like any additional information for the record, please contact Maeve Boland at 703-379-2480, ext. 228 voice, 703-379-7563 fax, mboland@agiweb.org, or 4220 King Street, Alexandria VA 22302-1502.