

**Testimony Submitted by
American Geosciences Institute**

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**To the United States Senate
Committee on Appropriations
Subcommittee on Energy and Water Development, and Related Agencies
Regarding the Department of Energy**

March 20, 2015

Thank you for this opportunity to provide the perspective of the American Geosciences Institute (AGI) on fiscal year (FY) 2016 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 \$5.34 billion for the Office of Science. AGI supports proposed increases to the Geothermal Energy Technologies Program, the continued funding of the Critical Materials Hub in the Office of Energy Efficiency and Renewable Energy, and the development of the Subsurface Technology and Engineering RD&D crosscut. We again 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 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 Biological and Environmental Research Program carries out important work in atmospheric modeling and the linkages between Earth, biological, and human systems; the Chemical Sciences, Geosciences, and Biosciences Division of the Basic Energy Sciences program helps elucidate the geochemical and geophysical characteristics of the Earth. **AGI asks that you support the President's request of \$5.34 billion for the Office of Science.**

Crosscutting Initiatives

Subsurface Technology and Engineering RD&D crosscut (SubTER): AGI is impressed by DOE's Subsurface Technology and Engineering RD&D crosscut which integrates research, development, and demonstration on shared issues associated with the Earth's subsurface across the agency. It is encouraging to see a collaborative effort to minimize duplication and maximize synergies across many diverse offices. We strongly suggest that DOE expand this effort to include communication and, to the extent possible, collaboration with the U.S. Geological Survey, which has great experience and expertise in studying the Earth's subsurface. **AGI asks the Committee to support crosscutting DOE initiatives and to encourage interagency collaboration on subsurface RD&D in order to avoid unnecessary duplication of effort and to ensure the most efficient use of federal resources.**

DOE Office of Energy Efficiency and Renewable Energy

Geothermal Technologies Program: The President is requesting an increase of \$41 million, or 75 percent, for the Geothermal Technologies Program. This major investment in the Frontier Observatory for Research in Geothermal Energy (FORGE) and other R&D projects should lead to significant advances in this promising energy sector. **AGI supports the President's request for the Geothermal Technologies Program.**

Advanced Manufacturing Technologies: New materials are a foundation for innovative energy development. The Advanced Manufacturing Technologies program focuses on one section of the lifecycle of materials for the energy sector: developing new materials and technologies. **We urge DOE to take a more comprehensive and holistic view of the lifecycle of materials. Studies should integrate knowledge from the geosciences with the existing expertise in DOE to produce a full lifecycle analysis of the flow of materials critical to the energy sector.** The 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. The U.S. Geological Survey may be able to provide additional expertise in the geoscience aspects of energy-critical materials.

AGI is a member of the Mineral Science and Information Coalition, which supports mineral functions in the federal government. The Critical Materials Hub, a consortium led by Ames National Laboratory, is carrying out important and timely research that should increase

resilience to possible disruptions in the supply chains of elements that are critical to the energy sector. To ensure more robust and reliable supply chains, we suggest that the Critical Materials Hub needs a complementary Hub that would focus on the upstream sourcing of raw materials including innovations in mineral exploration, mining, and processing. **AGI supports funding for the Critical Materials Hub of \$25 million.**

DOE Office of Fossil Energy Research and Development

Fossil Energy R&D: The President requests essentially flat funding for Fossil Energy R&D. AGI believes that fossil fuels, and particularly natural gas, will be a pillar of the nation's energy supply for some time (see *America's Increasing Reliance on Natural Gas: Benefits and Risks of a Methane Economy*, <http://www.americangeosciences.org/policy/ci-forum-2014/final-report>, for more information). We respectfully request that the committee support increased research on natural gas, unconventional fossil fuel, and carbon dioxide technologies, and geologic carbon storage. This research would have the potential to optimize the extraction and processing of our finite fossil fuel resources and to mitigate any negative impacts associated with fossil fuel development while other energy sources are being examined. **AGI supports greater investment in fossil fuel R&D that would enable the nation to reap the greatest benefit, while causing the least associated harm, from ongoing fossil fuel production and use.**

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.