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Energy and Science Issue Area Plan

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Foreword

As the investigative arm of Congress and the nation's auditor, the General Accounting Office is charged with following the federal dollar wherever it goes. Reflecting stringent standards of objectivity and independence, GAO's audits, evaluations, and investigations promote a more efficient and cost-effective government; expose waste, fraud, abuse, and mismanagement in federal programs; help Congress target budget reductions; assess financial information management; and alert Congress to developing trends that may have significant fiscal or budgetary consequences. In fulfilling its responsibilities, GAO performs original research and uses hundreds of databases or creates its own to compile and analyze information.

To ensure that GAO's resources are directed toward the most important issues facing Congress, each of GAO's 35 issue areas develops a strategic plan that describes its key issues and their significance, how those issues influence audit objectives, the focus of its work, and the planned major job starts. Each issue area relies heavily on input from congressional committees, agency officials, and subject-matter experts in developing its strategic plan.

The Energy and Science issue area focuses on the Department of Energy (DOE), the Nuclear Regulatory Commission (NRC), the Federal Energy Regulatory Commission, and the Tennessee Valley Authority. In addition, it reviews science and technology issues on a governmentwide basis, with particular emphasis on the programs and activities of the National Science Foundation and the Department of Commerce's National Institute of Standards and Technology, Patent and Trademark Office, and National Technical Information Service.

Our work in the Energy and Science area—where federal funding is approaching $100 billion a year—is designed to assist Congress in (1) examining the role and continued need for a federal presence in many of the programs and activities; (2) exposing incidences of waste, fraud, abuse, and mismanagement; and (3) promoting a smaller, more efficient, and cost-effective government.

The principal issues are

- examining the missions, organizational structures, and management practices of the Department of Energy and related energy and science agencies in view of changing national priorities;

- determining whether the federal government is using the most cost-effective ways to deal with the safety, security, and environmental legacies of nuclear weapons as well as nuclear power in the post-Cold War era;
- ensuring that federal policies are effectively using competition to obtain the lowest prices in energy markets, while providing secure and environmentally sound sources of supply; and
- examining the appropriateness and outcomes of priority-setting and evaluation measures for the federal government's sizeable investment in science and technology activities.

In the pages that follow, we describe our key planned work on these important issues.

Because events may significantly affect this plan, our planning process provides for updating this plan and responding quickly to emerging issues. If you have any questions or suggestions, please call me at (202) 512-3841, or my associate, Bernice Steinhardt, at (202) 512-6543.

Victor S. Rezendes
Director
Energy and Science Issues

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Table I: Key Issues

Issue	Significance
Examining the missions and management of energy and science agencies: Are the missions and management practices of the Department of Energy and related energy and science agencies consistent with changing national priorities?	Changing national priorities and significant congressional interest in reforming the federal government and reducing its budget have made DOE and related energy and science agencies prime candidates for restructuring and/or dismantlement. Reevaluating agencies' missions is a fundamental part of any major restructuring process because it involves determining if those agencies should remain in their present form and if their missions could be performed elsewhere or eliminated altogether. Significant restructuring, however, would likely take several years to accomplish.
Addressing the consequences and implications of the nuclear age: Is the government dealing in the most cost-effective way with the safety, security, and environmental legacies of nuclear weapons and nuclear power in a post-Cold War era?	Priority once given to stockpiling nuclear weapons and rapidly building new nuclear power plants in the private sector has given way to an emphasis on reducing weapons stockpiles; safeguarding and preventing the proliferation of nuclear materials and technologies, both in the United States and abroad; cleaning up, dismantling, and disposing of waste from old nuclear facilities; and restructuring the nuclear weapons complex to meet post-Cold War needs. All this must be accomplished while protecting the safety and health of workers and the public. These new priorities are costly, are often controversial, and will require decades to complete; moreover, they come at a time of increasing attention to cutting the cost of government.
Achieving competition and security of energy supplies: Are government policies maximizing competition in energy markets and ensuring reliable and environmentally-acceptable energy supplies?	The past 2 years have witnessed major regulatory reforms to promote more competition, consumer choices, and lower prices in energy markets. For example, the gas and electric industry has been restructured, and regulators are experimenting with more market-based approaches to energy production and use. Meanwhile, the United States is importing more than 50 percent of the oil it consumes. Because oil imports are expected to grow, particularly from Middle East countries, supply disruptions might occur and trade deficits might increase. Energy production and use also release many harmful pollutants into the atmosphere, raising concerns, both domestically and internationally, about the effects of acid rain and global warming.
Assessing the outcomes of federal investment in science and technology programs: Are the intended outcomes of federal science and technology-related programs being achieved and are priority-setting and evaluation measures credible and appropriate?	With a limited budget, Congress and the administration are faced with the increasingly difficult challenge of finding better ways to prioritize and coordinate funding for science and technology-related programs—now scattered over 20 agencies—as well as to evaluate the results and effects of such spending. Critical decisions must be made on the proper balance between basic and applied research as well as among various competing needs and the appropriate role of government in collaborating with industry to help maintain competitiveness in global markets.

Table I: Key Issues

Objectives	Focus of work
•Identify missions, programs, and activities within DOE and related energy and science agencies that can be downsized, restructured, privatized, or eliminated. •Evaluate DOE's efforts to achieve mission objectives and to implement contracting reforms. •Identify ways to strengthen information systems to support DOE's oversight of contractors. •Recommend ways to improve agencies' management and operations.	•Mission and structure of DOE •NRC regulatory activities •DOE contracting reforms •Information systems supporting new management oversight •Opportunities to downsize, privatize, or eliminate agency programs and activities
•Recommend cost-saving ways to deal with safety, health, and environmental risks at nuclear sites. •Evaluate DOE's efforts to develop a nuclear weapons infrastructure that responds to current U.S. needs. •Identify better ways to dismantle nuclear weapons, store nuclear materials, and clean up and dispose of waste from nuclear weapons and civilian nuclear facilities. •Determine if U.S. arms control and nonproliferation efforts serve post-Cold War security interests.	•Effectiveness and efficiency in reducing the nuclear weapons infrastructure •U.S. efforts to dismantle nuclear weapons and store or dispose of excess materials •Environmental and health risks at sites •Cleanup and disposal of waste from civilian and defense nuclear facilities •U.S. arms control and nonproliferation efforts
•Identify opportunities for additional regulatory reforms in the natural gas and electricity sectors to increase market competition. •Assess the government's ability to ensure a stable and secure supply of energy at reasonable prices and adequate emergency preparedness. •Evaluate programs designed to foster a balanced, environmentally sound, and sustainable energy future. •Analyze the effectiveness of federal efforts to promote more efficient energy use by public and private sectors.	•Federal initiatives to promote competition in regulated energy markets •National Energy Policy Plan •Environmental impact of energy production and use •Deregulation of electric utility industry •Energy efficiency, renewable energy sources, and alternative fuels
•Identify ways to improve the processes for establishing goals and coordinating and evaluating program results. •Assess progress and provide timely feedback on the effects of key federal and private sector partnerships. •Identify opportunities for savings or alternative ways to achieve science and technology goals. •Recommend better approaches and methodologies to evaluate science and technology programs.	•Overlap and duplication of science and technology programs •Federal programs to improve manufacturing technologies •Research activities at federal laboratories and universities •Evaluating results and impact of scientific research

Table II: Planned Major Work

Issue	Planned major job starts
Examining the missions and management of energy and science agencies	•Identify programs and activities that are no longer essential to DOE's mission. •Identify lessons learned from DOE's experience in acquiring major systems. •Reassess NRC's regulatory mission and functions. •Follow up on DOE's implementation of major contracting reforms. •Review information resource management activities of DOE's contractors. •Identify potential savings at DOE and other agencies through "budget scrubs." •Analyze issues surrounding privatizing power marketing agencies.
Addressing the consequences and implications of the nuclear age	•Assess the cost-effectiveness of DOE's environmental restoration activities. •Assess the accuracy of DOE's estimates for improving cleanup productivity. •Assess the cost-effectiveness of the Cleanup Technology Development Program. •Identify ways to reduce the cost of DOE's landlord services. •Evaluate DOE's ability to maintain nuclear weapons. •Analyze security costs at DOE's facilities. •Assess the effectiveness of U.S. assistance to increase safety of nuclear facilities in former Soviet Union countries. •Assess the status of DOE's efforts to convert Russian research reactors from using high enriched uranium to using low enriched uranium. •Analyze U.S. and international efforts to contain radiation at the Chernobyl nuclear power plant. •Analyze U.S. efforts to assist the Russians in closing aging plutonium production reactors. •Analyze the fixed costs of maintaining the Nevada Test Site and the appropriateness of allocating these costs to the civilian nuclear waste disposal program. •Assess the quality and effectiveness of DOE's tunnel boring activities at Yucca Mountain, Nevada.
Achieving competition and security of energy supplies	•Assess the Federal Energy Regulatory Commission's efforts to promote incentives and market-based rates in the gas pipeline industry. •Analyze DOE's National Energy Policy Plan and related Department of Commerce and DOE studies dealing with oil import vulnerability. •Determine the need for the international energy agencies' emergency oil-sharing system. •Determine the need for and potential impact of mandates to use alternative fuels for private vehicle fleets. •Assess U.S. actions to deal with global climate change. •Analyze management of state-administered energy conservation programs. •Analyze issues surrounding the restructuring of the electric power industry. •Assess progress in meeting mandates of the Energy Policy Act of 1992. •Analyze hydropower licensing and decommissioning.
Assessing outcomes of federal investment in science and technology programs	•Assess the role of Office of Science and Technology policy in establishing priorities for funding science and technology initiatives. •Assess DOE's approach to developing fusion energy. •Assess the Advanced Technology Program. •Assess the effect of the Small Business Technology Transfer Program. •Identify ways to develop renewable energy technologies.

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