



**Remarks by  
Energy Secretary Spencer Abraham  
2004 DOE Budget Submission  
Forrestal Building  
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Thank you and good afternoon. I'm pleased to be here today to give you an overview of the department's budget for the next fiscal year. In doing so, I want to stress the ways that this budget is going to help us accomplish our various missions related to defense, energy, environment and science.

In order to promote energy independence for our country, while dramatically improving the environment, we have developed an ambitious, long-term vision of a zero-emissions future free of reliance on imported energy. With this budget, we begin in earnest to research and develop advances in energy technology that will not merely reduce or ameliorate environmental challenges but eliminate them. That will not merely contribute to our nation's energy security but guarantee it, and that will provide energy and environmental solutions not just for America but also for the world.

Our '04 budget will allow us to move forward aggressively toward our energy objectives, at the same time that we continue to strengthen our defense programs, expand our non-proliferation efforts, accelerate our environmental cleanup programs, and increase our investment in the promise of scientific research.

We are submitting an '04 budget request for approximately \$23.4 billion. Taking into account the DOE activities that are now the responsibility of the Homeland Security Department, DOE's budget will have grown by about 25% over the last three years. I believe this reflects very well on our Department, its programs and its people. This Administration and Congress recognize the critical contribution our work on defense, energy security, the environment and world-leading science and technology makes to a peaceful and prosperous future.

I am sure that all the department's employees take as much pride as I do in the trust our government has placed in the Department. President Bush demands results - and we are delivering them. The dedication, professionalism and skill of DOE's employees show in their work - and have been noted. The Department has proven its worth by taking huge strides in carrying out its varied missions.

I would like to make a general comment, before getting into the meat of our '04 budget submission: The lack of an '03 budget has had an effect both on our ability to execute our plans and on their cost. Like every other government department, we are doing the best we can to deal with the uncertainty that comes with the lack of an approved budget, but programs delayed due to uncertain funding generally - and unfortunately -- end up costing more, and taking longer to complete.

Let me outline the budget for you at the macro-level by major areas, and then delve into each area in more detail. I'll begin with the successful execution of our defense responsibilities: maintaining our nuclear stockpile, rebuilding the capabilities of our defense complex, preventing the spread of nuclear weapons and materials, and continuing our naval reactors program. These alone are huge responsibilities -- and because of our successful efforts in these areas over the past two years, the Department has been entrusted with added responsibilities and the means to execute them more effectively. Our '04 budget submission includes a total of more than \$8.8 billion for these programs, a \$925 million increase over last year.

But our responsibilities do not end with our work related to nuclear weapons and nuclear materials. They extend to our commitment to clean up the legacy of half a century of nuclear defense work. We have begun to see real progress with our accelerated cleanup and closure programs. They will continue with approval of our budget submission of \$7.24 billion for Environmental Management, an increase of \$361 million over the 2003 comparable budget and the highest amount ever requested for these programs.

Energy, of course, is a vital component of our work. We must promote and execute both practical and visionary policies that will secure the energy we need to guarantee our continued economic growth and prosperity today and in the years and decades ahead.

Fortunately, we have developed the policies the country needs. We are moving ahead rapidly and carrying them out successfully. Our successes have generated more ambitious plans and added responsibilities for our Department, particularly in our efforts not just to improve America's energy security in the short term, but also to guarantee it in the long term. Our slightly increased '04 budget submission of \$2.5 billion will allow us to continue with our wide-ranging and aggressive energy effort, at the same time that we conduct the research and development work that will lead to the eventual transformation of our energy economy.

President Bush underlined the importance he attaches to this work with his announcement of a new FreedomFuel Initiative in his State of the Union message last week. I'll be talking more about the Freedom program a little later.

To fulfill all of our responsibilities, we rely, as always, on our remarkable national network of science laboratories and the DOE scientists, engineers, technicians and administrators who produce the scientific breakthroughs and technological advances that propel our work and contribute in dozens of ways to our economic growth and improved standards of living and health.

We propose to spend \$3.3 billion in FY '04 on our Science programs. The Science budget will fund real, programmatic increases of over \$170 million, due in large part to the planned completion of construction projects, which will occur this year.

Now, I'd like to describe for you in more detail a few core programs that are Presidential priorities and account for much of the new budget growth we are proposing.

Let me begin with our defense missions -- starting with what I always describe when I testify before Congress as my most important responsibility as Secretary of Energy - certifying to the president the safety and reliability of our nuclear stockpile.

Our nuclear capability protected the nation and helped us to win a 50-year Cold War. Today it continues to be a key strategic component of our Nation's security posture. Our challenge today is large and complex: We must maintain the safety, security, reliability and effectiveness of our aging nuclear weapons stockpile without resort to underground testing - and also provide a manufacturing base for the production of a replacement weapon if the need should arise.

Our budget proposes \$6.4 billion in spending for stockpile stewardship and rebuilding our Defense Complex, \$532 million more than the 2003 budget. We will use our increased funding to continue advancing the scientific and manufacturing capabilities we need over the long term. Last fall, we awarded a contract to build the two largest supercomputers in the world to help us ensure our long-term ability to certify the safety, reliability and effectiveness of weapons in the stockpile.

We will also continue to refurbish aging weapons under our Stockpile Life Extension Program to ensure that they remain safe and effective. We will continue to dismantle warheads and bombs that are retired from the stockpile, and we will also continue to make progress toward restoring the capability to manufacture and certify war reserve plutonium pits for the stockpile.

Finally, in order to carry out all these activities, our budget funds programs that will allow us to continue to restore, rebuild and revitalize the physical infrastructure of the nuclear weapons complex.

While we work to keep our stockpile ready, safe and secure, we must at the same time expand our already productive efforts to prevent the spread of nuclear weapons and materials. We have in the past two years significantly improved our ability to prevent and reverse the proliferation of weapons of mass destruction, and to protect or eliminate nuclear weapons, weapons-usable nuclear material, and the infrastructure - including plutonium producing reactors and nuclear weapons design and manufacturing facilities -- that supports them.

We have enhanced our ability to detect weapons of mass destruction, including nuclear, chemical, and biological systems, and other terrorist threats, and we have reduced the risk of accidents in nuclear fuel cycle facilities worldwide.

As a result of the unprecedented levels of cooperation reached by President Bush and President Putin to control the proliferation of nuclear materials, Russia and the United States have agreed to complete the work of protecting some 600 tons of Russian fissile material by 2008, a full two years earlier than expected. In addition, the U.S, Russia, and the International Atomic Energy Agency this year will intensify international cooperation to keep radioactive materials - the kind that could be used in the construction of "dirty bombs" --

out of the hands of terrorists. Work in this area will take a large step forward following an international conference - which we will be co-chairing with Russia and the IAEA -- that will take place next month in Vienna.

To carry out these complex tasks, we have increased our total nonproliferation budget to more than \$1.3 billion, a 30% increase over last year's budget. Our non-proliferation budget will make it possible for us to increase our international monitoring visits to sensitive nuclear sites by one-third, and boost our contributions to international safeguards work carried out through the International Atomic Energy Agency and other cooperative programs by 17% over 2003 funding levels.

We will also continue to move ahead with work related to plutonium disposition facilities in the U.S. and Russia to eliminate excess weapons plutonium, and accelerate our program for the elimination of Russian highly enriched uranium.

As we move forward on these fronts, we remain careful to carry out our national security duties with an eye to the prevention of adverse effects to the health of our employees and the public, as well as to the environment. We have two environment-related responsibilities at DOE - to conduct our own defense-related operations in an environmentally sound manner, and, on the energy side, to find and develop the scientific and technological solutions to the production of polluting emissions and unwanted gases. We are making rapid progress in meeting the first of our obligations through the accelerated cleanup program for the waste produced by our defense efforts during the Cold War.

Our progress began in 2002, when our Top to Bottom review of the department's environmental management program revealed that we were concentrating on managing risk rather than reducing it. That review prompted the inclusion of \$1.1 billion of new money in the 2003 budget to begin this new approach of accelerated risk reduction and closure for the remaining DOE cleanup sites.

We are making good progress in this area. By emphasizing performance management planning, enforcing greater accountability, promoting increased competition among contractors, using innovative methods, and offering performance based incentives, among many other reforms, we will accelerate completion of the cleanup programs by 35 years -- to 2035 from 2070 -- reduce risk to the public and the environment - and save taxpayers over \$50 billion in program costs.

Our 2004 environmental management budget request for over \$7.2 billion, \$361 million more than our 2003 request, will allow us to continue on schedule with our reformed cleanup effort. Importantly, the budget, in addition to accelerating our current programs, includes \$90 million for the construction of new facilities for the conversion of depleted uranium hexafluoride at our two gaseous diffusion plants at Paducah, Kentucky site and Portsmouth, Ohio.

Finally, the budget goes beyond cleanup and closure plans with a provision for the creation of a new Office of Legacy Management, which will be responsible for administering the department's obligations after sites have been cleaned up and closed. We want the people living in communities near the cleanup sites to know that the department will never abandon its responsibilities to them.

Turning to the energy sector, our work is designed to make current forms of energy use more secure and environmentally benign while simultaneously preparing the long-term energy solutions that will eventually make questions of supply and environmental effects obsolete.

I want to mention two programs that illustrate the ways in which we can increase the use of abundant domestic energy and reduce the need for imported energy in the short-term, while also preparing these same familiar energy sources for a potentially large part in a transformed energy future.

Some people would be surprised to learn of the vital role safe, clean, low-cost nuclear energy plays in meeting our electricity generation needs. Nuclear power today is an important element in our balanced portfolio of energy sources, supplying 20% of our nation's electricity, a contribution that we intend to maintain or increase in the years to come.

If nuclear energy is to play a significant role in meeting our future energy requirements, we must move forward with both near-term and long-term projects. Our '04 budget will allow us to do that by, first, funding continued work on the Yucca Mountain waste disposal site, and second, by funding research that will bring new technology to the nuclear fuel cycle.

We must devise a better fuel cycle, one that costs less overall, is more environmentally benign, more proliferation-resistant, and points to a sustainable, long-term future for nuclear energy. This is the mission of our new Advanced Fuel Cycle Initiative, or AFCI.

This year's budget request represents a major restructuring of our technology programs focused on the nuclear fuel cycle. We propose to merge existing programs in this area into a single program - AFCI, which will

lead our effort to develop the new technologies needed to achieve our goal.

As efficient as today's nuclear power plants are, they extract considerably less than 10% of the energy contained in nuclear fuel. If it were possible to access the remaining 90%, we would be able to stretch worldwide reserves of uranium by 10 times, from an estimated 100-year supply to a 1,000-year supply. Many countries have tried over the years to tap that huge and elusive source of energy, but they have found the effort to be expensive, environmentally challenging, and rife with proliferation concerns.

I have challenged the Department's best scientists and engineers to engage their peers worldwide to devise new approaches to this issue. AFCI's \$63 million budget for '04 will fund the eventual development of technology designed to turn the plutonium in spent fuel from a proliferation worry into a proliferation-resistant source of energy for the long-term future.

This will be difficult work, but I believe it is research that we can and must pursue to establish a safe, sustainable, and proliferation-resistant future for nuclear energy.

President Bush's Clean Coal Power Initiative also promises tremendous energy benefits to the American people. We plan -- together with our private sector partners - to develop the technologies and processes that will allow us to continue to take full advantage of our lowest cost, most abundant domestic energy resource, which supplies fully 50% of our electricity needs today.

We completed our first solicitation under the Clean Coal Power Initiative last month, selecting eight projects with a total value of \$1.3 billion. DOE expects to contribute about \$316 million to these initial projects.

Our work in support of the clean coal initiative, as well as our carbon sequestration program, will continue as part of the President's Coal Research Initiative in FY '04.

The next clean coal solicitation, which will take place about a year from now, will increase our emphasis on developing advanced technologies that will allow coal to serve as a valuable -- and ultimately a virtually emissions-free - contributor to our energy mix for decades to come.

In particular, we are increasing our concentration on carbon sequestration - the capture and permanent storage of carbon dioxide produced by coal - which will be a key to achieving this Administration's goal of developing methods and technologies to reduce, avoid or capture greenhouse gas emissions.

Our '04 budget request for carbon sequestration research is \$62 million, an increase of more than 40% over last year's \$44 million request. The proposed budget will allow us to pursue an aggressive carbon sequestration research program that will include a Regional Partnership Program to develop public-private partnerships that address technical sequestration issues that are peculiar to various geographic regions of the country. We will also advance the President's Clear Skies and Climate Change initiatives by developing sequestration strategies and technology solutions that could lead to zero emissions energy plants that make use of total sequestration of effluent streams.

Thus far I have talked for the most part about executing our national and energy security missions by expanding or improving on what we are already doing.

The budget goes beyond all this, however, to include the initial down payments on what will be a substantial, multi-year investment in achieving our long-term vision of an independent, zero emissions energy future.

This budget will not merely maintain and improve what we already have in the energy sector - it will begin in earnest our effort to change fundamentally the energy underpinnings of our economy.

All the energy trends dictate that we make dramatic changes. Energy demand in the United States is projected to increase by well over 40 percent over the next 25 years. President Bush has set ambitious goals for the steady reduction of polluting emissions and greenhouse gases from energy production over the next 10 to 15 years with his Clear Skies and Climate Change initiatives. In addition, the introduction of hybrid motor vehicles, which has already begun and will be accelerated through the research and development programs underway through our FreedomCAR initiative, will also help reduce pollutants and the rate of increase in the demand for energy.

But no matter how much cleaner and more efficient we can make today's energy sources, we will still be devoting enormous amounts of money, time and effort to the job of controlling emissions. And energy imports will increase over the next 25 years to account for over two-thirds of the oil we use. In short, no matter how advanced the technologies we develop and apply to conventional energy sources, the trends are against us.

The long-term solution is to transform our energy foundation and, therefore, our energy future. Those are the

long-term promises offered by the final two programs I will highlight today. The first is the potential of fusion to produce electricity - and hydrogen - in a safe, economical and environmentally benign manner. The second is our focus -- intensified by the President's announcement last week of his FreedomFuel initiative -- on the limitless potential of hydrogen to power our economy with virtually no adverse environmental effects.

Nuclear fusion, the physical process that powers the sun, is an energy source of the future that could transform the way we produce electricity. By reproducing the sun's process for transforming matter into energy, we can create a new energy source for the benefit of mankind. A source:

- That would produce no greenhouse gases or other polluting emissions
- That would produce no high-level nuclear waste or fissionable materials, and
- That would be extraordinarily safe to operate. And, incidentally,
- That could have a prominent role in the production of hydrogen later in this century.

Fusion's potential is too great to ignore, and this Administration wants to grasp it by rejoining ITER, the International Thermonuclear Experimental Reactor project. ITER is an international fusion energy research and development project designed to take the next major step in the development of fusion energy. ITER's members - Canada, the European Union, Japan, Russia and soon China -- have overcome many technical and economic challenges in recent years to complete the design and define the technical objectives of the experimental reactor, the first of its kind.

ITER will be the world's largest international cooperative research and development project next to the space station. It will take about 10 years to build, at a cost of approximately \$5 billion -- and operate for about 20 years.

We estimate our investment in ITER over the next 10 years will total \$500 million, plus contingency and inflation. This is obviously a major investment that reflects the seriousness we attach to this venture into new realms of scientific understanding. There is enormous potential in fusion, and we want to lead in its development with our ITER partners.

As you know, President Bush spoke of the remarkable potential of hydrogen as the transportation fuel of the future in his State of the Union Address. This Administration is determined to move us forward to a world in which new, abundant, safe and clean fuels replace our current energy sources.

The President's new FreedomFuel initiative, together with the FreedomCAR initiative, announced one year ago, to develop hydrogen fuel-cell technology for vehicles, will dramatically increase our investment in the complex research and development effort to produce a personal transportation fleet powered by hydrogen fuel cells, and the infrastructure to support it.

It will, to borrow the striking image used by the President, make it possible for the first car driven by a child born today to be powered by hydrogen, and pollution-free.

Our Freedom programs will require a large investment in a national effort of great complexity. So complex that the participation of government is essential to coordinate the high-risk R&D work of numerous private sector partners and our national network of science laboratories.

Government coordination of this huge undertaking will help resolve one of the difficulties associated with the development of a commercially viable hydrogen fuel-cell vehicle: the "chicken and egg" question. Which comes first, the vehicle, or the infrastructure of manufacturing plants, distribution and storage networks, and the convenient service stations needed to support it? The Freedom programs answer the question by proposing to develop both the vehicle and the infrastructure in parallel - and by so doing advance a commercialization decision by 15 years, from 2030 to 2015.

The Freedom programs are exactly the right kind of effort for government to invest in because the potential benefits of a hydrogen personal transportation fleet are so large. The Freedom programs will tangibly - and positively -- affect the life of every single American, beginning with the cars we drive and extending to the way we heat our homes and power our businesses.

The achievements of the FreedomCAR and FreedomFuel programs will come from the private sector, which will create the products that ultimately must win favor in the free market. The federal government will assist, aid, coordinate, sponsor, and fund. But we will not pick one technology over another, or insist that our partners follow a path we dictate.

Over the next five years, we will spend approximately \$1.7 billion for FreedomCAR and FreedomFuel. Our '04 budget request will nearly double '03 spending for our hydrogen and fuel cell R&D partnerships with the private sector. We have drawn a roadmap to zero emissions and energy independence with the Freedom program, and we are going to fully fund this exciting ride into the future.

The money will be focused on overcoming the daunting challenges of fuel cell cost; hydrogen production using fossil fuels, nuclear energy and renewable energy sources; on-board hydrogen storage, and infrastructure.

Our plan is to develop the technologies that make practical and affordable fuel cell vehicles possible, which will, in turn, allow automakers to commercialize fuel cell vehicles that consumers will want to buy and drive. We estimate that by 2020 we will have begun to reduce our reliance on imported oil, and to eliminate polluting emissions and greenhouse gases - and we will have done it without affecting the freedom of personal mobility Americans demand.

There is a great deal of work to be done - but the promise of the Freedom program is real and achievable. Hydrogen presents us with the possibility of a transformed transportation sector -- along with many other possible commercial, residential and industrial applications.

Someday, I believe, Americans will look back on the transition to a hydrogen economy as one of the most important - if not the most important - national scientific/technological achievements in our history.

In the end, we will succeed because we will have some of the best minds in government and the private sector working on what we do best - scientific research and technology development -- backed by the commitment of the federal government and the realization of the automotive and energy industries that hydrogen is indeed the fuel of the future.

I have concentrated today on just a few highlights for our planned budget and activities for fiscal year 2004. We haven't enough time to talk about the various programs underway to increase domestic production of oil and natural gas; and to enhance or initiate trade relationships with oil and gas-producing nations, from our neighbors Canada and Mexico to the nations of Africa to Russia and elsewhere.

Nor have I had time to discuss the amazing research of our Office of Science in such fields as nanoscience, high performance computing and networking, the human genome and the development of an artificial retina that promises the gift of sight to thousands who are blind today. There is much more, and our increased Science budget reflects the importance of this work.

I haven't had time to talk in any detail about the many Energy Efficiency and Renewable Energy projects our budget will fund to further develop wind, solar, hydropower and biomass technologies, as well as programs to increase energy efficiency by significant amounts in industrial, commercial and residential applications.

The Department of Energy does many things, and does them well. I hope that among the impressions you take away from today's talk are these:

- That our department's responsibilities are heavy and far-reaching
- That we are growing
- That we have the confidence and trust of this Administration and Congress - and because of it we are receiving the resources we need to carry out our mission
- That our work is important not only this year and next year and the year after that -- but that it will reverberate down through the decades and into the next century, for the benefit of future generations, and
- That America is fortunate at this time in its history to have so talented and devoted a group as the Department's employees to conduct the research, develop the technologies, and drive and support the programs that are doing so much to ensure America's national security.

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