

**THE FISCAL YEAR 2013 DEPARTMENT OF ENERGY
BUDGET**

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY AND POWER
OF THE
COMMITTEE ON ENERGY AND
COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED TWELFTH CONGRESS
SECOND SESSION

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MARCH 8, 2012
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THE FISCAL YEAR 2013 DEPARTMENT OF ENERGY BUDGET

THURSDAY, MARCH 8, 2012

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY AND POWER,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:07 a.m., in room 2123 of the Rayburn House Office Building, Hon. Ed Whitfield (chairman of the subcommittee) presiding.

Members present: Representatives Whitfield, Sullivan, Shimkus, Walden, Terry, Burgess, Bilbray, Scalise, Olson, McKinley, Gardner, Pompeo, Griffith, Barton, Upton (ex officio), Rush, Inslee, Dingell, Markey, Engel, Green, Doyle, and Waxman (ex officio).

Staff present: Anita Bradley, Senior Policy Advisor to the Chairman Emeritus; Maryam Brown, Chief Counsel, Energy and Power; Allison Busbee, Legislative Clerk; Patrick Currier, Counsel, Energy and Power; Garrett Golding, Professional Staff Member, Energy and Power; Mike Gruber, Senior Policy Advisor; Cory Hicks, Policy Coordinator, Energy and Power; Heidi King, Chief Economist; Ben Lieberman, Counsel, Energy and Power; Dave McCarthy, Chief Counsel, Environment/Economy; Mary Neumayr, Senior Energy Counsel; Jeff Baran, Democratic Senior Counsel; Phil Barnett, Democratic Staff Director; Greg Dotson, Democratic Energy and Environment Staff Director; Caitlin Haberman, Democratic Policy Analyst; and Angela Kordyak, DOE Detailee.

Mr. WHITFIELD. I will call this hearing to order, and the subject of today's hearing is "The Fiscal Year 2013 DOE Budget." And we only have one witness today, and that is Secretary Chu. And we appreciate very much your being here with us this morning, Mr. Secretary. We certainly have a lot of questions, and we look forward to your comments as well.

And at this time I would recognize myself for an opening statement.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

I would start off by simply saying that I think just about everyone agrees that America's air quality is among the best in the world, and there is no question that the Obama administration is totally focused on transforming the energy delivery system in America. And the reasons given for that are, number one, to make the air quality even cleaner; and number two, Ms. Jackson and oth-

ers frequently talk about regulations create more jobs. And I might also say that I have never, ever seen an administration go after one industry the way this administration is going after the coal industry.

President Obama, when he was campaigning, was in San Francisco and he said they can build coal plants but they will go bankrupt. And even you have made comments about how bad coal is and many other people in the administration and, you know, that is fine. That is you all's views and many of us disagree with that.

And from looking at the budget that you have proposed, you are asking for an increase I guess of about \$856 billion, and in the scheme of things that is not that much money. But we have a \$16 trillion Federal debt and any kind of increases are significant in today's atmosphere. And when I look at that budget, when I read that budget, it appears to me that America is moving as fast as it can to adopt the European model for energy production. And I recently have read a number of articles about the things that are going on in Europe. We know that in Spain they place great emphasis on wind energy. They have an unemployment rate of 22 percent. There was the study from Juan Carlos University that talked about for every green job created there was a loss of two jobs in traditional industries.

And one of the things that I find most disturbing about this is it looks like EPA is setting the energy policy for America. Now, the most comprehensive regulation coming out of EPA relates to Utility MACT. And Mrs. Jackson has never been able to give us a total cost. In fact, no one has been able to give us a total cost outside experts who have testified that it would be up to \$90 billion. But EPA said that they could expect to close maybe 14 gigawatts of coal plants and even NERC is saying that it will be more like 36 or 59 gigawatts. And NERC also, in a November report, indicated reliability was going to be a serious issue.

And yet, whether it is in transportation or it is in electricity production, this administration is totally moving to, on the transportation side, provide all sorts of grants and loan guarantees to technologies, many of which have not proven to be able to deliver. Solyndra. We have got Fisker not going to open up the Delaware plant. We have got A123 Battery Systems that is reducing their employment.

And my time is running out here, but I was just reading some of the headlines in Europe. "EU Faces 20 Years of Rising Energy Bills," "Wind and Solar Subsidies Drying Up in Europe," "Wind Turbines in Europe do Nothing for Emission Reduction Goals," "Germany's Rising Cost of Going Green," "Czech Electricity Grid Company Ready to Block German Wind Power." And so my whole point is that this administration is moving so fast and is so determined to transform the energy sector in America that I don't think they are giving adequate consideration to the consequences of that.

So that is what I, as one individual representing 700,000 people, am most concerned about.

[The prepared statement of Mr. Whitfield follows:]

OPENING STATEMENT OF CHAIRMAN ED WHITFIELD
Hearing of the Subcommittee on Energy & Power
March 8, 2012
“DOE Budget Overview”

(As Prepared for Delivery)

There is no question that the nation currently faces serious energy challenges, but I have concerns about the areas in which the Department of Energy is focusing its priorities.

It seems to me that conventional energy sources have, at best, taken a backseat to other types of energy sources like wind and solar. While there is a role for federal research and development of new energy sources and technologies, we need to make sure that taxpayers' money is spent where we will get the biggest bang for their buck.

Most notably, coal is a proven, reliable, abundant, and affordable source of domestic energy, and one that has become dramatically cleaner in the past few decades. In contrast, many people's favorite alternatives like wind and solar energy are proving to have major limitations. In my view, they are not capable of taking the load away from coal, at least not without serious harm to electricity affordability as well as reliability.

We all need to recognize what we learned with the Solyndra loan guarantee. Solyndra is the first of a growing list of loan guarantee recipients that face bankruptcy and layoffs, and this should concern us all. Even the recipients that are not facing bankruptcy have yet to come up with genuinely worthwhile breakthroughs.

It is also important to ask what the Department of Energy's budget has in store on the energy issue that is foremost in the American people's minds. Nearly 100 years have gone by since the New York Times proclaimed electric vehicles as the vehicle for the future, and we aren't any closer to an electric vehicle that people would actually want.

Most recently, I'm concerned about two companies scheduled to get more than a half billion dollars each in loan guarantee money – Fisker Automotive and Tesla Motors – have only sold a handful of their high priced electric vehicles, mostly to Hollywood celebrities.

These are just a few topics that I'm concerned about. We need to ensure that taxpayer money is being spent wisely and I look forward to hearing from the secretary further about his views on these subjects and others that might be discussed today.

I now would like to recognize the Ranking Member, Mr. Rush for a five minute opening statement.

And my time has expired, so at this time I would like to recognize Mr. Rush for his 5-minute opening statement.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. Thank you, Mr. Chairman.

And thank you, Mr. Secretary, for being here. Mr. Secretary, it is always a pleasure to have you appear before this subcommittee. And I want to take a moment just to commend you for your knowledge, your expertise, and your leadership in directing this important agency at such a critical time in our Nation's history.

As you know, high gasoline prices are on the minds of every American, my constituents and others. I am concerned about these high gas prices. And although we all understand that fuel prices are influenced by a variety of geopolitical factors, to hear my Republican colleagues tell it, it is the President and his energy policies that are contributing enormously to these sky-high prices. And of course, Mr. Secretary, you and I will agree that does not explain—the definition does not explain why gas prices skyrocketed from just over \$1.50 a gallon in 2001 when President Bush took office to just under \$4.00 a gallon in spring of '08 before the Bush recession took our economy over the cliff. But that is an argument for another time. I don't want to belabor that at this moment.

Mr. Secretary, as the person who heads the Energy Department, I would like to hear your thoughts on how the Obama administration's policies have helped the American consumers through fuel efficiency measures to promotional renewable sources of energy and other forward-thinking policies that are necessary to move America forward and to wean us off of imported oil. I would like also to get your comments on the record regarding the levels of fuel consumption, importation of foreign oil, and oil and gas production during the Obama administration. The research I have seen show that under President Obama we are importing less oil now than any other time in the last 13 years. Research also shows that we are producing more oil now domestically than we were at any time in the last 8 years. In fact, since President Obama opened up millions of new acres for oil and gas exploration, the U.S. now has more working oil and gas rigs than the rest of the world combined.

Additionally, your agency recently reported that the average fuel demand has actually dropped 6.7 percent as compared to the same time last year. Yet, despite all of these effects, gas prices have continued to climb much faster and far earlier than in previous years. And of course, my friends on the other side, those who want to blame the President and those who have got a keen eye, a sharp eye toward these November 2012 elections are using this as a way to make political hail against the administration's policies. As you will hear repeated time and time and time again, the constant refrain of those on the other side will be pointing the finger at the President and solely at the president.

Mr. Secretary, again, I want to welcome you today and I look forward to your testimony. I look forward to you setting the record straight, finally I hope setting the record straight but I am not too confident that even though you are setting the record straight that it will remain set. Your comments in the past as they have been

will be distorted, taken out of context, and used for political violence and political verbiage and used for political gain. But please inform the American people of the true benefits of having an energy policy that is forward-looking, that will help us plan ahead for the future so the Congress will not have this same finger-pointing debate 10, 20, or 30 years down the road.

Thank you, Mr. Secretary. And I yield back the balance of my time.

Mr. WHITFIELD. Thank you.

At this time, I recognize the chairman of the full committee, Mr. Upton of Michigan, for 5 minutes.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman.

And Mr. Secretary, welcome. Today's hearing on the Department of Energy's fiscal year 2013 budget comes at a very critical time for energy policy in the country for sure.

Gasoline prices continue their march toward and probably past \$4.00 per gallon. We remain dependent on unstable foreign sources of oil despite abundant untapped domestic supplies, as well as Canadian supplies that this administration so far has blocked from coming into the U.S. And at the same time, residential electricity prices have been increasing every year over the last decade.

Mr. Secretary, you have raised some eyebrows with your comments on gas prices early on and about the administration's overall energy policy. Many of us were stunned by your past suggestion sometime ago that, "somehow we have to figure out how to boost the price of gasoline to the levels in Europe." And more recently, last week you were asked whether your overall goal was to lower gasoline prices, and your answer was, "no." You said the goal was to decrease dependency on oil—a long-term goal for sure—which means we are not necessarily focused on reducing prices for families and small businesses that are struggling today.

Increased energy prices mean that energy households are spending a greater percentage of their income on energy costs, leaving them with less money for food, healthcare, education, other basic necessities. So what has the President done to help us? Well, he twice rejected the Keystone Pipeline project and the job creation and secure energy supplies that it would deliver. His solution to higher gas prices appears to certainly threaten our emergency oil supplies by tapping SPR rather than opening more Federal lands to domestic energy development.

Instead of eliminating regulatory red tape, he has imposed costly new regs on our power sector that certainly are going to drive up the electricity prices. He recently did begin to brag about—that he supports an "all-of-the-above" energy policy, but these actions look more like a policy of "nothing from below." Oil production opportunities remain blocked, layers of new Federal regs contemplated for natural gas development, costly rules designed to squeeze out coal, and the sad saga of Yucca Mountain, halting development of a long-term repository and raising questions about our long-term nuclear prospects.

So the President's proposed fiscal year 2013 budget for the DOE is not "all-of-the-above." Rather, it seeks to transform the energy portfolio based on unproven and more expensive alternatives. Certainly, his budget proposes to slash funding for proven energy resources such as coal, nuclear, hydro, while significantly increasing funding for high-cost, high-risk energy alternatives. And although many of us do support alternative energy sources—they are laudable goals—there is a place for research, for sure, but questions are placed as to whether or not they really produce a healthy overall economy

So we welcome your testimony today. We look forward to your answers.

[The prepared statement of Mr. Upton follows:]

**Opening Statement of Chairman Fred Upton
“The FY 2013 DOE Budget”
Subcommittee on Energy and Power**

March 8, 2012

(As Prepared for Delivery)

Today’s hearing on the Department of Energy’s Fiscal Year 2013 Budget comes at a critical time for energy policy in this country.

Gasoline prices continue their march toward \$4.00 per gallon. We remain dependent on unstable foreign sources of oil despite abundant untapped domestic supplies, as well as Canadian supplies this administration is blocking from coming into the United States. At the same time, residential electricity prices have been increasing every year over the last decade.

Mr. Secretary, you have raised some eyebrows with your comments on gas prices and what it says about this administration’s overall energy policy. Many of us were stunned by your past suggestion that, “Somehow we have to figure out how to boost the price of gasoline to the levels in Europe.”

More recently, just last week you were asked whether your overall goal was to lower gasoline prices, and you said “no.” You said the goal was to decrease dependency on oil – a long-term goal to be sure – which means you’re not focused on reducing prices for families and small businesses struggling today.

Increased energy prices mean American households are spending a greater percentage of their incomes on energy costs, leaving them with less money for food, healthcare, and other basic necessities.

So what has the President done to help solve our energy problems?

President Obama has twice rejected the Keystone XL pipeline project and all the job creation and secure energy supplies it would deliver.

President Obama’s solution to higher gas prices is to threaten to siphon from our emergency oil supplies by tapping the Strategic Petroleum Reserve rather than opening more federal lands to domestic energy development.

Instead of eliminating regulatory red tape, President Obama's EPA has imposed costly new regulations on our power sector that will drive up electricity prices, make it impossible to build new coal-fired generation in this country, and threaten the reliability of the electric grid.

The President has recently begun to brag that he supports an "all of the above" energy policy, but these actions look more like a policy of "nothing from below." Oil production opportunities blocked. Layers of new federal regulations contemplated for natural gas development. Costly rules designed to squeeze out coal. And the sad saga of Yucca Mountain, halting development of a long-term repository and raising questions about our long-term nuclear prospects.

The President's proposed Fiscal Year 2013 Budget for the Department of Energy is not an "all of the above" policy. Rather, it seeks to transform the U.S. energy portfolio based on unproven and more expensive alternatives.

Indeed, the President's budget proposes to slash funding for proven energy resources such as coal, nuclear, and hydropower, while significantly increasing funding for high-cost, high-risk energy alternatives.

The President's budget proposal makes clear that this Administration has learned nothing from its failed Solyndra experiment and that DOE wants to continue to gamble with taxpayer dollars.

Developing alternative energy sources and technologies are laudable goals, and there is a place for research. The problem occurs when a higher priority is placed on a green economy than a healthy overall economy.

Unlike the President's proposed DOE budget, Members of this Subcommittee support a true "all of the above" energy policy – a policy that recognizes both economic and environmental considerations. A policy that relies primarily on market forces to drive innovation and efficiency.

But words are not enough, which is why this Subcommittee has worked hard this Congress to pass several energy bills that would help to mitigate the energy problems we face while doing so in an environmentally responsible manner. Simply put, energy is a jobs issue. We need affordable energy to fuel our economy.

I look forward to today's discussion and thank Secretary Chu for his participation here today.

And I yield the balance of my time to Mr. Barton.

OPENING STATEMENT OF HON. JOE BARTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. BARTON. Thank you, Mr. Chairman.

And Secretary, it is always good to see you. We love to have you come before us and give us your views on the state of the Department of Energy.

Today, we are going to talk about DOE's budget. We saw that the total budget request by the President was a little over \$27 billion and just coincidentally is saw that overall the Obama administration last year spent over \$24 billion on alternative energy projects. It is obvious that some of that money hasn't been too well spent. I continue to be concerned about Solyndra. I continue to believe that that project has been mismanaged by your department. I am going to ask you some questions when I am allowed to what changes if any have been made in the management of the Loan Guarantee Program. It is obvious that mistakes have been made and I think some laws have been violated with regards to the subordination situation. But I would hope that you would be able to tell me that things are being corrected and those practices of the past won't happen again.

But we are always glad to see you, sir, and we look forward to your answers. I would yield to whoever I am supposed to. If not, I yield back to the Chairman.

Mr. WHITFIELD. The gentleman yields back.

At this time, I would like to recognize the gentleman from California, Mr. Waxman, for a 5-minute opening statement.

OPENING STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Thank you, Mr. Chairman.

And Secretary Chu, we are pleased to see you again at our committee.

There are a lot of energy challenges that we are facing, and you are going to be asked about them by members of our committee. But the American people are concerned about high gasoline prices, and I think, because of our dependence on oil, oil itself, that is leading us to our higher prices in gasoline.

Oil is priced in a world market, and so even if we produce more oil in the United States, that is not going to lower the price of gasoline here because we have oil priced based on what the world price is. Canada, for example, should be the utopia the Republicans pray for. In Canada, they produce more oil than they consume, and yet their prices are just as high as ours. And their people are complaining about the high price of gasoline as well.

So when we hear Republicans saying, "Produce more oil," they are doing what the oil companies want, but it is not going to reduce the price of gasoline.

Energy economists tell us the Republican plan is not even "remotely possible" to reduce the price of gasoline. It will have zero effect on gasoline prices, so we need to face reality. And the reality is that oil prices are determined on a global market. And no matter

how much we drill here, our gasoline prices are going to rise if there is a crisis in the Middle East, if there is a fear about disruption from Iran, if there is a labor unrest in Nigeria, if OPEC sees that there is too much oil and they decide to reduce the supply and the demand is increased in China and in India.

So there is only one way we can protect ourselves from the impacts of rising oil prices, and that is if we reduce our demand for oil.

That brings us to another energy challenge that we face. We have to invest in clean energy to diversify and reduce our energy use. We are locked in a competition with China and other countries in the future of clean energy. And if clean energy is our future and we are not investing in that as House Republicans call on us to strike those investments, we are going to lose out on jobs and the future.

We have to also confront the enormous challenge of climate change, which threatens our economic strength, our national security, and the health of our citizens. Yet rather than confront this challenge, the Republicans deny the science and they vote to block all action on climate change.

Democrats and Republicans in Congress seem to have two completely different visions of our future. The President says we need to listen to scientists and energy experts and become the world leaders in clean energy economy of the future. House Republicans deny the science, and they seem to want to obstruct the President every step of the way.

In spite of these constant obstructions and attacks on common-sense policy, the administration has made significant advances. The President has acted to cut the emissions of cars and trucks, doubling the fuel efficiency of our fleet. As a result, our energy dependence on oil has declined.

The Department of Energy has made significant investments in renewable energy and we are seeing the results. Even while our economy has struggled during the last 3 years, the solar industry doubled the number of American solar jobs from 46,000 to more than 100,000. U.S. wind industry has added more than 35 percent of all new generating capacity over the past 4 years, second only to natural gas. The percentage of those wind components manufactured in the U.S. has more than doubled.

The Department of Energy is looking at a weatherization program to improve energy efficiency of more than 750,000 homes across the Nation. That is a savings for low-income families on average of \$437 a year in heating and cooling costs alone.

You won't hear much about these accomplishments from the Republicans. They are going to talk about Solyndra and Keystone. We will hear the President's budget didn't include enough money for fossil fuels or nuclear power. We are not going to hear about real solutions from the Republicans. They are playing politics with this issue. We need to get on with the job of making sure America is less dependent on oil, that we have a future in the clean energy sector, that our consumers can face lower gasoline prices as we move away from our dependence on oil.

I yield back my time.

Mr. WHITFIELD. Thank you, Mr. Waxman.

That concludes the opening statements. And as I said earlier, we only have one witness today, and that is the Honorable Steven Chu, Secretary of Energy.

And so, Mr. Secretary, you are recognized for 5 minutes for an opening statement.

STATEMENT OF STEVEN CHU, SECRETARY, DEPARTMENT OF ENERGY

Mr. CHU. Thank you. Chairman Whitfield, Ranking Member Rush, Chairman Upton, Ranking Member Waxman, and members of the committee, thank you for the opportunity to discuss the Department of Energy's fiscal year 2013 budget request.

To promote economic growth and strengthen security, President Obama has called for an "all-of-the-above strategy" that develops every source of American energy. The President wants to fuel our economy with domestic energy resources while increasing our ability to compete in the clean energy race. The Department's fiscal year 2013 budget request of \$27.2 billion is guided by the President's—

Mr. WHITFIELD. Mr. Secretary, excuse me for interrupting just a minute. Mr. Rush said that he cannot hear you. Is your microphone on?

Mr. CHU. I am wondering actually—I have been having difficulty hearing you as well. If the person in charge of the audio-visual can crank it up a little bit? That seems to be better.

Mr. WHITFIELD. All right, thank you.

Mr. CHU. To promote economic growth and strengthen security, President Obama has called for an "all-of-the-above strategy" that develops every source of American energy. The President wants to fuel our economy with domestic energy resources while increasing our ability to compete in the clean energy race.

The Department's fiscal year 2013 budget request of \$27.2 billion is guided by the President's vision, our 2011 Strategic Plan and our inaugural Quadrennial Technology review. It supports leadership in clean energy technologies, science, and innovation, and nuclear security and environmental cleanup.

Decades ago, the Energy Department's support helped to develop the technologies that have allowed us to tap into America's abundant shale gas—and I might add—oil resources. Today, our investments can help advance technologies that will unlock the promise of renewable energy and energy efficiency. The budget request invests approximately \$4 billion in our energy programs. It advances progress in areas from solar to offshore wind to carbon-capture utilization and storage to smart grid technologies, and it helps develop next-generation biofuels, advanced batteries, and fuel efficient vehicle technologies to reduce our dependence on foreign oil, which every day places a crushing burden on families and on our economy.

As the President and I have said, there is no silver bullet, but we can and must pursue a serious, long-term, all-of-the-above approach that diversifies our transportation sector, protects consumers from the high gas prices, harnesses American resources, and creates jobs here and at home. That is exactly what this budget does.

The budget request also invests \$770 million in the Nuclear Energy Program to help develop the next generation of nuclear power technologies, including small modular reactors. It includes funding for continued nuclear waste R&D, which aligns with the recommendations of the Blue Ribbon Commission on America's Nuclear Future. As we move to a sustainable energy future, America's fossil fuel energy resources will continue to play an important role in our energy mix.

The budget request includes \$14 million as part of a \$45 million priority R&D initiative by the Departments of Energy, Interior, and EPA to understand and minimize potential environmental, health, and safety impacts of natural gas development through hydraulic fracking. The budget also promotes energy efficiency to help American's save money by saving energy and it sponsors R&D on industrial materials and processes to help U.S. manufacturers cut costs.

To maximize our energy technology efforts in areas such as batteries, biofuels, electric grid technologies, we are coordinating research and development across our basic and applied research programs and ARPA-E. And to encourage the manufacturing and deployment of clean energy technologies, the President has called for extending proven tax incentives, including the Production Tax Credit, the 1603 program, and Advanced Energy Manufacturing Tax Credit.

Competing in the new energy economy requires our country to harness all our resources, including American ingenuity. The budget request includes \$5 billion for the Office of Science to support basic research that could lead to new discoveries and help solve energy challenges. It continues to support Energy Frontier Research Centers, which aim to solve specific scientific problems to unlock new clean energy development. It also supports the five existing Energy Innovation Hubs and proposes a new hub in electricity systems. Through the hubs, we are bringing together our Nation's top scientists and engineers to achieve game-changing energy goals.

Additionally, the budget request includes \$350 million for ARPA-E to support research projects that could fundamentally transform the ways we use and produce energy. Taken together, our research initiatives will help rev up America's great innovation machine to accelerate energy breakthroughs.

In addition to strengthening our economy, the budget request also strengthens our security by providing \$11.5 billion for the National Nuclear Security Administration. Finally, the budget requests include \$5.7 billion for the Office of Environmental Management to protect public health and the environment by cleaning up radioactive legacy waste from the Manhattan Project and the Cold War.

This budget request builds on progress that has been made by the EM program. By the end of 2011, the program had reduced its geographic footprint by 66 percent, far exceeding its goal of 40 percent. The budget request makes strategic investments to promote our prosperity and security. At the same time, we recognize the country's fiscal challenges and are cutting back where we can. We are committed to performing our work efficiently and effectively.

Countries around the world recognize the clean energy opportunity and are moving aggressively to lead. This is a race we can win but we must act with fierce urgency.

Thank you, and I will be pleased to answer your questions.

[The prepared statement of Mr. Chu follows:]

**Statement of Secretary Steven Chu
U.S. Department of Energy
Before the
Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives**

**FY 2013 Budget Hearing
March 8, 2012**

Chairman Whitfield, Ranking Member Rush and Members of the Committee, thank you for the opportunity to appear before you today to discuss the President's Fiscal Year 2013 Budget request for the Department of Energy.

To promote economic growth and strengthen national security, President Obama has called for "an all-out, all-in, all-of-the-above strategy that develops every source of American energy – a strategy that is cleaner and cheaper and full of new jobs." The President wants to fuel our economy with domestic energy resources while increasing our ability to compete in the global clean energy race.

Although the United States has reclaimed the title of world leader in clean energy investments, we are at risk of falling behind again unless we make a sustained federal commitment to supporting our domestic clean energy economy. To compete globally, America has to do more than invent technologies, we also have to produce and sell them. Our country faces a stark choice: we can create jobs making and exporting the energy technologies of tomorrow or we can cede leadership to other countries that are investing in these industries. As President Obama re-iterated in his State of the Union address, passing a Clean Energy Standard is a vital step that Congress can take to broaden our clean energy market and promote U.S. leadership.

Making the most of America's energy resources is a pillar of the President's economic blueprint to build an economy that lasts. The Energy Department also supports other key elements of the President's agenda including leading in innovation, reducing our dependence on

oil, cutting costs for families, businesses and manufacturers through energy efficiency and reducing nuclear dangers worldwide.

Guided by the President's vision, the Department's 2011 Strategic Plan and our inaugural Quadrennial Technology Review, our FY13 budget request of \$27.2 billion invests in the following priorities:

- Accelerating the transformation of America's energy system, and securing U.S. leadership in clean energy technologies;
- Investing in science and innovation to promote our nation's economic prosperity; and
- Keeping Americans safe by enhancing nuclear security through defense, nonproliferation and environmental cleanup.

These priorities will be enabled through a continuing commitment to fiscal responsibility and management excellence.

Leading in the Energy Technologies of the 21st century

Last year, a record \$260 billion was invested globally in clean energy, and trillions of dollars will be invested in the coming decades. To seize this market and job creation opportunity, the President's budget request invests in programs that advance research, development, manufacturing and deployment of the energy technologies of the future.

Decades ago, support from the Energy Department helped to develop the technologies that have allowed us to tap into America's abundant shale gas resources. Today, our investments can help us advance technologies that will unlock the promise of renewable energy and energy efficiency.

The budget request invests approximately \$4 billion in our energy programs. It supports the Department's SunShot initiative to make solar energy cost-competitive with any other form of electrical energy, without subsidy, by the end of the decade. It advances technological progress in areas ranging from offshore wind to carbon capture, utilization and storage to smart grid and energy storage. And it helps reduce our dependence on oil by developing the next

generation of biofuels and accelerating research in advanced batteries and fuel-efficient vehicle technologies. Families again are feeling the pinch of high gas prices. As the President and I have said, there is no silver bullet to this challenge, but we can and must pursue a serious, long-term, “all of the above” approach that diversifies our transportation sector, protects consumers from high gas prices, harnesses American resources, and creates jobs here at home. That’s exactly what this budget does.

Leadership in nuclear energy technologies is also essential to our ability to compete globally. The budget request invests \$770 million in the nuclear energy program to help develop the next-generation of nuclear power technologies, including small modular reactors. It also includes funding for continued R&D on the storage, transportation and disposal of nuclear waste, which also aligns with the recommendations of the Blue Ribbon Commission on America’s Nuclear Future.

As we move to a sustainable energy future, America’s fossil energy resources will continue to play an important role in our energy mix. President Obama is committed to developing our oil and gas resources in a safe and sustainable manner. Last year, our oil import dependence was at its lowest level in 16 years, oil production reached its highest level in eight years and natural gas production set a new record. Building on this progress, the Energy Department’s budget request includes \$12 million as part of a \$45 million priority research and development initiative by the Departments of Energy, the Interior, and the Environmental Protection Agency to understand and minimize the potential environmental, health and safety impacts of natural gas development through hydraulic fracturing (fracking).

The budget request also promotes energy efficiency to create jobs and to help Americans save money by saving energy. It supports home weatherization and calls for passage of the HOME STAR program to provide incentives to homeowners to make energy efficiency upgrades. It also invests in research and development to improve building efficiency and supports the President’s “Better Buildings” Initiative to catalyze private sector investment in commercial building efficiency. Finally, the budget request sponsors R&D on industrial

materials and processes to help U.S. manufacturers cut costs and improve their global competitiveness.

To maximize our energy technology efforts, the Department is breaking down silos and coordinating research and development across our program offices. Modeled after our SunShot initiative, we're bringing together our basic and applied research programs and ARPA-E to harmonize their work in areas including batteries, biofuels and electric grid technologies.

And to encourage manufacturing and deployment of clean energy technologies, the President has called for renewing and extending proven tax incentives including the Production Tax Credit, the 1603 cash payment in lieu of tax credit program and the Advanced Energy Manufacturing Tax Credit, known as 48C.

As industry, Congress and the American people make critical energy decisions and require greater understanding of domestic and international energy markets, it's important that we adequately fund the Energy Information Administration, the nation's premier source of independent statistical information about energy production and use. That is why the budget request includes \$116 million for EIA.

Unleashing U.S. Innovation to Create Jobs and Lead in the Global Economy

Competing in the new energy economy will require our country to harness all of our resources, including as the President said, the "one critical, renewable resource that the rest of the world can't match: American ingenuity." A key part of our country's success has been our leadership in science and technology, but we can't take that leadership for granted. According to the National Science Foundation's *2010 Science and Engineering Indicators* report, from 1996 to 2007, the average annual growth of R&D expenditures in the United States was about five to six percent compared to more than 20 percent in China.

To help keep the United States at the forefront of science and technology, the budget request invests in cutting-edge research that could spur new jobs and industries. This includes

\$5 billion for the Office of Science to support basic research that could lead to new discoveries and help solve our energy challenges. These funds support progress in materials science, basic energy science, advanced computing and more. They also provide America's researchers and industries with state-of-the-art tools to help take their work to the next level.

The budget request continues to support Energy Frontier Research Centers. The Energy Frontier Research Centers are working to solve specific scientific problems to unlock new clean energy development. So far, the EFRCs have published more than 1,000 peer-reviewed papers and filed more than 90 patent applications or patent/invention disclosures. Researchers are reporting multiple breakthroughs in areas ranging from advanced battery technology and solar energy to solid-state lighting and nuclear power.

The budget request also supports the five existing Energy Innovation Hubs and proposes a new Hub in electricity systems. Through the Hubs, we are bringing together our nation's top scientists and engineers to achieve game-changing energy goals. The Hubs continue to make progress. For example, the Modeling and Simulation for Nuclear Reactors Hub has released the first versions of its software that, upon completion, will simulate a virtual model of an operating physical reactor. The Fuels from Sunlight Hub has filed multiple invention disclosures and published scientific papers. And the Energy Efficient Building Systems Hub is developing advanced building modeling tools and has built one of the country's first 3-D building design labs.

Additionally, the budget request includes \$350 million for the Advanced Research Projects Agency for Energy, known as ARPA-E, to support research projects that could fundamentally transform the ways we use and produce energy. ARPA-E has invested in roughly 180 high-risk, high-reward research projects that, if successful, could create the foundation for entirely new industries. These companies and research teams are working toward a prototype of a battery that has double the energy density and one-third the cost of batteries in 2010, bacteria that use carbon dioxide and electricity to make fuel for cars, grid scale electricity storage and other potentially game-changing breakthroughs. Eleven projects that received \$40 million from

ARPA-E over the last two years have done such promising work that they have now received more than \$200 million in combined private sector funding.

Taken together, our research initiatives will help rev up America's great innovation machine to accelerate energy breakthroughs.

Nuclear Safety and Security

In addition to strengthening our economy, the budget request also strengthens our security by providing \$11.5 billion for the Department's National Nuclear Security Administration. NNSA plays a key role in achieving President Obama's nuclear security objectives.

As the United States begins the nuclear arms reduction required by the New START treaty, the science, technology and engineering capabilities within the nuclear security enterprise will become even more important to sustaining the U.S. nuclear deterrent. The budget request includes \$7.6 billion for Weapons Activities, a five percent increase over the FY 2012 enacted levels. This increase provides a strong basis for transitioning to a smaller yet still safe, secure and effective nuclear stockpile. It also strengthens the science, technology and engineering base of our enterprise.

The budget request also includes \$1.1 billion for the Naval Reactors program to ensure the safe and reliable operation of reactors in nuclear-powered submarines and aircraft carriers and to fulfill the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements.

Additionally, the budget request supports NNSA's critical work to prevent nuclear terrorism – one of the most immediate and extreme threats to global security and of one President Obama's top priorities. It includes \$2.5 billion to implement key nuclear security, nonproliferation and arms control activities. It supports efforts to detect, secure and dispose of dangerous nuclear and radiological material around the world. And it will help the Department

to fulfill its role in accomplishing the President's goal of securing all vulnerable nuclear materials worldwide in four years.

Finally, the budget request includes \$5.7 billion for the Office of Environmental Management to protect public health and the environment by cleaning up hazardous, radioactive legacy waste from the Manhattan Project and the Cold War. This funding allows the program to continue to clean up and close sites and positions it to meet its FY 2013 enforceable agreement milestones. This budget request builds on the significant progress that has been made by the program. By the end of 2011, the program had reduced its geographic footprint by 66 percent – far exceeding its goal of 40 percent.

Fiscal Responsibility and Management Excellence

The Department of Energy's FY13 budget request makes strategic investments to promote our country's future prosperity and security. At the same time, we recognize the country's fiscal challenges and our responsibility to invest in much-needed programs while cutting back where we can. That is why the President's budget request eliminates \$4 billion in inefficient and unnecessary fossil fuel subsidies.

Given the urgency of the challenges we face, the Department is committed to performing our work efficiently and effectively. We are streamlining our organization to improve performance and save taxpayer money. For example, the Department achieved approximately \$330 million in strategic procurement savings in FY11. We are taking several other steps such as reducing the size of our vehicle fleet, cutting back travel costs and consolidating websites.

We are also breaking down barriers to make it easier for businesses to move technologies from our national labs to the marketplace, which can help the United States seize technological leadership and create jobs. For example, we've started a program which makes it easier, quicker and less costly for start-up companies to sign option agreements to license national lab technologies. And to make it easier to work with the labs, we've reduced the advanced payment requirement, and streamlined the Cooperative Research and Development Agreement contract and approval process.

Throughout American history, the federal government has played a critical role in supporting industries that are important to our prosperity and security, from aviation and agriculture to biotechnologies and computer technologies. We should continue to do so today to lead in the new clean energy economy. Countries in Europe, Asia and throughout the Western Hemisphere recognize the energy opportunity and are moving aggressively to lead. This is a race we can win, but we must act with fierce urgency.

Thank you, and now I am pleased to answer your questions.

Mr. WHITFIELD. Thank you, Secretary Chu. And I recognize myself for 5 minutes of questions.

I had mentioned in my opening statement about the Utility MACT, which is indeed one of the big regulations coming out of EPA. And the thing that bothers me the most about it is that it was basically explained that the reason we had to do this was primarily for mercury reductions and some acid gas reductions. And whenever Lisa Jackson talked about it or anyone else, they talked about this is the reason, because we are going to save x thousands of people, premature death and whatever and whatever and whatever. And yet, in their own documentation, it was very clear that mercury reduction had no significant benefit from Utility MACT; that any of the benefits came from double counting reductions of particulate matter. And I would just like to know, were you involved at all in formulating Utility MACT or discussing the implications of Utility MACT or the benefits of Utility MACT?

Mr. CHU. We were involved to the extent that when asked to provide technical information on, for example, potential impacts having to do with the reliability of transmission distribution of energy, we provided that technical information to the EPA. I remember especially that was some of the concerns of the EPA, what power generating stations—was there any threat to the delivery system for the continued reliability for the system.

Mr. WHITFIELD. Well, are you concerned that EPA had estimated that there would be a 14 gigawatt reduction in coal production of electricity and NERC is saying it would be more in the neighborhood of 36 to 58 gigawatt reduction? And NERC has also raised issues on reliability. As Secretary of Energy and responsible for reliability in a lot of these issues, does that concern you?

Mr. CHU. Again, in discussions with NERC and EPA we looked at the mechanisms and felt that there were procedures and mechanisms in place so that the American public—that, you know, should something occur because it is not taking the average—the aggregate—for each particular sector that receives electricity, would the companies be able to supply electricity in a reliable manner? And so we certainly worked with those agencies to say that there were mechanisms in place to respond should something occur.

Mr. WHITFIELD. So you don't—

Mr. CHU. In the planning—

Mr. WHITFIELD [continuing]. Have any concerns about the reliability issue from the information that you have?

Mr. CHU. No. Of course we have concern about the reliability. That is one of the very important duties of the Department of Energy.

Mr. WHITFIELD. I am disturbed that I think EPA misled the American people on Utility MACT because all they ever talked about—and even many of our friends on this side of the aisle, not all of them, but every time there is a public statement they talk about what the reduction of mercury emissions is going to be. And all of the analysis, all of the data indicates that there is insignificant benefit from mercury reduction. So if EPA is selling it based upon that benefit and that benefit is not there, then why would you be moving forward with such an expensive regulation that will potentially affect reliability, as well as increase electricity prices?

Mr. CHU. Well, Mr. Chairman, I can't speak directly to the mercury standards that the EPA is talking about, and mainly because that is in the purview of the EPA to protect the air, to protect Americans' health. And our role is in determining power distribution reliability, our role is in developing technologies to make coal—so we can help industry reduce the price to continue to use coal but in a much cleaner way.

Mr. WHITFIELD. Well, you know, I mean I just have a philosophical difference, I guess, with you also because we have this \$16 trillion debt. ARPA-E, you are asking for a plus-up of 27 percent on that. Basically, that is used for very speculative technology. You have asked for a 30 percent increase on energy efficiency and renewable energy grants. And I was reading a biography of Henry Ford, and when he started Ford Motor Company, he did it all with private investment. And just like on Fisker, you had Kleiner Perkins putting up venture capital there and I am just questioning, why should the Federal Government be putting up these millions of dollars when we are in the financial situation that we are in and it is very speculative? So what is your view?

Mr. CHU. Well, I am very supportive of ARPA-E. There was a very recent ARPA-E third summit. It was at the end of February. There was great excitement and enthusiasm, leaders in American industry including Fred Smith of FedEx. I am going to paraphrase what he said when he gave a talk there and he said, you know, pound for pound, dollar for dollar, he felt that ARPA-E was the most effective use of government resources he has seen in a long time. That is a paraphrase that we can get you the exact quote, but strongly supportive of ARPA-E. Lee Scott similarly strongly supportive of ARPA-E. Many, many people thought that it was very important to help America get a leg up and increase our competitiveness and help our prosperity.

Mr. WHITFIELD. Thank you, Secretary Chu.

Mr. RUSH, you are recognized for 5 minutes.

Mr. RUSH. Thank you, Mr. Chairman.

Mr. Secretary, as I stated in my opening statements, I am eager for you to set the record straight in regards to the levels of oil and gas production importation and consumption during the time that President Obama has been in office. While my Republican colleagues may engage in a scorched-earth strategy and an endless and senseless blame game gamut and point to the administration's policies as the singular cause for rising gas prices, I believe that in fact it is your agency's programs and policies that will help America move past our dependence on foreign oil and fossil fuels in general so that we will not continue to have this debate every year as gas prices inevitably rise.

So Mr. Secretary, can you talk about the levels of oil and gas reduction under President Obama's administration. Has production increased or decreased? And have new lands been opened up for drilling under this administration?

Mr. CHU. Well, Mr. Rush, as you yourself pointed out, during the Obama administration, the production of petroleum liquids in the United States have increased. Now, I believe it is the highest it has been in over 8 years. Also, as you pointed out, the fraction of the oil we import has declined from 60 percent as a high. Now, it is

down below 50 percent—48 percent—and they are showing signs of further decline. This is very good because this means we are exporting fewer dollars abroad. And as we produce more oil here domestically, that is jobs in America, wealth creation in America. And so the administration is very supportive of this increase in gas and oil.

Mr. RUSH. Well, as it relates to the importation of oil, can you discuss the amount of oil that is being imported today as compared to before President Obama took office? Are we importing more or less oil from foreign countries under this administration?

Mr. CHU. We are importing less. Again, roughly I believe less in the last 16 years as my memory serves to be correct.

Mr. RUSH. For the record, to straighten out the record, has American consumption of gas increased or decreased over the past year and if it has changed, what do you attribute to that change? Can you discuss some of the policies that have gone into effect under President Obama that are impacting consumer habits and lowering U.S. consumption of gas?

Mr. CHU. Are you speaking of gas as in gasoline or as in natural gas?

Mr. RUSH. Gasoline. I am sorry.

Mr. CHU. Well, our consumption of gasoline has decreased in part due to two reasons. First, there was a dramatic decrease, unfortunately, due to a very severe recession that we are very slowly climbing out of. But there is another very important part, and that is we want to climb out of this recession as quickly as we can. There is another important part and that is the efficiency. The use of gasoline is improving. And this goes directly to help every American family in reducing the amount they spend on gasoline every week. And so again, the Obama administration has been very supportive and helpful and leading the way in improving the efficiency of automobiles, trucks, and other vehicles.

Mr. RUSH. A part of your responsibility and a part of your concern I am sure is the weaning of the American consumer off of fossil fuel and our heavy dependence on fossil fuel and also foreign sources of energy. What policies do you have in place and give us a recipe for how you view these policies as being a top priority for the American people and for this Congress?

Mr. CHU. Well, the policies the President has taken in terms of increasing our production of oil and natural gas include the making available for lease an increase in the Federal lands being made available for lease for oil and natural gas. And so that has continued to increase and will continue so that the American oil and gas companies have more access to Federal lands.

Mr. RUSH. My time is up.

Mr. WHITFIELD. Thank you, Mr. Rush.

At this time I recognize the gentleman from Michigan, Mr. Upton, for 5 minutes.

Mr. UPTON. Well, thank you, Mr. Chairman.

Mr. Secretary, again, welcome. I learned literally in the last few minutes that apparently President Obama is personally weighing in on Members of the Senate to vote no on the Keystone Pipeline amendment, which is going to be an amendment as part of the highway bill. And I am not happy about that at all. I will say that

for the record we passed that bill out of this committee a couple of times with bipartisan support. We saw the same thing on the House Floor. Are you weighing in at all with any Senators on this amendment vote today?

Mr. CHU. No, I am not.

Mr. UPTON. I know it has been reported that oil production on Federal lands has dropped 14 percent since 2010. And in reading from the Greenwire last week—let me just read a couple things to you here—“domestic oil production may be at an all time high nationwide, but the increase is primarily occurring on State and private lands rather than on Federal land and waters where production appears to have dropped significantly in 2011. According to the most recent government data, production of natural gas on public lands and waters in fiscal year 2011 dropped 11 percent from the previous year,” according to the Interior Department. Oil production dipped nearly 14 percent. The reduction in oil production was most significant in the Gulf of Mexico where it declined nearly 17 percent to 514 million barrels from 618 million barrels the previous year. And in a chart on oil and gas production on Federal lands and waters, it appears it has declined in oil by 100 million barrels from 2010 to 2011.

Now, we agree that sadly, because of—our decline in our economy is the main reason why I think consumption has gone down. We didn't get the growth; we didn't have the jobs. I know in my State we had 38 consecutive months of double-digit unemployment. But as I look at your own EIA, if you look out the next couple of decades, your department says that we will be using the same amount of gasoline in 2030 as we are now. I presume that in large part that is because we are going to have more energy efficient vehicles, a whole number of different things that are there that of course we want. But demand can't be the only answer.

And I guess my question is that with this oil production decline on Federal lands, people understanding supply and demand report that you all put out just 2 or 3 weeks ago, predicted that oil prices would hit \$4.25 by Memorial Day. We are one penny away in my district from \$4 gas, at least this last weekend, and some predict that we are going to hit \$5 gas as early as perhaps the 4th of July. In large part it is because of declining production primarily on Federal land. Would you not disagree?

Mr. CHU. Well, Chairman Upton, I first want to say that both I and the President and everyone in the administration wants very much to do what we can to lower the price of gasoline because it has a severe effect on the pocketbooks of Americans. It affects American businesses. In terms of the Federal lands production, what the government does, as you well know, is we lease land to oil companies and it is up to them to produce the oil. Currently, they—

Mr. UPTON. But right now, just to interrupt for a second, it is proposing a 5-year leasing plan that would delay sales in the Atlantic or Pacific through at least 2017. So it is looking for yet another moratorium for 5 more years. How does that help us?

Mr. CHU. Well, it is not my understanding. My understanding is a bit different. This is a plan that will be, for example, in the Gulf of Mexico, the Federal jurisdiction being made available is 75 per-

cent of the area in the Gulf of Mexico that is under Federal jurisdiction. And so it is a plan to increase the leasing. Now—

Mr. UPTON. I was in the Gulf last summer and I went out on a rig that was 120 miles off the coast of Louisiana. That day they pumped 110,000 barrels. And looking out a couple miles away there was another drilling ship that was there and they were waiting for the permits, just waiting. This was a Chevron rig. They were literally waiting for weeks and weeks paying millions of dollars every day so that that ship wouldn't un-anchor and go off to Brazil where they would never see it again, in essence trying to tap the same vein that Tahiti drill rig was drilling that particular day.

And the frustration from so many folks there is that the permits are not being approved, this new moratorium is there knowing that a third of our oil comes from that region. You have got Keystone literally could be a million barrels a day that otherwise will go to China. It just seems that we are turning our back on independence from the rest of the world that would clearly help our consumers as it relates to their own pocketbook.

And I know my time is expired. I will yield back.

Mr. WHITEFIELD. Thank you, Mr. Upton.

At this time I recognize the gentleman from Michigan, Mr. Dingell, for 5 minutes of questions.

Mr. DINGELL. Mr. Chairman, I thank you for your courtesy. Welcome, Mr. Secretary, delighted to see you here. I have a number of questions which I will ask that you respond to by yes or no.

It has been a year since your Loan Program Office approved the loan from the Advanced Technology Vehicles Manufacturing Program. As you know, that program was created to provide the auto industry with incentives to build or expand manufacturing facilities here in the United States instead of taking those jobs overseas. Loan recipients such as Ford and Nissan have successfully built and expanded facilities in Michigan, Tennessee, Illinois, Kentucky, and other States. Question: Is the Loan Program Office working to streamline the approval process so that applicants can be assured they will not be waiting for years to find out if their application will be approved? Yes or no?

Mr. CHU. The Loan Program is working to improve their processing in all aspects.

Mr. DINGELL. Mr. Secretary, I will ask that you submit something on this for the record. And I ask unanimous consent that my letter with those questions and your responses be inserted in the record.

Next question: Has the Loan Program Office implemented any of the recommendations of the Allison Report to protect taxpayer dollars and to provide a uniform system for evaluating loan applications? Yes or no?

Mr. CHU. We have actually begun to change over the past year and a half many of the things that the Allison Report discusses. So we internally have been doing that and we are reviewing all the things that the committee did. It is very valuable concentration and we continue to improve our loan program.

Mr. DINGELL. Now, Mr. Secretary, I am very much concerned about this. The lack of funding for the Facility for Rare Isotope Beams, or FRIB, within the Nuclear Physics Program, I am told

that the funds allocated for that program in fiscal year 2013 budget are not enough for them to start construction in this year. As of now, the program and the project is on time and under budget. Furthermore, the facility will generate 5,000 construction jobs, 400 permanent scientific positions and have a \$1 billion economic impact.

I noticed that in other programs within the Office of Science, the President is proposing to increase funding for scientific projects overseas. I believe that we should first ensure that we are meeting our project obligations here at home before sending our money and scientists abroad. Do you agree with that?

Mr. CHU. We are very supportive of FRIB. We have asked for \$22 million to continue this project going forward and we hope that Congress votes and appropriates that money. And so we want this project to continue going forward.

With regard to this other project you spoke about, it is a different part of this—but the thing I do want to point out is it is an international collaboration, but 80 percent of the funds will be spent in the United States, both in national laboratories, universities, and in industries in the U.S.

Mr. DINGELL. Now, Mr. Secretary, your department has already invested \$50 million in FRIB. I am concerned about the progress at FRIB. What is the commitment that the Department makes with regard to FRIB? Are we going to let it sort of strangle on the vine or are we going to see to it that it continues to be funded even though this year we have not given them enough to commence the construction?

Mr. CHU. Well, sir, as I said, we think that FRIB is a worthy project. We have asked for continued funding and we hope that Congress allows us to have that funding that we can keep this project going forward.

Mr. DINGELL. Now, Mr. Secretary, you know I have great affection and respect for you, but you can't lay this one off on Congress. I am talking about what the budget does and not what the Congress might do.

Now, Mr. Secretary, FRIB will have national security implications and applications such as studying the detection of a nuclear weapon or dirty bomb detonation. I do not believe that we can pursue these types of national security opportunities and applications at facilities overseas. Doesn't that tell us that we should put our money here locally rather than giving it to other countries to do this kind of critical research in programs that will have such a significant impact upon our national security?

Mr. CHU. The funds, as I said, the lion's share of the funds for ITER, this International Fusion project, will be spent in the United States. But the Department of Energy agrees with the other ITER partners that this is a very important experiment that could perhaps unlock fusion energy for the future.

Mr. DINGELL. Again, Mr. Secretary, with great affection and respect, we are going to spend some money in the United States, we are going to build a facility abroad, and the work and the benefits that will be achieved from this will be spent abroad and will strengthen foreign scientific applications as opposed to Americans'. I find this distressing.

I thank you for being here. I will follow this up with a letter indicating further distress to you, Mr. Secretary. Thank you for your presence.

Mr. WHITFIELD. At this time I recognize the gentleman from Texas, Mr. Barton, for 5 minutes.

Mr. BARTON. Thank you, Mr. Chairman.

Again, thank you, Mr. Secretary for being here.

In my opening statement I referenced the alternative energy budget and specifically said concerns about the Loan Guarantee Program. As you know, we continue to have an ongoing investigation with regards to Solyndra. At the last hearing that you attended I believe where the focus was on Solyndra, you were very supportive of the way the Loan Guarantee Program had been managed, but I think you did indicate that there might be some changes forthcoming. Have there been changes in the way you and your department have managed the Loan Guarantee Program for alternative energy, and if so, could you tell us what those are?

Mr. CHU. Yes, sir. There were changes. Let me give you a few examples. We know that sometimes the economics of a particular industry—for example, in the case of Solyndra solar photovoltaics—can change very rapidly. A 40 percent decline in the price of solar modules, essentially a commodity, in one year; 75, 80 percent decline in 3 years. And one of the things we now do on a weekly basis is we look very, very closely at changing market conditions. We established a Risk Committee that includes people both within in the Loan Program and outside the Loan Program, subject matter experts in the Department of Energy.

Also, I now have a special advisor on financial matters that looks very closely at this, as, again, an independent set of eyes to make sure we monitor closely before future disbursements all the things that could affect the loan, including things outside the control of an individual company like this very rapid decline in prices.

Mr. BARTON. Concerning this independent advisor you just referenced, has he prepared—and if so, could you present to the committee for our review—a list of the additional loan guarantees and the status of those? And what if any of those might be in danger of following Solyndra in defaulting and going into bankruptcy?

Mr. CHU. Well—

Mr. BARTON. I know at least one other has, since Solyndra, and I am told that there are a number of others that are on the problem list.

Mr. CHU. Well, there are companies, again, as I said which we watch very closely because of a wide range of issues. We also have to respect the confidentiality of any of the people that we have made loans to or commitments to make loans to. So—

Mr. BARTON. How about how many loans are on the what I think you call the “watch list?” That shouldn’t be proprietary.

Mr. CHU. Well, I don’t have the exact number but the—

Mr. BARTON. Is it a double-digit number? You know, is it between 1 and 10, 10 and 20?

Mr. CHU. Well, I don’t again recall the exact number. I am going to be briefed by my senior advisor, Richard Kauffman, on this matter, but again any company that we think has a chance of being

subject to market change or market conditions, or other issues internal within the company, we do watch very closely.

Mr. BARTON. Well, do you think that the American taxpayer should have a reasonable expectation that all of these loans should be repaid as opposed to any loan that is made is just money down the tubes and it is not going to be repaid. I mean you have to admit that the history so far of the initial projects has not been good.

Mr. CHU. First, I do say that the American taxpayer has every right to expect that there is a reasonable chance for repayment of the loans we give out. I would also say that many of the loans we have given out have been very good successes. It has already been mentioned, loans, for example, to Ford Motor Company, to Nissan—

Mr. BARTON. That wasn't an alternative energy loan.

Mr. CHU. We have other loans that were—

Mr. BARTON. I don't think they came through your department either, Mr. Secretary, but—

Mr. CHU. Sir, actually, the ATVM loans do. But in regard to alternative energies, there are a number of loans that we feel and the Allison Report also recognizes that are low-risk, have a very high probability of being paid back.

Mr. BARTON. Well, my time is expired but we will follow up in writing and we will ask that these problem loans on the watch list be provided to the committee so that our people can review them and hopefully work with your agency to take steps to protect the taxpayer money.

Thank you.

Mr. WHITFIELD. At this time, I recognize the gentleman from Massachusetts, Mr. Markey, for 5 minutes.

Mr. MARKEY. Thank you, Mr. Chairman.

Mr. Secretary, there are only two tools the President has to bring down gas prices right now—deploy the strategic petroleum reserve and get other countries in the world to use their Strategic Petroleum Reserves to help to put pressure on the marketplace; and two, curbing excess speculation in oil futures markets through the Commodities Futures Trading Commission. The SPR has proven effective in helping to bring down prices and we have plenty of oil in the SPR right now, 700 million barrels. You have said, Mr. Secretary, deploying SPR is on the table as an option. Senator Geithner, Secretary Salazar have said the same thing, that you have got it on the table.

Now, the oil companies and the Republicans, they oppose deploying the SPR but their oil-above-all policy doesn't help drivers right now. None of this oil they are talking about is coming online this year. And people are looking for relief at the pump right now. So Mr. Secretary, Senators Vitter, Hoeven, Lugar, Crapo, and Thune have introduced legislation that would prevent the President from deploying any oil from the Strategic Petroleum Reserve until he approves the Keystone XL Pipeline permit. Do you believe, Mr. Secretary, that the authority of the President to deploy the Strategic Petroleum Reserve should depend on the permitting of the Keystone Pipeline even if Iran cuts off the Strait of Hormuz and blocks 20 percent of the world's oil supply?

Mr. CHU. No, I don't.

Mr. MARKEY. Do you believe that it makes any sense to say to our young men and women that we export into the Middle East to protect this supply of oil that we are not going to use the weapon we have here in the United States—the Strategic Petroleum Reserve—in order to keep the price of oil low and not allow Iran to threaten us unnecessarily?

Mr. CHU. Well, as you noted, the administration has said repeatedly that the Strategic Petroleum Reserve is on the table but it is a very complex issue.

Mr. MARKEY. Right, but it would be a bad idea, would it not—

Mr. CHU. Pardon?

Mr. MARKEY [continuing]. To strip the President of his authority to use it unless it approved the Keystone Pipeline?

Mr. CHU. I agree.

Mr. MARKEY. Thank you. Now, on the CFTC, the Republicans have a bill that has come out of Agriculture Committee and come out of the Financial Services Committee that would stop all rulemakings to give the CFTC the authority on speculation, on margins, on position limits, on gauging, on protecting the public in the futures oil market where so much of this is just speculation being driven up, driving up the price of oil. Do you think it is a bad idea to strip the CFTC legislatively of their authority to be able to protect against gauging in the marketplace?

Mr. CHU. Well, no one would be in favor of gauging.

Mr. MARKEY. The Republicans believe you don't need the rulemakings at the CFTC. Are they right or wrong, Mr. Secretary?

Mr. CHU. Everyone is very concerned—

Mr. MARKEY. No, everyone is not concerned, Mr. Secretary. The Republicans want to strip out the authority of the CFTC to go against manipulation, to deal with these margin issues, to deal with the position limits. Is that a bad idea?

Mr. CHU. Well, as I said, if you please let me finish, everyone is concerned about speculation unnecessarily driving the price of oil up. This is why the administration and one of the things that can counter speculation is more transparent information, and this is why the administration is very focused on that.

Mr. MARKEY. So we need the SPR and we need the administration to have the authority to be able to crack down on the speculation, make sure there is more transparency and no game-playing.

And I will also say that there is a proposal out there to create an international natural gas market. Right now, you know, Mr. Secretary, there is no natural gas market. The price of natural gas in China is six to seven times higher than in the United States. It is three times higher in Europe than it is in the United States. That is leading to a boom in manufacturing in our country. It is really leading to all new planning on natural gas vehicles because the price is so low and many utilities are really contemplating how fast to switch over from coal over to natural gas. There is an application for eight new licenses that are before you to export this natural gas, which your own agency says could raise the price upwards of 54 percent. I urge you to call a time-out, Mr. Secretary, to make sure that we get this right.

You had an Assistant Secretary that made a statement last week that really disturbed me. I would urge you not to approve these li-

censes until we put together a plan for the United States on liquefied natural gas exported from our country.

Mr. WHITFIELD. Gentleman's time is expired.

At this time, I recognize the gentleman from Texas, Dr. Burgess, for 5 minutes.

Mr. BURGESS. I thank the chairman for the recognition.

Yes, Secretary, way back here. Let me ask you because Mr. Barton was asking you some questions about the loan guarantees at Solyndra. When you came to us in November of last year it seemed to be news to you that there were postponement of layoffs that occurred at the company, those postponements to take the layoffs past election day before they were announced. And you seem to be surprised that that had in fact occurred. And I think if I recall correctly you said you were going to look into that, so can you share with us the results of your investigation, what information you have uncovered as to why those layoffs were postponed past the election day?

Mr. CHU. We turned the matter over to the IG, the Department of Energy IG, and they are looking into the matter, and when they tell us what they find, we could share that with you.

Mr. BURGESS. And I pray that you do. But so far have you identified any of your staff, Department of Energy, that were involved in making that decision?

Mr. CHU. No. As I said, we turned the matter over to the IG and so that is an independent look at what happened.

Mr. BURGESS. Have you yourself been interviewed by the Inspector General on this issue?

Mr. CHU. No, I have not.

Mr. BURGESS. Have you been informed that that is likely to happen?

Mr. CHU. No, I have not.

Mr. BURGESS. Are you willing to talk to the Inspector General about this?

Mr. CHU. I have always cooperated with the IG.

Mr. BURGESS. Let me ask you a question about the Allison Report and Congressman Barton was asking about the watch list. Can I just ask you—and I respect the fact that you are concerned about some proprietary issues—but would you provide to the committee or committee staff this watch list, provide the copy of the list to the committee?

Mr. CHU. Well, actually, I was slipped a note and I misread it. It appears as though this committee's staff will be getting a briefing from Richard Kauffman, my special advisor, next week on this, on the Loan Program and the Allison.

Mr. BURGESS. Is that the full committee staff or just the Democratic staff?

Mr. CHU. I think it is the full committee staff.

Mr. BURGESS. May I ask as a member of the committee, then, that you would have your guys bring that list to that briefing?

Mr. CHU. Well, we will do what we can but again we are going to give you a briefing—

Mr. BURGESS. We need your commitment, sir, that we will be able to see that list because it is important as far as congressional oversight on this process going forward.

Mr. CHU. Well, as I said—

Mr. BURGESS. We can all be criticized about the way things have been handled so far. I would like to be able to stop the bleeding at some point. So let me just ask you for your commitment to make that list available to the staff.

Mr. CHU. We have to look at—again, we don't want to violate the company confidentialities. The dynamics of what happens to these companies changes very rapidly and so it is, again, part of our loan—

Mr. BURGESS. If I may, sir, the taxpayer has taken a pretty bad hit on this, and while I want the companies to do well, I think at some point we may have to put the taxpayers' needs and wants ahead of those of the companies'. Again, I cannot see a reason why you could not bring that list and I for one as a committee member am going to be expecting you to bring that list.

Let me ask you a question. You have had the chief financial officer of your department, the Department of Energy, had produced a report on uncosted balances in 2010 and just in the purpose and the background notes at the beginning of this report it said your approach was developed in '96. As a response to the GAO criticism, the Department did not have a standard effective approach for identifying excess carryover balances that might be available to reduce future budget requests to address this concern. You establish percentages thresholds. So where are we with that? Are you prepared to produce for this committee those numbers that met that percentage threshold that might be available to offset the numbers you are requesting in your budget?

Mr. CHU. Yes. We have been working very aggressively at reducing these uncosted balances in the last several years.

Mr. BURGESS. Well, the GAO estimated that this current fiscal year it is in excess of \$680 million from carryover programs. What is your justification for asking for funding increases in programs with significant carryover balances?

Mr. CHU. I believe the lion's share of that amount has to do with a program, carbon-capture and sequestration, which means that, according to the statute, we need significant private sector investment matching funds of over half. And some of that has not materialized. We have an uncosted balance because if the private sector doesn't want to co-invest, there is not much we can do about that.

Mr. WHITFIELD. The gentleman's time has expired.

At this time I recognize the gentleman from California, Mr. Waxman, for 5 minutes.

Mr. WAXMAN. Thank you, Mr. Chairman.

Mr. Secretary, people are complaining about the high price of gasoline, understandably so, and we want to help. But do you see any short-term way to lower gasoline prices?

Mr. CHU. As you said, everybody is concerned about the high price of gasoline and diesel fuel and we do want to help in any way we can. But as the President said, as I have said, there is no single magic bullet that can instantaneously do this. And so we work very hard and all the tools at our disposal—the most effective tool is that we want to improve the efficiency and to diversify the energy we use in transportation. The boon in natural gas we think is wonderful because we now see and are very supportive and are helping

offload some of the demand for petroleum onto natural gas used in transportation. We see great movement in heavy trucking and in delivery trucks, things of that nature.

Mr. WAXMAN. Well, the Republicans have said over and over again we just need more oil. If we had more oil, we wouldn't have this problem. And then, of course, they go on to say it is the President's fault we don't have more oil. Well, the reality is we are producing more oil in the United States than ever before and we are using less because of the greater efficiency in the automobiles. So if we had more oil and the oil is priced at the world price, would that lower the world price?

Mr. CHU. Well, the price of oil is very, very complex. It is certainly driven by supply and demand. It is also affected by uncertainty in the Middle East and several—

Mr. WAXMAN. Well, if we produced more oil and OPEC decides to produce less, that won't help us; that will hurt us. If we produce more oil and more oil is being demanded by China and India, the world is going to divert oil there as well. I mentioned in my comments earlier that Canada produces more oil than they use and yet they are paying the same price for gasoline that we are paying. So it seems to me—and you made this point—that we have got to look beyond just producing more oil. We have got to look at using less oil. And the way to use less oil would be to invest in clean energy to diversify and reduce our energy use. It is a tough challenge.

The Congress should be helping you and the President accomplish that goal. Instead, Republicans in Congress attack every proposal you and the President make, every idea you offer, every initiative you take. For example, battery manufacturing is an industry that has been dominated by Southeast Asia for decades. The United States has essentially no capacity so the administration changed all that. And the way I understand you changed it is to use the Recovery Act to incentivize the development of a manufacturing supply chain for vehicle batteries.

And here in the United States we have a domestic production of the Chevy Volt, innovative, award-winning, plug-in hybrid electric vehicles. But the Republicans seem to be rooting for failure. They are attacking GM on this groundbreaking product. Does it make sense for us to be rooting against American manufacturing at a time like this?

Mr. CHU. No, of course not. We should all be rooting for very innovative products that could be sold worldwide. It would show industrial leadership and great wealth.

Mr. WAXMAN. It makes just common sense. But this isn't the only example. The President proposed a clean energy standard to increase the amount of energy we get from renewable sources of energy, as well as from nuclear and advanced natural gas plants, similar to what Mr. Barton proposed from the last Congress. And it is really an all-of-the-above strategy. But the Republicans don't even want to discuss this idea.

The President proposes to eliminate unnecessary subsidies for the oil industry. Last year, the top five oil companies made \$137 billion in profits. The price of oil is over \$100 a barrel. With oil at such a high price, do we need to be giving out \$4 billion in tax

breaks for oil companies each year to have an incentive for them to drill more oil? Can you explain that to me?

Mr. CHU. I believe the oil industry is doing very well financially and they have a lot of incentive.

Mr. WAXMAN. They have a lot of incentive now so we would be better off repealing those subsidies and using that money to develop sources of clean energy that reduce our dependence on oil and move us forward to a clean energy economy, and yet the Republicans oppose that as well. I think the President is on the right track. I appreciate what he has been doing. Even though Congress tries to frustrate him and I applaud his statements about how we need to move forward at this time.

Mr. WHITFIELD. At this time I recognize the gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Welcome, Secretary Chu. I love following my friend, Mr. Waxman, because for us to move in the clean energy world, we have to pay for that. Isn't it true, Secretary Chu, that you espouse European gas prices for the United States? I mean briefly. Yes or no? Have you been quoted saying that it would be good for us to have European gas prices?

Mr. CHU. At no time when I was Secretary of Energy have I ever said—

Mr. SHIMKUS. OK. Prior to?

Mr. CHU. Prior to that I was—

Mr. SHIMKUS. We all know the answer is yes. And obviously that is to move to a clean energy future based upon Americans paying more at the pump, which is the desire and the goal of this administration. I didn't want to go in that direction but my friend from California empowered me to go.

Let me move to—

Mr. WAXMAN. Mr. Shimkus—

Mr. SHIMKUS. No, reclaiming my time. I have got to go to—

Mr. WAXMAN [continuing]. Are you going to give him time to answer it?

Mr. SHIMKUS. I would like to reclaim my time.

Mr. Secretary, if the D.C. Circuit rules against the DOE in pending Yucca Mountain litigation, will the Department abide by that ruling?

Mr. CHU. Yes, it will.

Mr. SHIMKUS. If the Federal court orders you to pursue the Yucca application at NRC, do you have the staff to pursue it?

Mr. CHU. If the Federal court orders us to do so, we will do so.

Mr. SHIMKUS. Describe the funds that could be made available from the prior years to pursue the application.

Mr. CHU. That I would have—

Mr. SHIMKUS. This would include any carryover funds that were made available until expended, any unobligated balances from prior years' funds that may have been obligated but not spent and therefore subject to redirection.

Mr. CHU. I would have to get back to you on the details.

Mr. SHIMKUS. Would you do that for me, please? Thank you.

As you hopefully know, this past Tuesday, the Board of County of Commissioners from Nye County, Nevada, unanimously sent you

a letter notifying you of their consent to host a proposed repository at Yucca Mountain and requesting that you initiate the cooperative negotiations process recommended by the President's Blue Ribbon Commission. And I would like to submit that, Mr. Chairman, for the record.

Mr. WHITFIELD. Without objection.
[The information follows:]



**Board of County Commissioners
Nye County
Pahrump, Nevada**

Pahrump Office
2100 E. Walt Williams Drive
Pahrump, NV 89048
Phone (775) 751-7075
Fax (775) 751-7093

March 6, 2012

The Honorable Dr. Steven Chu
Secretary, U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Subject: Consent to Host the Proposed Repository at Yucca Mountain

Dear Dr. Chu:

Nye County wants to acknowledge the Department of Energy's FY2011 payments to the Yucca Mountain "Affected Units of Local Government" (AULG) and your "Payment Equal to Taxes (PETT)" to Nye County for the period through FY2011. Nye County has considered itself a partner of the Department for many years as we have undertaken our role as host county to the only site designated by law as the Nation's geologic repository. We look forward to working with you in the ongoing quest for solutions to the challenges associated with the disposition of spent nuclear fuel (SNF) and defense high level waste (DHLW).

As you know, the first recommendation of the Blue Ribbon Commission on America's Nuclear Future (BRC) calls for a new, consent-based approach to siting future nuclear waste management facilities. This recommendation goes to the heart of the purpose for this letter. Nye County, Nevada hereby provides notice to you, the Secretary of Energy, that we consent to host the proposed repository at Yucca Mountain consistent with our previous resolutions (attached) that support the safe and successful development of the Yucca Mountain Repository. Our detailed comments on the BRC Final Report are also attached.

Importantly, the BRC report states, *"The approach we recommend also recognizes that successful siting decisions are most likely to result from a complex and perhaps extended set of negotiations between the implementing organization and potentially affected state, tribal, and local governments, and other entities."* We acknowledge that opposition by the State of Nevada has been challenging. Up to this point in time, Nevada, represented by the Nevada Commission on Nuclear Projects, has been steadfast in its belief that there are no serious incentives to be had for hosting the Yucca Mountain Project. However, we, like the BRC, believe that (1) assurances from the Federal government of an enduring and significant role for State and Local government involvement in the project to assure safety, and (2) a significant federal incentive package to the State and Local governments could alter the status quo and lead to a resolution of the decades long dispute.

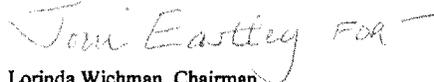
Since the BRC members have testified that the Nation may well need more than one repository,

Dr. Steven Chu
 March 6, 2012
 Page 2

Since the BRC members have testified that the Nation may well need more than one repository, and that the need is urgent, Yucca Mountain should not automatically be excluded. The fact that over 30 years of scientific and technical work has already been successfully conducted leads us to conclude that Yucca Mountain could be ready to safely receive waste years ahead of any other site. This specifically addresses the "promptness" issue of the fourth BRC recommendation "...that leads to the timely development of one or more permanent deep geologic repositories..."

We ask that you invite Nye County to meet with you or your designated representatives to initiate the cooperative negotiation process the BRC recommends. We want to explore and define potential incentives, and move this urgently needed program forward as promptly as possible. Thanks to the additional AULG oversight funding you provided, we are ready to start that process now. In order to establish our mutual negotiating teams, we propose an initial meeting at the time and place of your choosing in March or soon thereafter. Let us start the dialogue now. We do not need to wait. We look forward to your prompt reply.

Sincerely,



Lorinda Wichman, Chairman
 Nye County Board of County Commissioners

Attachments: Nye County Resolutions 2002-007, 2002-22, 2004-25 & 2011-21
 Nye County BRC Final Report Comments, March 5, 2012

CC: The White House
 Governor Sandoval
 Nevada Congressional Delegation
 Nevada Commission on Nuclear Projects
 Senate Committee on Energy and Water
 Senate Committee on Environment and Public Works
 House Energy and Commerce
 House Science Committee
 House Sub Committee on Energy and Environment
 House Sub Committee on Science and Technology
 NARUC
 NEI
 USNIC
 Nye Board of County Commissioners
 Nye County Manager
 AULGs
 NV4CFE
 NWSC
 NWTRB
 NRC
 DOE/NE
 DOE/GC
 DOE/EM

Resolution No. 2002-07
Nye County Board of Commissioners

**BOARD OF COUNTY COMMISSIONERS
COUNTY OF NYE, STATE OF NEVADA**

**RESOLUTION SETTING FORTH NYE COUNTY'S
POSITION REGARDING THE PROPOSED HIGH LEVEL
NUCLEAR WASTE REPOSITORY AT YUCCA MOUNTAIN
AND THE SITUS COUNTY COMMUNITY PROTECTION PLAN**

WHEREAS, the President of the United States has now formally recommended Yucca Mountain, in Nye County, as the site to which the federal government would transfer the Nation's highly radioactive wastes for interim storage, waste handling, and permanent disposal; and

WHEREAS, Nye County is the location of the Nevada Test Site where, for over 40 years, the Nation conducted nearly 1,000 atmospheric and underground nuclear weapons tests which permanently contaminated large tracts of land and groundwater; and recent studies reveal that radiation released in 828 underground nuclear detonations is migrating in poorly understood regional groundwater systems; and

WHEREAS, the program instituted by the United States Department of Energy (USDOE) to clean up the Nation's defense complex relies heavily on the disposal of low-level radioactive wastes at the Nevada Test Site, in Nye County;

WHEREAS, these low-level wastes arrive by truck on two-lane roads that go through four Nye County communities; in fiscal 2001, about 600 shipments containing 750,000 cubic feet of low-level wastes traveled 107,000 shipment miles on rural highways in the destination county; and

WHEREAS, Nye County also is the site of the Nellis Test and Training Range, a premier training range where the Nation trains its best fighter pilots for combat preparedness; and

WHEREAS, Nye County also is the site of the Tonopah Test Range, a restricted facility where the Nation has developed and based new-technology combat aircraft; and

WHEREAS, these activities (the Nevada Test Site, the Nellis Test and Training Range, and the Tonopah Test Range) have made major contributions to national defense but meager contribution to the Nye County's economic or revenue base; and

WHEREAS, the management and use of 11 million acres of public lands, comprising 98% of the Nye County's total land area, by a variety of federal land management agencies contributes very little to the Nye County's economic or revenue base, and forecloses opportunity for local community development; and

WHEREAS, Nye County has not sought to provide the site to which the federal government would transfer the Nation's highly radioactive wastes for interim storage, waste handling, and permanent disposal; and

WHEREAS, the USDOE claims that the proposed Yucca Mountain Project will be good for national health and safety, good for the nuclear power industry and their ratepayers, good for 80 communities in which highly radioactive wastes are now stored, good for 35 states that do not want to become permanent storage locations for highly radioactive wastes, and/or good for the federal government which has legal obligations to dispose of commercial spent fuel; and

WHEREAS, it is clear that the Yucca Mountain Project, if implemented as proposed, will achieve the expected benefits for others by the transfer of the Nation's highly radioactive wastes, along with all its attendant risks and uncertainties, from 80 sites in 35 states to a single community in Nevada—Nye County; and

WHEREAS, the elected government of Nye County has responsibility to protect local health, safety, and welfare, and is the only representative government whose first and overriding responsibility is to provide such protection in the situs county; and

WHEREAS, since 1995 Nye County has conducted independent scientific investigations in areas downgradient from the proposed Yucca Mountain repository, focusing on geologic and hydrologic conditions affecting the potential for contamination in the repository's major exposure pathways; and

WHEREAS, these independent investigations have identified uncertainties and contingencies—in science, design, and in implementing organization and funding—that require continued independent inquiry and confirmation; and

WHEREAS, in recognition of all of the above, Nye County has prepared a "Community Protection Plan" that identifies the legitimate objectives of the situs county, and the protections it expects in the event that the federal government decides to transfer the Nation's highly radioactive wastes to Yucca Mountain; and

WHEREAS, the Nye County Board of Commissioners deems it imperative that it set forth Nye County's statement of history, policy and intent regarding this issue,

NOW THEREFORE, it hereby is resolved as follows:

1. Nye County has not sought to provide the site to which the federal government would transfer the Nation's highly radioactive wastes for permanent disposal.
2. The Nation and the various parties who stand to benefit have a special obligation to the single local jurisdiction to which they desire to transfer their unwanted radioactive wastes.
3. If the Nation decides to transfer its highly radioactive wastes to this single community—Nye County—it has an obligation to do so under conditions that address the situs county's concerns and that assist rather than jeopardize legitimate site county objectives, as these are outlined Nye County's "Community Protection Plan."
4. Among these concerns and objectives are the following:

Protection of Health, Safety, and the Environment

The situs county—Nye County—should be empowered to conduct independent oversight and monitoring of USDOE activity in the situs county throughout Yucca Mountain site characterization, licensing, construction, operations, and performance confirmation. Situs county empowerment should be permanently financed, and should not be dependent on annual federal appropriations over the expected 50-300 years of repository operations.

Federal activities to confirm repository performance and to conduct research and development related to waste handling and potential reuse should be headquartered in Nye County—the only community in which repository performance, and the potential consequences of poor repository performance, would be an urgent daily concern throughout the expected 50-300 years of repository operations.

Equity in Nuclear Waste Transportation

Transportation of highly radioactive wastes in the situs county should be conducted by rail, and under policies which minimize the risks for Nye County communities of all high and low-level radioactive waste shipments.

A Viable Local Economic & Revenue Base

Special federal actions should be taken to provide the situs county an opportunity to develop a viable economic and revenue base, with facility and service systems comparable to those in other communities hosting USDOE nuclear facilities—even as the federal government plans to make an extraordinary future imposition in addition to the extraordinary impositions of the past.

5. The Nye County Board of County Commissioners intends to vigorously communicate situs county perspectives, concerns, and aspirations to officials in federal and state government and to other parties who have an interest in the Yucca Mountain repository decision, and to advocate its proposed protections in the event that the federal government decides to transfer the Nation's highly radioactive wastes to Yucca Mountain.

6. Nye County opposes any program for repository implementation that does not fully and forthrightly address its situs county concerns and aspirations.

7. The Nye County Clerk forthwith shall send a copy of this Resolution to the Governor of Nevada, all Nevada Assemblypersons and Senators; and Nevada's representatives in the U.S. House of Representatives and Senate.

DATED this 16th day of April, 2002.

PROPOSED on the 16th day of April, 2002 by Commissioner McRae.

VOTE: AYES: Commissioner McRae NAYS: _____
Jeff Jaguchni _____
Joni Eastley _____
Alansy Nittr _____

ABSENT: Richard Carson _____

ABSTENTIONS: 0 _____

EFFECTIVE this 16th day of April, 2002.

BOARD OF COUNTY COMMISSIONERS
COUNTY OF NYE, STATE OF NEVADA
By: [Signature]
Jeff Jaguchni, Chairman

ATTEST:

By: 
Sandra L. Mejlino, Nye County Clerk
and Ex-Officio Clerk of the Board

Resolution No. 2002-22
Nye County Board of Commissioners

BOARD OF COUNTY COMMISSIONERS
COUNTY OF NYE, STATE OF NEVADA

RESOLUTION STATING THE INTENT OF NYE COUNTY TO ACTIVELY AND CONSTRUCTIVELY ENGAGE WITH THE U.S. DEPARTMENT OF ENERGY (DOE), THE ADMINISTRATION, AND CONGRESS AS THE YUCCA MOUNTAIN PROJECT PROCEEDS TO FINAL DESIGN, LICENSING, AND IMPLEMENTATION:

WHEREAS, the United States Congress has voted to move the Administration's proposed Yucca Mountain Project, located in Nye County, Nevada, towards final design, licensing, and implementation.

WHEREAS, since 1940 the federal government has selected sites in Nye County for nuclear weapons testing, air force fighter training, and low-level radioactive waste disposal in cleanup of other sites in the nation's weapons complex.

WHEREAS, these activities (the Nevada Test Site, the Nellis Test and Training Range, and the Tonopah Test Range) have made major contributions to national defense but meager contribution to the Site County's economic or revenue base.

WHEREAS, the management of 11 million acres of federal lands in Nye County, comprising 98% of the county's total land area, makes meager contribution to the Site County's economic or revenue base, and forecloses opportunity for local community development.

WHEREAS, while the President has recommended and the Congress has mandated that DOE should prepare and apply for a license from the Nuclear Regulatory Commission to construct a repository at Yucca Mountain, many questions and issues regarding the Yucca Mountain Project remain to be addressed—including the safety and equity of the Yucca Mountain Project as proposed, and whether the Yucca Mountain Project will be implemented as proposed.

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**Resolution No. 2002-22
Nye County Board of Commissioners**

WHEREAS, the duty of the representative local government to ensure the health, safety, and welfare of its citizens requires the active engagement of Nye County to ensure that the questions and issues referenced above are addressed in design and licensing as well as in implementation, and to provide assurance of same for the residents of the single local entity to which the nation's highly radioactive wastes would be transferred.

WHEREAS, Nye County has prepared a "Community Protection Plan" that identifies the legitimate objectives of the site county, and the protections it expects in the event that the federal government transfers the nation's highly radioactive wastes from 131 sites in 39 states to a single site at Yucca Mountain, in Nye County.

WHEREAS, if implemented, the Yucca Mountain Project should be more than just a repository 12 miles north of Lathrop Wells in the Nye County community of Amargosa Valley, but the center for a community of synergistic scientific, engineering, educational, and entrepreneurial activities for management and possible reuse of the nation's highly radioactive wastes, and for the demonstration of alternative forms of energy for future generations.

WHEREAS, it is just such a vision for the Yucca Mountain Project that offers the best long-run prospect for converting long-standing resistance and mistrust within the State of Nevada to constructive engagement and cooperation.

WHEREAS, DOE can most effectively and efficiently implement the above-stated vision for the Yucca Mountain Project through close coordination and cooperation with its Nevada Site County, and Nye County intends to constructively engage with DOE to achieve this vision.

NOW THEREFORE, BE IT RESOLVED:

1. Nye County intends to engage energetically and constructively with the Department of Energy and the U.S. Congress as the Yucca Mountain Project proceeds to final design, licensing, and implementation.
2. Nye County intends to make constructive scientific, technical, and strategy contributions to address key issues in repository design, licensing, and performance confirmation, as well as transportation and project management.
3. Nye County anticipates constructive engagement by DOE, the Administration, and Congress in addressing such issues in ways that also address the concerns and aspirations of DOE's Site County in Nevada.
4. Nye County will use its "Community Protection Plan" as a resource and framework for its constructive engagement with DOE, the Administration, and

Resolution No. 2002-22
Nye County Board of Commissioners

DATED this 16th day of August, 2002.

PROPOSED on the 16th day of August, 2002 by Henry Neth

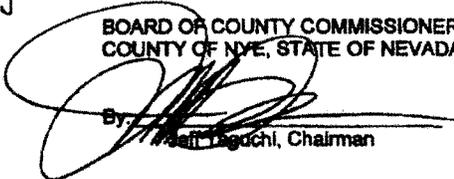
VOTE:	AYES:	McRae	NAYS:	
		Eastley		
		Tauchi		
		Neth		

ABSENT: Carver

ABSTENTIONS: 0

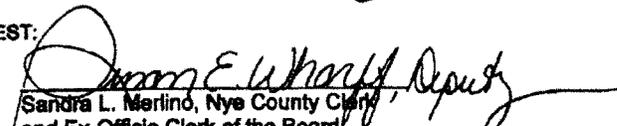
EFFECTIVE this 16th day of August, 2002.

BOARD OF COUNTY COMMISSIONERS
COUNTY OF NYE, STATE OF NEVADA



By: Masai Taguchi, Chairman

ATTEST:

By: 
Sandra L. Merlino, Nye County Clerk
and Ex-Officio Clerk of the Board

1 **NYE COUNTY RESOLUTION NO. 2004-25**
2 **RESOLUTION CONCERNING THE INTENT OF NYE COUNTY TO TAKE ACTION TO**
3 **MAXIMIZE THE SAFETY, ECONOMIC OPPORTUNITY AND SUCCESSFUL OUTCOME OF**
4 **THE YUCCA MOUNTAIN REPOSITORY AND TRANSPORTATION SYSTEM BY ACTIVELY**
5 **AND CONSTRUCTIVELY ENGAGING ALL RELEVANT PARTIES.**

6 WHEREAS the Nuclear Waste Policy Act of 1982 as amended designates Yucca Mountain,
7 located in Nye County, Nevada as the only site for consideration as the nation's repository for high-level
8 nuclear waste and spent fuel; and

9 WHEREAS the site has been determined to be a suitable location for a repository, the U.S Court
10 of Appeal dismissed all challenges to the site selection of Yucca Mountain, the scientific basis for the
11 selection process and the constitutionality of the resolution approving Yucca Mountain; and

12 WHEREAS the Department of Energy is preparing a license application for the repository and
13 expects to begin operation beginning in 2010; and

14 WHEREAS the Department intends to use rail transportation, the mode of transportation Nye
15 County prefers, to the maximum extent possible and the Department has made progress in planning the
16 transportation system by selecting the Caliente route; and

17 WHEREAS the Department is beginning the process of identifying repository and transportation
18 facilities which could be located off-site and is considering other means of maximizing local economic
19 opportunity; and

20 WHEREAS the Nye County "Community Protection Plan" has established a vision for
21 protecting the community and for the local development of synergistic economic, scientific and
22 educational activities for management and possible future reuse of material which will be stored at
23 Yucca Mountain; and

24 WHEREAS it is just such a vision for the Yucca Mountain Project that offers the best long-term
25 prospect for converting long-standing resistance and mistrust within the State of Nevada to constructive
engagement and cooperation; and

1 WHEREAS Nye County intends to work cooperatively with communities along the Caliente
2 route, the Department of Energy, and any other appropriate group for the purpose of achieving this
3 vision.

4 NOW THEREFORE, BE IT RESOLVED that Nye County intends to fully, constructively and
5 energetically support:

- 6 1. Development of a safe repository at Yucca Mountain,
- 7 2. Development of policy that empowers the County concerning repository and
8 transportation safety and health,
- 9 3. Creation of synergistic scientific, engineering, educational and entrepreneurial economic
10 opportunities in the County,
- 11 4. Assisting the United States of America in fulfilling the commitment to provide a geologic
12 repository for spent nuclear fuel and high-level waste to protect the health, safety and
13 welfare of the citizens of the United States,
- 14 5. Assisting the United States Department of Energy in meeting their timeline for the
15 reception of spent nuclear fuel and high-level waste at Yucca Mountain,
- 16 6. Maximizing jobs and economic opportunities for Nye County citizens,
- 17 7. Working cooperatively with appropriate federal entities, rural Nevada communities along
18 the transportation route and other parties willing to constructively engage in the
19 development of a repository that is safe and offers significant economic benefit to Nye
20 County and others most affected by the operation of a repository and related
21 transportation systems.

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APPROVED this 20th day of July, 2004
NYE COUNTY BOARD OF
COUNTY COMMISSIONERS:

Henry E. Meth
Henry E. Meth, Chairman

ATTEST:

Sandra E. Merlino
Sandra "Sally" L. Merlino, Nye County Clerk
and Ex-Officio Clerk of the Board

1 **NYE COUNTY RESOLUTION NO. 2011-21**

2
3 **A RESOLUTION OF THE NYE COUNTY BOARD OF COMMISSIONERS RESOLUTION**
4 **SUPPORTING COMPLETION OF THE NUCLEAR REGULATORY COMMISSION'S REVIEW OF**
5 **THE YUCCA MOUNTAIN LICENSE APPLICATION**

6 WHEREAS, the Nuclear Waste Policy Act of 1982, as amended, ("Act") selected Yucca
7 Mountain, located in Nye County as the only site to be characterized as the nation's first high-level
8 radioactive waste repository; and

9 WHEREAS, Congress in July 2002, in accordance with provisions of the
10 Act, as amended, overrode Nevada's notice of disapproval; and

11 WHEREAS, Yucca Mountain was designated to be the site for development of a permanent
12 repository for United States spent nuclear fuel and defense high level radioactive waste; and

13 WHEREAS, the U.S. Department of Energy ("USDOE"), in accordance with the Act, submitted
14 a License Application (LA) to the Nuclear Regulatory Commission (NRC); and

15 WHEREAS, that LA, in accordance with NRC regulations, was accepted for review by the NRC;
16 and

17 WHEREAS, the USDOE has since requested withdrawal of its submission of the LA "with
18 prejudice"; and

19 WHEREAS, the request for withdrawal has been denied by the Atomic Safety and Licensing
20 Board (ASLB) and challenged in Federal Court; and

21 WHEREAS, the Commissioners of the NRC have not issued a final ruling on their review of the
22 ASLB decision that USDOE does not have the legal authority to withdraw the Yucca Mountain license
23 application; and

24 WHEREAS, the nation needs to move forward on the established NWPA strategy that provides
25 for the permanent storage of spent nuclear fuel and high level waste; and,

 WHEREAS, the Nye County Board of Commissioners (Board) recognizes that further delays in
the development of a permanent geologic repository will result in significant public expenditures and
potentially jeopardizes the future expansion of nuclear power production and energy independence; and

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WHEREAS, the Board is convinced that until such time as the NRC completes its review of the LA, Nye County, the State of Nevada and the nation will be denied a scientific and technical determination of the potential of the Yucca Mountain repository to be built and operated safely and successfully; and

WHEREAS, Nye County adopted Resolutions 2002-7, 2002-22 and 2004-25 defining the County's involvement as the site county for the nation's geologic repository for spent nuclear fuel and defense high level waste,

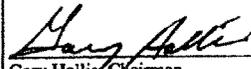
NOW THEREFORE, it hereby is resolved as follows:

1. The Yucca Mountain licensing proceedings should be restarted and the NRC should complete a thorough and detailed review of the License Application; and
2. If upon completion of the license application review by the NRC staff and the licensing proceeding before the ASLB, the conclusion is that the Yucca Mountain repository can be constructed and operated safely, Nye County reaffirms our prior resolutions and supports such construction and operation consistent with these prior resolutions ; and

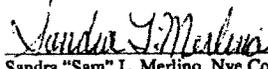
APPROVED this 15th day of March, 2011.

NYE COUNTY BOARD OF COUNTY COMMISSIONERS:

ATTEST:



Gary Hollis, Chairman



Sandra "Sam" L. Merlino, Nye County Clerk
And Ex-Officio Clerk of the Board

///
///

CLARK HILL

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March 5, 2012

Timothy A. Frazier, *Designated Federal Officer*
 U.S. Department of Energy
 1000 Independence Avenue, SW.
 Washington, DC 20585
brc@nuclear.energy.gov

Re: Nye County comments on the Final Report to the Secretary of Energy from the Blue Ribbon Commission on America's Nuclear Future

I am providing the following comments on behalf of my client Nye County, Nevada, regarding the Blue Ribbon Commission's Final Report on America's Nuclear Future.

EXECUTIVE SUMMARY OF PRINCIPAL COMMENTS

1. Nye County, Nevada, agrees with a principal finding and recommendation of the Blue Ribbon Commission ("BRC") that the United State should undertake *"the timely development of one or more permanent deep geological facilities for the safe disposal of spent fuel and high-level nuclear waste."* In its previous draft report, BRC had acknowledged a need "to promptly" develop one or more deep geological repositories. Whether BRC's concern is for "timely" or "prompt" development of a permanent repository, the only repository that can possibly be completed in the near term is the proposed Yucca Mountain repository. A neutral BRC recommendation could have called for the NRC to reach a final decision on the merits of the currently pending Yucca Mountain license application, which took billions of taxpayer dollars to produce. This added recommendation would have been consistent with the BRC's support for "timely development" of a permanent deep geological repository and could be implemented while BRC's other sweeping recommendations are considered.

2. The BRC suggestion that a new corporation be established to comprehensively handle spent fuel and high level waste disposal issues should be implemented prospectively only, if implemented at all. The call for new legislation should not interfere with the Yucca Mountain licensing proceeding pursuant to the NWPA. The complex BRC proposal recommending this and other major statutory, regulatory, and social changes, in addition to research programs, as a substitute for the current NWPA framework would take decades to implement, with no guarantee of success, and would be just as vulnerable to last minute political derailment as the Yucca Mountain proceeding.

3. Nye County opposes BRC's recommendation that the NWPA be amended so that consolidated interim storage facilities may be sited and licensed before the first permanent repository is licensed. On one hand, all but the final site selection and construction of such a storage facility can be achieved under the NWPA. However, as BRC acknowledges, if interim storage is allowed to proceed ahead of the repository, it could become de facto permanent or long-term storage. The current staging required by the NWPA is therefore prudent and should be maintained.

4. The BRC report now briefly acknowledges that *Nye County supports completion of the NRC licensing proceeding, and construction of the project if NRC determines it is safe.* However, the report minimizes the extent of local support for the repository and asserts that the majority of the State of Nevada opposes the project without providing documentary support. Other adjoining counties have stated support for the project, which is opposed by Nevada's federal and State politicians.

5. Nye County agrees that all affected levels of government must have, at a minimum, a meaningful consultative role in important decisions and that funding of active local participation in repository activities is essential to its success. Pursuant to the NWPA, Nye County has actively consulted with DOE on every step of the repository project, has provided meaningful oversight of all activities at Yucca Mountain, and is a full party participant in the Yucca Mountain licensing proceeding pending before the NRC. Nye County has informed DOE of its consent to serve as the host county for the Yucca Mountain repository.

OVERVIEW

For many decades, Republican and Democrat Administrations alike struggled to find a permanent solution for the safe disposal of high-level nuclear waste and spent nuclear fuel. When the political parties and other stakeholders finally reached an acceptable compromise on a policy direction for the Nation, that policy was embodied in law as the Nuclear Waste Policy Act ("NWPA"). Adhering to the statutory requirements and scientific and technical criteria for site selection, the Executive and Legislative Branches collectively narrowed site characterization to a single, geologically suitable location for the repository, Yucca Mountain, in Nye County, Nevada, about 100 miles from the nearest major population center, Las Vegas. After the State of Nevada failed multiple times to thwart that selection politically and in federal court, the Department of Energy ("DOE") finally filed a license application ("LA") to construct the repository with the Nuclear Regulatory Commission ("NRC") in 2008.

In accordance with carefully crafted statutory and regulatory licensing requirements, interested state, local government, tribal, and other parties intervened in the NRC licensing proceeding, ensuring that all sides on the key issue-- whether or not the facility could be constructed and operated safely-- would be fully heard in a neutral forum. The parties filed approximately three hundred environmental, health, and safety contentions with the assigned NRC Atomic Safety and Licensing Board ("ASLB"). The State of Nevada filed the vast majority of the contentions, re-raising many issues that had already been adjudicated in the past.

The LA adjudication was entering the discovery phase in 2010, and the ASLB was ready to rule on purely legal contentions and proceed with discovery, when DOE abruptly announced that it wanted to withdraw its LA with prejudice, even though DOE still maintained that the repository could be safely built and operated.¹ The ASLB denied DOE's formal Motion to Withdraw on June 29, 2010, and the NRC unilaterally requested parties to file briefs on the question of whether or not NRC should review the ASLB's decision. Thereafter, NRC's Chairman improperly halted staff development of Safety Evaluation Reports (SERs) essential to the licensing proceeding, even though the SERs were nearly complete and the ASLB adjudicatory process was still pending.² An observer of the licensing proceeding need not be a cynic to conclude that the timing of the actions by the Secretary of DOE and NRC's Chairman were based on the fear that the SERs, and the licensing proceeding itself, were about to add weight to the claim that Yucca Mountain could be constructed safely. On September 9, 2011, after more than a year delay, NRC issued a split 2 to 2 decision that left the ASLB decision intact as a matter of law. However, the NRC acted inconsistent with that decision in also ordering the ASLB to preserve its record of the proceedings and suspend the licensing determination until Congress provided additional funding. That decision is currently pending review by the United States Court of Appeals for the DC Circuit.

Prior to DOE's filing the Motion to Withdraw, President Obama stated that advances in science and technology demanded a rethinking of the entire back-end of the nuclear fuel cycle and asked DOE to establish this Blue Ribbon Commission ("BRC") and directed it to consider all alternatives for the storage, processing, and disposal of civilian and defense spent nuclear fuel and nuclear waste. The BRC published its draft report³ open for public comment until October 31, 2011. Nye County filed formal comments with the BRC on October 25, 2011. BRC then issued its Final Report on January 26, 2012.⁴

BRC's Final Report offers numerous suggestions for, in essence, establishing a revised policy and new program for nuclear waste disposal and restarting the repository site selection process. While Nye County agrees in principle with some of the BRC proposed recommendations and key strategies for the future, most of those changes can be made prospectively for future projects without further delaying the Yucca Mountain licensing proceedings under the NWPA. Nye County is deeply concerned that implementation of a new policy and the requisite statutory and regulatory changes will be costly, time consuming, and in the end, still dependent upon the cooperation of many diverse parties within the federal government and among state, local and tribal parties, and the public at large. In short, implementation of BRC strategies will assuredly take decades, and may not be implementable at all, given political realities. Therefore, Nye County strongly recommends completion of the

¹ Order of ASLB, *in re* Dept of Energy, NRC No. 63-001, ASLB No. 09-892-HLW-CAB04 (June 29, 2010) at 4 (hereinafter cited as "ASLB Order")

² The NRC Staff has now issued TERs on safety issues that presents staff findings short of conclusions regarding safety. See note 35 *infra*, and accompanying text.

³ Blue Ribbon Commission on America's Nuclear Future, Draft Report to the Secretary of Energy, July 29, 2011 (hereinafter cited as "Draft Report").

⁴ Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy, January 26, 2012 (hereinafter cited as "Final Report").

ongoing Yucca Mountain licensing proceeding, regardless of whether the BRC's recommendations are implemented for future nuclear waste programs.

I. YUCCA MOUNTAIN IS THE ONLY REPOSITORY SITE THAT HAS THE POTENTIAL TO BE EXPEDITIOUSLY DEVELOPED

Nye County agrees with a principal finding and recommendation of the BRC that the United State should undertake *"the timely development of one or more permanent deep geological facilities for the safe disposal of spent fuel and high-level nuclear waste."*⁵

Given BRC members shared "sense of urgency"⁶ and their final determination that a geological repository is essential,⁷ it is difficult to reconcile the report's treatment of the one repository that potentially could be developed promptly, namely Yucca Mountain. Acknowledging the central importance of finding a suitable geological "medium" for nuclear waste disposal; the considerable time it has taken to find such a location; and the fact that a final decision relative to the Yucca Mountain license application was about to be made, BRC's recommendation regarding the need for one or more repository leads inevitably and logically to a single conclusion: the Yucca Mountain licensing proceeding should be completed as soon as possible. An objective assessment of all relevant factors demonstrates that no other site will be available for decades, even under the most optimistic view of the future.

The NRC has now finally ruled on DOE's Motion to Withdraw the license application and left the ASLB denial of DOE's Motion intact as a matter of law. Therefore, the ASLB is required by the NWPA to continue the licensing proceeding to determine if Yucca Mountain could be constructed and operated safely.⁸ Given the history of the long search for a suitable site for a repository, and the amount of effort and resources that have already been invested in the Yucca Mountain licensing proceeding, obtaining a final NRC safety determination is the only timely method to secure the first suitable site for a United States repository.

II. THE NWPA PROGRAM FOR DEVELOPMENT OF A PERMANENT NUCLEAR WASTE REPOSITORY, WHILE DELAYED, IS WORKABLE AND INCORPORATES THE VERY STRATEGIES RECOMMENDED BY THE BRC

While noting what the BRC views as numerous deficiencies in the current policy and repository requirements established by the NWPA, DOE, and NRC, the Final Report fails to emphasize that substantial progress was being made toward a final decision on the LA. Nor are

⁵ Final Report at Ch. 4, p. 27. The Draft BRC Report at Ch. 4, paragraph 1, stated the goal in the following manner: *"Our first recommendation, therefore, is that the United States must proceed promptly to develop one or more permanent deep geological facilities for the safe disposal of spent fuel and high-level nuclear waste."* (emphasis added).

⁶ Final Report at p. vi.

⁷ Final Report at p. xi.

⁸ NWPA, 42 U.S.C. § 10134(d). The Inter-Agency Group established by President Carter and the works of several National Academy of Science ("NAS") committees have addressed delays in establishing a permanent repository, particularly in the 2001 NAS study, *Disposition of High-Level Waste and Spent Nuclear Fuel: The Continuing Societal and Technical Challenges*. All of these groups reached same conclusion: but for the politicization of nuclear waste issues, the solution proposed in the NWPA would be nearing completion of significant safety milestones.

the new strategies outlined by the BRC guaranteed to expeditiously achieve the ultimate goal of safe permanent disposal. Most importantly, if Yucca Mountain is abandoned, and the new strategy and processes outlined by BRC fail, the Nation will have wasted decades of progress achieved under the NWPA.

Proceeding with the ASLB adjudication of the LA would safeguard against such an eventuality and would not foreclose the improvements recommended by the BRC for consolidated interim storage, major organizational changes, modifications in the management of the nuclear waste fund, and a search for a suitable location for a second repository under an improved statutory and regulatory framework.

BRC's draft and final reports both assert that the BRC takes no position on the proposed Yucca Mountain repository or the stalled NRC licensing proceeding.⁹ However, that position is undermined by the erroneous or unsupported BRC findings of flaws in the NWPA and Yucca Mountain repository program contained elsewhere in the report.

Both the BRC's draft report and Final Report described the NWPA and the statutorily established Yucca Mountain repository program in the report as "troubled" and "deeply flawed."¹⁰ BRC still contends that "it will cost something to implement a successful U.S. waste management program; however, trying to implement a deeply flawed program is even more costly..."¹¹ Despite the detailed comments and corrections provided to BRC by Nye County and numerous other sources regarding the draft report, BRC's Final Report still does not present an even-handed or complete review of the existing NWPA programs, and consistently fails to provide adequate supporting evidence and analysis demonstrating that the current program is fundamentally flawed.

For example, the U.S. repository development program is not characterized by decades of failed efforts, despite BRC conclusion to the contrary. Rather, the program has advanced at least as far, if not farther, than repository development programs in other nations. Currently, the U.S. repository program is thirteen years behind the schedule outlined in the NWPA, as amended.

⁹ The Final Report at p. vii-viii, and the Draft Report at p. vi, both state the following: "We have not Rendered an opinion on the suitability of the Yucca Mountain site or on the request to withdraw the license application for Yucca Mountain. Instead, we focused on developing a sound strategy for future interim storage and permanent disposal facilities and operations that we believe can and should be implemented regardless of what happens with Yucca Mountain." See also Final report at xli. The Final Report asserts that an assessment of Yucca Mountain was not in BRC's charter. Final Report at pp. vii, xli. On the contrary, the Charter, which calls for a "comprehensive review" of "all alternatives" for "nuclear waste disposal" would seem to require an assessment of the only currently existing permanent disposal option, not preclude such an assessment. Final Report, BRC Charter at p. 122. Simply because the BRC was "not a siting committee" does not foreclose an assessment of Yucca Mountain generally or consideration of whether or not the Yucca licensing proceeding should continue as a possible means to "timely develop" a permanent repository. BRC notes that, in any event, the NWPA limits the amount of spent fuel that can be disposed at Yucca until a second repository is built. However, that comment appears to be no more than an excuse to avoid directly addressing the Yucca Mountain option. The BRC knows full well that Yucca's capacity was arbitrarily limited and could easily be expanded if the design and location are determined to be safe. Moreover, BRC was not hesitant to recommend changes in the NWPA in other areas where it supported its position. See, e.g., Final Report at Ch. 5.

¹⁰ Final Report at p. vii; Draft Report at pp. i, iv, vi, xiv.

¹¹ Final Report at p. vii; Draft Report at p. iv.

However, significant annual progress to advance the repository development initiative was being accomplished until recent actions by the Administration sought to terminate the Yucca Mountain program without safety justification for such action. Rather than being viewed as failed efforts, the activities of the past 24 years could be viewed as the results of an "adaptive management" approach, coupled with "appropriate Congressional control," the very approach recommended by the BRC in its Final Report.¹²

Recent political opposition by the Administration and litigation by a single state have been the primary impediments to the timely implementation of the Nuclear Waste Policy Act. A neutral and balanced analysis would also have mentioned that many of BRC's suggestions for future nuclear waste programs are already incorporated in the NWPA and were implemented during the process of siting the Yucca Mountain project.

For example, the BRC recommends an approach to siting and developing nuclear waste management and disposal facilities in the United States that is adaptive, staged, consent-based, transparent, and standards-and science-based.¹³ The NWPA and its implementing regulations contain a careful balance of all these elements. The siting criteria and identification of potential repository sites were based upon scientific assessments that took years to complete. Moreover, the NWPA and the NRC licensing process are staged to allow neutral consideration of design, construction, and operation issues. The NWPA also requires Congressional involvement at each critical stage to insure that any adaptive changes necessary in the national interest are properly taken into account. Federal, State, local and tribal involvement and oversight are provided for at every phase of the process.

The BRC asserts that "[e]ffectively managing the back end of the nuclear fuel cycle requires a vision and a strategy. Both have been lacking in the U.S. waste management program to date."¹⁴ This sweeping statement is unfair, misleading, and inaccurate. The NWPA is a carefully crafted national strategy and vision for disposal of high level waste that enjoyed bipartisan support until the current President and DOE unilaterally decided to withdraw the Yucca Mountain license application without first seeking Congressional approval. The NWPA policy had endured for more than two decades under changing political landscapes and numerous Administrations. The policies and procedures established in the NWPA were being followed and the waste repository program was gathering momentum. Just as the NWPA policy framework was about to reach fruition in the NRC licensing process, with a possible independent verification that the Yucca Mountain Repository could be constructed safely, the longstanding policy framework was undermined by Executive Branch actions that sidestepped Congressional approval. Had it not been for this political interference, which the BRC apparently will not, or cannot acknowledge, the NWPA licensing proceeding for Yucca Mountain, although delayed, should now be close to completion, with an NRC final decision on relevant safety issues.

The BRC's appropriate insistence on "transparency" and "fairness"¹⁵ in nuclear waste decision-making is ironic. The most transparent and objective feature in the consideration of the

¹² See generally Final Report at Ch. 2 ("Foundations of a New Strategy")

¹³ See generally Final Report at Ch. 2; Draft Report at p. xv.

¹⁴ Final Report at p. 4; Draft Report at Section 2.1, p. 4.

¹⁵ Final Report at pp. 6-7

proposed Yucca Mountain repository is the ASLB licensing proceeding. The adjudication is conducted by neutral administrative judges and NRC technical experts. Any party with a stake in the licensing proceeding may intervene as a party and file safety and environmental contentions. Evidence is presented in a public adjudicatory forum governed by rules similar to those in federal court. The only non-transparent action under the NWSA to date has been the DOE's and NRC's politically motivated interference with the statutory ASLB licensing process for reasons unrelated to safety.

The assertion that had the Administration not halted the Yucca program, the LA would have led to "further controversy, litigation, and protracted delay"¹⁶ turns the current situation on its head. Yes, there is an opportunity for judicial review of a final NRC decision on the repository license application. However, it was DOE's attempt to unilaterally withdraw the application, on grounds other than safety, and NRC's inexcusable delay in ruling on DOE's Motion to Withdraw that led to "further controversy [involving NRC's Inspector General, Congress, and the Courts], litigation, and protracted delay". DOE and the NRC Chairman's actions prevented the ASLB and NRC from meeting their statutory responsibility to rule on the safety merits of the LA within the three or four year period required by law.¹⁷

Regarding the setting of regulatory standards, BRC starts with the concession that EPA and NRC should retain their respective roles in setting the repository safety and environmental standards.¹⁸ Both agencies, together with the National Academies of Science, were directly involved in the setting of science-based standards and procedures for the Yucca Mountain repository under the NWSA, and the standard-setting process took from 1987 to 2005. There is no reason to believe that new, and *presumably* better, regulations could be promulgated and implemented, without litigation, any faster.

In this regard, the BRC recommends that safety and other performance standards and regulations should be finalized prior to the site-selection process.¹⁹ BRC also recommends that EPA complete this process in a thorough and timely way.

Nye County agrees with those goals for future projects, and notes that thorough and effective standards have been painstakingly promulgated with respect to the Yucca Mountain repository, although not as quickly as many would have wanted. Despite the implications in the BRC Final Report, there is no reason to believe that the current safety and radiological standards for Yucca Mountain are inadequate for the current proposal or for future repositories.²⁰ As noted

¹⁶ Final Report at p. vi; Draft Report at p. iii.

¹⁷ NWSA, 42 U.S.C. § 10134(d).

¹⁸ See Final Report at Ch. 6, 9, 10.

¹⁹ See, e.g., Final Report at Ch 10; Draft Report at Section 9.3, page 104.

²⁰ During a discussion of the nature of radiation hazards, the BRC draft report correctly states, "Human beings are exposed continuously to very low levels of naturally-occurring and man-made radiation (see text box and figure 7)." Draft Report, Section 3.2, p. 14, Figure 7 shows radiation doses of varying levels and the hazard posed at higher levels. In particular, the figure shows a dental x-ray produces about a 5 microSievert dose; daily background radiation to an average individual is about 10 microSieverts; a chest x-ray exposes an individual to about 100 microSieverts; and at 100 milliSieverts (an annual dose 10,000 times background radiation), effects of lifetime risk of cancer become evident. To put this information in proper perspective, as documented in DOE's Yucca Mountain license application, the estimated highest annual dose to a hypothetical Nye County resident living closer than anyone actually does to Yucca Mountain would be less than 3 microSieverts for 10,000 years and less than 30

elsewhere in the BRC report, it took EPA 16 years to establish the current Yucca Mountain standard. While the BRC voices a preference for generic standards, the history of environmental, health, and safety regulations demonstrates that site specific requirements are usually needed to adequately protect human health and safety. Those standards should be left intact for Yucca Mountain licensing and construction.²¹

The BRC Report emphasizes that the public is entitled to a clear understanding of how decisions were reached and how different values and interests were considered and resolved in the process.²² Following its own advice, the BRC should demand that the Administration provide a fuller explanation of why it makes sense to abandon decades of work and tens of billions of dollars in the hope of devising "better" regulations and disposal options compared to those governing the proposed Yucca Mountain project, when the radiation levels anyone could possibly receive at the proposed Yucca Mountain project are much lower than the very low levels of naturally occurring radiation.

Given the BRC's commitment to research into fundamental issues related to storage and disposal of nuclear waste, expressed throughout the Report,²³ it is difficult to understand why BRC did not support capturing the value represented by billions of taxpayers' dollars already expended in examining the Yucca Mountain proposal. That capture would be accomplished by a final determination by the ASLB on whether or not repository construction could proceed safely. Such information would prove invaluable to future repository efforts, regardless of the NRC decision on the merits, as even the Administration acknowledged in 2010.

III. NYE COUNTY OPPOSES BRC'S RECOMMENDATION THAT INTERIM STORAGE BE ALLOWED TO PROCEED BEFORE A PERMANENT REPOSITORY IS LICENSED SINCE THAT RISKS MAKING THE INTERIM STORAGE A DE FACTO REPOSITORY

A monitored retrievable storage facility ("MRS") allowed by the NWPAs could serve as the type of consolidated interim storage facility advocated by the BRC.²⁴ As the BRC has acknowledged, the NWPAs currently allows DOE to pursue many activities in advance of final site selection for an MRS, including performing the systems analyses and design studies needed for a conceptual design of a highly flexible, initial federal interim spent fuel storage facility; assembling information that would be helpful to the siting process for such a facility; attempting to identify local governments willing to host the site; and working with nuclear utilities, the nuclear industry, and other stakeholders to promote the standardization of dry cask storage

microSieverts for a million years. That means that for over one million years, the highest reasonably estimated dose to any individual resulting from a repository at Yucca Mountain would be equivalent to adding 3 days of background exposure to the individual and less than the radiation dose received by someone flying from New York to Los Angeles (40 microSieverts per Figure 7). In fact, the BRC members received a much higher radiation dose by flying from meeting to meeting than any member of the public ever would from the proposed Yucca Mountain Repository.

²¹ Nye County notes that requiring new standards to be completed upfront for the siting and construction of a second repository could also delay that process for decades.

²² Final Report at pp. 7-8.

²³ See, e.g., Final Report at Ch. 11.

²⁴ Final Report Ch. 5.

system.²⁵ However, any license issued by the NRC for a centralized interim storage facility under the current MRS provisions of the NWPA must specify that construction of the MRS cannot begin until after the NRC has issued a license for construction of a geologic repository.²⁶ BRC recommends that the NWPA be amended to allow the siting and construction of interim consolidated storage before the first permanent repository is licensed.

Nye County opposes this recommendation. The authority to select a site for the MRS and to proceed with construction or expansion of the MRS facility is linked to progress on licensing and construction of a permanent repository for a very sound policy reason: Congress did not want the MRS to become a de facto permanent repository. While recognizing this problem,²⁷ the BRC insists that interim storage is urgently needed and should not await the availability of a permanent repository. Nye County believes that the NWPA strikes the right balance and allows many elements of the consolidated storage program to proceed without serving as a potential roadblock to permanent disposal.

IV. THE BRC FAILS TO ACKNOWLEDGE THE FULL EXTENT OF NATIONAL AND LOCAL SUPPORT FOR THE YUCCA MOUNTAIN LICENSING PROCEEDING AND DRAWS A FALSE CONTRAST BETWEEN YUCCA MOUNTAIN AND WIPP

BRC insists that the siting of any repository be "consent based" with the support and cooperation of the local communities surrounding the project.²⁸ BRC devotes major portions of its Final Report to the concept of a consent-based approach to siting and development of a nuclear waste repository, and the need for local involvement and acceptance of the project.²⁹ Because Nye County is the local government host for the proposed Yucca Mountain project, the County has a unique perspective on this recommendation—a perspective that until the final Report was virtually ignored by the BRC.

BRC's Report falsely implies that such factors were not properly accounted for previously under the NWPA framework; nor does it fully concede that unanimous support for any major project is impossible in this era of "not in my back yard" ("NIMBY").³⁰

Regarding the first point, the BRC fails to provide a rigorous analysis of the numerous provisions in the NWPA that require just such local involvement. Congress may not have structured the provisions exactly as the BRC would have, but there is no assurance that any future legislation will strike closer to BRC's ideal. For example, several discrete provisions of the Act call for oversight of DOE's siting, construction, and operation of a nuclear waste repository by affected units of local government, tribes, and states at federal expense.³¹ The Final Report at least acknowledges what the BRC draft report entirely omitted: that Nye County, Nevada, which is the local County host for the proposed Repository, has from the outset supported the Yucca Mountain project, provided NRC ultimately determines that the project can

²⁵ See generally Final Report Ch. 5; Draft Report at pp. 43-44.

²⁶ NWPA § 148(d), 42 U.S.C. § 10168(d).

²⁷ Final Report at p. 41.

²⁸ Final Report at Ch. 6.

²⁹ See, e.g., Final Report at Ch. 4 and Ch. 6.

³⁰ But see Draft Report at section 2.3.8 at p. 8.

³¹ See, e.g., NWPA, 42 U.S.C. §§ 10136, 10137; 10138.

be safely constructed and operated.³² As now acknowledged by BRC, Nye County has been joined by other adjoining counties in support of continuing the Yucca Mountain project licensing proceeding. Indeed, broad national support over many decades for the NWPA framework persists, and is not counterbalanced by the State of Nevada's political opposition.³³

The fact that the State of Nevada and Clark County, Nevada, have consistently opposed the project should not prevent the licensing process from reaching a conclusion on the basic safety issues. The ASLB assigned to the proceeding has already dismissed the purely legal contentions filed by Nevada and supported by Clark County, and has yet to sustain a single safety contention filed by any party.³⁴ NRC staff Safety Evaluation Reports, although stripped of their technical conclusions regarding the safety of the repository construction, and issued instead as Technical Evaluation Reports³⁵ at the direction of the NRC Chair, leave little doubt that staff believed that there were no major irresolvable safety issues with the LA.³⁶ For example, the various DOE calculations of possible radiation exposures from the repository meet the regulatory requirements in 10 C.F.R. Part 63, and, in fact, such exposures are much lower than required.

³² Nye County has informed BRC of its support for the licensing proceeding as early as February 2011. Nye County Letter to the BRC (February 7, 2011).

³³ More than two dozen prominent national, state, local and Native American organizations have written to the U.S. Senate expressing their support for the resumption of the Yucca Mountain license review by NRC's ASLB and related licensing-support activities at DOE. The 26 organizations – which comprise a cross-section of energy consumers, regulators, elected officials, Native Americans and community entities and businesses – include the National Association of Regulatory Utility Commissioners, U.S. Chamber of Commerce, Prairie Island Indian Community, U.S. Nuclear Infrastructure Council, Institute for 21st Century Energy, Nuclear Waste Strategy Coalition, U.S. Nuclear Energy Foundation and the Sustainable Fuel Cycle Task Force. Referring to the above-stated findings by the BRC and by Congress, the letter states that “we agree that the need for the Federal government to meet its responsibility for commercial spent fuel and defense waste management under the Nuclear Waste Policy Act is a matter of urgency – and that further delay is only exacerbating taxpayer liability and diminishing confidence in resolution of this national concern.” Letter from Sustainable Fuel Cycle Task Force to United States Senate (September 15, 2011) at p. 2.

³⁴ Memorandum and Order of ASLB, *In re* Dep't of Energy, NRC No. 63-001-HLW, ASLB No. 09-892-HLW-CAB04 (Dec. 14, 2010) at pp. 1-35.

³⁵ NUREG-1949, Volume 1, “Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada; Volume 1: General Information” (Note that Volume 1 was issued as a Safety Evaluation Report. The title page includes the notation: “Manuscript Completed: August 2010, Date Published: August 2010”); NUREG-2107, “Technical Evaluation Report on the Content of the U.S. Department of Energy's Yucca Mountain Repository License Application; Postclosure Volume: Repository Safety After Permanent Closure.” (ML11223A273) (Note that this is what would have been Volume 3 of the SER had NRC issued the postclosure volume as an SER. The title page includes the notation: “Manuscript Completed: July 2011, Date Published: August 2011”); NUREG-2108, “Technical Evaluation Report on the Content of the U.S. Department of Energy's Yucca Mountain Repository License Application; Preclosure Volume: Repository Safety Before Permanent Closure” (ML11250A093) (Note that this would have been SER Volume 2. The title page includes the notation: “Manuscript Completed: August 2011, Date Published: September 2011”); NUREG-2109, “Technical Evaluation Report on the Content of the U.S. Department of Energy's Yucca Mountain Repository License Application; Administrative and Programmatic Volume” (ML11255A002) (Note that this would have been SER Volume 4. The title page includes the notation: “Manuscript Completed: September 2011, Date Published: September 2011”)

³⁶ In the Introduction to the TER on postclosure issues, the NRC staff notes that the “TER was developed using the regulations at 10 CFR Part 63 and guidance in the Yucca Mountain Review Plan (YMRP). The TER does not, however, include conclusions as to whether or not DOE satisfies the Commission's regulations.” NUREG-2107, “Technical Evaluation Report on the Content of the U.S. Department of Energy's Yucca Mountain Repository License Application; Postclosure Volume: Repository Safety After Permanent Closure.” (ML11223A273) (The title page includes the notation: “Manuscript Completed: July 2011, Date Published: August 2011”) at p.1, Introduction

The NRC staff reviewed the SAR and other information DOE submitted in support of its calculations and concluded the following: "DOE submitted information consistent with the guidance in the YMRP. Specifically, NRC staff notes that the repository (i) is composed of multiple barriers; (ii) the Total Systems Performance Assessments (TSPAs) used for the individual protection, human intrusion, and separate groundwater protection calculations are reasonable; and (iii) the technical approach and results in DOE's TSPA, including the average annual dose values and the performance of the repository barriers, discussed in this TER, are reasonable."³⁷ Thus, the NRC staff did, in essence, conclude that key safety features incorporated in DOE's license application met NRC regulatory safety requirements.

BRC is also well aware that unanimous backing, or even consensus support, for any major federal project is often unachievable, even if the project is located on federal lands, as Yucca Mountain is. The reasons are political, not sound science. A "consent based" approach advocated by the BRC is preferable, but hardly the most important siting factor. As the Final Report now acknowledges, the primary discriminator must be the scientific and technical suitability of the disposal medium. As our experience under the NWPA demonstrates, the technical site evaluation is a long and difficult process. Once that determination is made for one or more sites, then and only then, should cultural and political factors be weighed in the siting process. That is the approach taken in the NWPA.

When the NWPA was drafted, the Governors of the fifty States recognized this reality and recommended that the NWPA not grant the selected host state veto power over siting of the repository, knowing full well that political realities, rather than technical considerations, would make it virtually impossible for any governor to approve of the siting. Instead, the NWPA gave the governor of the host state the right to file an objection, and Congress and the President the ability to over-ride that objection. That is in fact what happened with the Yucca Mountain siting, and would almost certainly happen again with the siting in most, if not all, of the other forty-nine states.³⁸

BRC's asserted differences between the local support for the Waste Isolation Pilot Project ("WIPP") in New Mexico and at Yucca Mountain in Nevada are not compelling.³⁹ As BRC now acknowledges, both New Mexico and Nevada used litigation to oppose the nuclear waste projects in their respective state. The key difference between WIPP and Yucca are not the ones that are articulated by the BRC, but rather DOE's willingness to fully litigate the issues in WIPP and its determination to stay the course in New Mexico, but not at Yucca Mountain. EPA has been involved in the standards development process for both projects. The host local communities supported the project at WIPP, and from the outset at Yucca Mountain, so long as they were constructed and operated safely. The experts on the BRC are well aware of the difference between perceived and actual risks, but fail to emphasize that the local support in New Mexico measurably strengthened after the WIPP facility was constructed and operated safely for

³⁷ *Id.* at p. xxii. (emphasis added)

³⁸ Both the Final Report and the Draft Report discuss previous efforts to find a volunteer state for a repository site. The BRC notes there were several communities interested but, "In no case, however, was a host state supportive of having the process go forward." Draft Report at p. 24. A sober assessment of the future indicates state politics are unlikely to change in the future.

³⁹ Final Report at pp. 3,57-58

several years. Once a project is completed, and benefits are accrued from a project, irrational fears and misunderstandings that persist before a project is built can be overcome. Sometimes even a vilified project becomes not only accepted, but welcomed by the community when its benefits become obvious once the project is constructed and operated.⁴⁰

IV. IN ESSENCE, THE BRC RECOMMENDS STARTING OVER AGAIN WITH ESTABLISHING REPOSITORY POLICY AND THE SITING PROCESS WITH NO ASSURANCE OF SUCCESS IN THE END

BRC's recommendation in Chapter 6 for a new approach to siting and developing nuclear waste management and disposal facilities in the future is in essence a suggestion for starting over with the entire process of finding sites for repositories.⁴¹ To accomplish this goal, the BRC has made a series of sweeping recommendations regarding establishing and funding a new independent organization for the handling of nuclear fuel disposal, changes to the management of the nuclear waste fund paid into by the utilities, accelerated development of interim storage, new generic regulations and siting criteria for facilities, and research both nationally and internationally—all of which require time, resources, and in most cases, statutory changes.

BRC's recommendations collectively amount to starting over and, as a result, the Nation would face 20 or more years to simply get back to where the Yucca Mountain program is now—with no assurance of greater State or local support than is present now. Throughout its Report, the BRC criticized ways in which the Yucca Mountain project has progressed by making a false comparison with the idealized way the BRC postulates site designation should proceed in the future—without doing a reality check. Site designation under the BRC proposal will take enormous amount of time and resources with no more guarantee of success than under the NWPAs.

For example, BRC calls for a new, single-purpose organization to develop and implement a focused, integrated program for the transportation, storage, and disposal of nuclear waste in the United States.⁴² Presumably, DOE's credibility in nuclear waste management is irretrievably lost. Assuming BRC's proposal ever achieves Executive and Legislative Branch approval, and stakeholder support, the new organization will be confronted with all the same challenges that hampered the DOE. There will always be political control on spending. The constancy of leadership for the nuclear waste program is the single most important element of success for any entity responsible for the repository program. The tenure of the individual that heads the organization must be more than the one to two years characterized by the current NWPAs program heads.

More importantly, there is nothing fundamentally new in most of the BRC recommendations. The history of the NWPAs itself and the evolution of the process over time included each and every one of the five siting processes included in this BRC recommendation. The option for a state to veto the site recommendation was considered and rejected, with sound

⁴⁰ Melnyk & Andersen, OFFSHORE POWER, *Building Renewable Energy Projects in U.S. Waters* (PennWell 2009) at 94, 224-225.

⁴¹ Final Report at Ch. 6.

⁴² Final Report at p. vii, and Ch. 7.

justification, during deliberations on the NWPA. Any consent-based process must be subordinate to a rigorous scientific and technical process as discussed previously. BRC implies that the process of involving state and locals just needs to be done better, with greater efforts to involve and educate the host population. However, educating the general public on nuclear safety and risk has not been achievable, despite enormous effort by EPA, DOE, the National Academies of Science, and most of the independent academic community. Anti-nuclear advocates are willing to equate such disparate situations as Three Mile Island and Chernobyl in an effort to enflame public sentiment against all aspects of nuclear power and as a result public perception of risk for nuclear matters is much higher than actual risk.⁴³

CONCLUSION

The Nation's resources, time, and money invested in developing the NWPA and the Yucca Mountain Repository license deserve more than the passing consideration given them by the BRC. Together, they remain the Nation's best hope for finally solving the problem of permanent disposal of nuclear waste in this century.

For all of the above-sated reasons, Nye County, Nevada, the host County for the Yucca Mountain Nuclear Waste Repository, recommends (1) that the Yucca Mountain licensing process should be allowed to continue as the only possibility for prompt development of a permanent nuclear waste repository in accordance with the BRC's goals; (2) that establishment of a new nuclear waste organization, generally applicable safety rules, uniform siting criteria, and other BRC policies be implemented prospectively only, and not be allowed to impact the NWPA requirements for the Yucca Mountain licensing proceeding; and (3) that interim nuclear waste storage not be sited or licensed until a permanent repository is licensed for construction.

Sincerely,



Robert M. Andersen
Counsel for Nye County

⁴³ Stephen Breyer, *BREAKING THE VICIOUS CIRCLE, Toward Effective Risk Regulation* (1992 Harvard University Press) at p. 21

Mr. SHIMKUS. And will you meet with Nye County to initiate a cooperative negotiated process?

Mr. CHU. Well, first, we are in the process now of reviewing the recommendations of the Blue Ribbon Commission. We would also like to work with Members of Congress in order to see because the Blue Ribbon Commission has said very clearly that they would like to see Congress look at a revision of the Nuclear Waste Act. And so—

Mr. SHIMKUS. Well, yes—

Mr. CHU [continuing]. These are very important steps—

Mr. SHIMKUS [continuing]. We have got the Blue Ribbon Commission—we had great testimony here with the commissioners. On page 48 it says, “the importance of the local communities,” and so we have Nye County saying we are ready to go into direct negotiation with you and looking at what you can able afford to bring to the arena.

On page 48 it says, “this unwavering local support helped to sustain the project during periods when Federal and State agencies had to work through disagreements over the issue.” So the Blue Ribbon Commission really highlights the importance of local communities in saying we will accept this nuclear waste. Let us get involved in negotiations. That is what your commission suggested. We have a local county that is taking you up on the offer of the Blue Ribbon Commission. I hope that you would then talk to the good folks of Nye County and get into negotiations as the Blue Ribbon Commission had suggested, which is the commission that you asked for.

Mr. CHU. Well, we have to set up a process that can do this. Certainly, the Blue Ribbon Commission says that you need local support. I would also add I think the Blue Ribbon Commission said this as well—you also need State support. And—

Mr. SHIMKUS. Well, let me quote from this. On page 48 it says, “this unwavering local support helped to sustain the project during periods when Federal and State agencies had to work through disagreements over the issue.” So the Blue Ribbon Commission said, you know, Norway, Finland, Spain, local communities very helpful in working through the disagreements from the States or the national government. I think that we have a local community that is fulfilling the intent as identified by the Blue Ribbon Commission. I would think that the Department of Energy would welcome that because the Blue Ribbon Commission said two things, right? It said that we are not disregarding Yucca. We have so much nuclear waste we need a second long-term geological repository.

Mr. CHU. Right.

Mr. SHIMKUS. That is what it said.

Mr. CHU. They did say that and we welcome a local community’s support.

Mr. SHIMKUS. So you will welcome Nye County when they come visit with you?

Mr. CHU. You are looking for a very big answer. Again, I think we need to set up a procedure so that we can deal with this thing as rapidly as possible.

Mr. SHIMKUS. I would hope you would consider Nye County.

Mr. WHITFIELD. The gentleman from Texas, Mr. Green, is recognized for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman. And I regret our ranking member from California on our side is not here because I know this is not Ways and Means Committee but, you know, I know California benefits from the high-tech industry and motion picture industry and they have been pretty financially successful. And I don't know if we are going to take away their incentives for producing their products in our country like I hear all the time on oil and gas. I would like to have those incentives continue.

But let me ask you one specific question. For many years, the Texas Center of Superconductivity at the University of Houston has been doing great work in a field that shows promise. From 1993 to 2011, the Federal Government financially supported the need for continuing science and development demonstrations in this field to keep the technology leadership in the U.S. and laid the foundation for the growth of well paying research and manufacturing jobs. Unfortunately, the line item for superconductivity technology funding was eliminated 2 years ago. What is the U.S. Government and the DOE doing to maintain that U.S. competitive advantage on superconductor technology that will have a major impact on energy generation, transmission, storage in light of the substantial overseas government investment to push technology in the commercial products? What is DOE doing with—

Mr. CHU. In the Department of Energy we support research in superconducting technology primarily in the Office of Science. We continue to do this. Many of the discoveries made in superconductivity and the understanding is developed in the United States. We think this has great promise and we will continue to support that research.

Mr. GREEN. OK. I will probably get a letter to you and ask you about that because having watched what happened with another Dr. Chu at University of Houston for many years and the success they have done both with State funding and with Federal funding. I appreciate it.

The President's fiscal year 2013 budget includes an inner-agency study that the DOE, EPA, and U.S. Geological Service are partnering on to examine environmental and health effects of hydraulic fracturing. Can you explain the purpose behind this study and how is different than what the EPA has been already doing? And then what is your Energy Advisory Board has already addressed, that combination of the inner agencies compared to what EPA has done and what Department of Energy has already done with their Energy Advisory Board?

Mr. CHU. Well, the Subcommittee of the Secretary of Energy Advisory Board felt that the Department of Energy, in collaboration with other agencies—notably USGS—would be in a good position to help industry develop the natural gas and oil resources safely. We want to see those resources developed but we want to see them developed in an environmentally safe way. So we are requesting funding to help the companies extract those resources in an environmentally responsible way.

Mr. GREEN. And believe me, in Texas we want to extract it safely. I know there are some things that we need to work on. The

State law actually changed in Texas requiring posting of the ingredients. You know, I know companies already published them or had them available through OSHA requirements. But will there be peer review and stakeholder input incorporated into this study?

Mr. CHU. Absolutely. We feel that this is using science to help develop new methodologies again so we can continue to extract natural gas, but as we both agree in an environmentally safe way. And so it is these very rapidly improving technologies that I think you and I both agree can be done.

Mr. GREEN. Carbon capture and sequestration is constantly discussed in a context that can possibly be used as carbon control technology under the EPA rules for utilities and refiners. The problem is it is still too expensive to commercially be used. Can you describe current DOE carbon capture and sequestration activities?

Mr. CHU. Yes, I can. But unfortunately there is 47 seconds. I could do it in probably 4 hours. But let me just briefly say that we are very committed and focused to reducing those costs, reducing them greatly so that one can continue using our fossil fuel resources.

Mr. GREEN. OK. Mr. Chairman, I know I am out of time but CCS still is not commercially viable but hopefully we can get to that point sometime before you get mandates there that at least the technology needs to be there.

Thank you, Mr. Chairman.

Mr. WHITFIELD. Thank you very much.

At this time I recognize the gentleman from California, Mr. Bilbray, for 5 minutes.

Mr. BILBRAY. Thank you, Mr. Chairman.

Secretary, I am still very happy that you are where you are not just because you are a Californian but you have been brave enough to stand up on energy issues that were politically incorrect, pointing out the great shortfalls with ethanol and the great opportunity of nuclear power. And I am glad to hear you talk about the small reactors. Hopefully, the initiative with the United States Navy and Navy bases will look at that opportunity. In San Diego, we have 20 nuclear reactors within a mile of downtown San Diego being run by 20-something-year-old kids. But we can't power our streetlights with it yet.

But let me just say this. I think there are a lot of partisan cheap shots always go back and forth across here, so let me try to bridge the gap and find a place where Democrats, Republicans, independents and Americans across the board can agree, and most importantly you. You agree that the crisis with finding a replacement for gasoline is a supply, how clean it is, and the infrastructure to be able to distribute it, major problem. I am a big ethanol guy, opposed to it, and the environmental issues and the supply issues and the infrastructure issues I have a real problem with. But algae, which I have supported strongly, is very clean but we don't have supply and won't have supply in a long time, and it is compatible with the infrastructure. But we have natural gas, which we have massive sources of, it is super clean—it is even cleaner than propane, which is permissible under Federal law to be used in interior spaces—and the thing we miss out is that 85 percent of the urban homes in America are plumbed with natural gas. The infra-

structure is there. The trouble is you have a 3-foot barrier between the water heater and the car parked in the garage and we have not bridged that gap.

And all of the money we have spent and we are proposing to spend, are you looking at what we are doing for research and development of home dispensing to allow the American consumer not 20, 30 years from now but 10 years from now to be able to say I don't want to fill up with gasoline; I am going to plug in my car and fill up with natural gas over the night. What in your budget is committed to bridging that 3-foot gap between the automobile and energy independence in the next decade and the water heater that 85 percent of city dwellers use today?

Mr. CHU. I am very glad you asked that question. The programs we have in our budget are in energy efficiency, renewable energy, and also in ARPA-E. Specifically, what we are doing about that—and I share your excitement that our abundant natural gas in the United States, which looks to remain at low prices for at least another decade or two—has a great opportunity to help with transportation costs, to reduce the transportation costs. And so what we are specifically doing in terms of the home use is that right now the barrier, beyond that wall, it is the cost of the natural gas tank. Honda sells a Honda Civic, natural gas, but that carbon tank is very expensive. So we are—

Mr. BILBRAY. You are talking about the tank in the vehicle.

Mr. CHU. In the vehicle.

Mr. BILBRAY. I am not talking about the tank in the vehicle. I drove a natural gas with that tank in 1992. This isn't brain surgery. I am talking about the home dispensing pump that will be able within the nighttime, 6 hours, bring the pressure up from the home into the tank of the car. Is there anything in your budget that specifically is addressing an aggressive attitude towards that home dispensing pump so—

Mr. CHU. Yes.

Mr. BILBRAY [continuing]. They can get it at their house every night?

Mr. CHU. Yes, there is but I was taking too long to explain it. So the short answer is the commercially available pump has to be able to pump to 3,500 pounds per square inch, 4,000 pounds per square inch. It is very, very expensive and after 3,000 equivalent gasoline miles it has to be refurbished for another couple thousand dollars. So it is like \$6,000 for the dispenser and then after a while you have got to send it back to the factory. The tank we are trying to develop is something that can allow compression at not 3,500 pounds per square inch but maybe several hundred pounds per square inch. We know that when you decrease the pressure to that and still have the range, then things become very inexpensive and accessible. And so that is what I was trying to get at.

Mr. BILBRAY. Isn't it true that if we had home dispensing the big advantage with this is flex fuel? You do not have to have twin systems in the car. The same system that would burn natural gas has the ability to burn regular gasoline with a flip of the switch?

Mr. CHU. That is true. You just need two tanks, one for the natural gas—

Mr. BILBRAY. Right.

Mr. CHU [continuing]. And one for the——

Mr. BILBRAY. But you don't have to have separate motors?

Mr. CHU. Correct.

Mr. BILBRAY. Thank you.

Mr. WHITFIELD. The gentleman's time is expired.

The gentleman from Pennsylvania, Mr. Doyle, is recognized for 5 minutes.

Mr. DOYLE. Thank you, Mr. Chairman.

Secretary Chu, thank you and thank you for being with us today.

Mr. Secretary, the National Energy Technology lab in Pittsburgh is funded by your department's Office of Fossil Energy, and unfortunately, the President's fiscal year 2013 budget request continues the very troubling trend of decreasing the Department's fossil energy budget. A large portion of the research at the NETL is in advanced coal technologies. In fiscal year 2010 the coal portion of the fossil energy budget was \$404 million but the fiscal year 2013 request is only 240 million, representing a 41 percent reduction in funding for advanced clean coal and R&D. Specifically, the President's fiscal year 2013 request zeroes out critical research in fuel cells and fuels programs and significantly reduces funding for carbon capture, carbon storage, and advanced energy systems and cross-cutting research. Some of these cuts appear to be especially poorly timed.

Mr. Secretary, are you aware that the EPA is preparing to issue a proposed rule any day now setting emission limits for greenhouse gases from coal-fired power plants?

Mr. CHU. I am not sure of the exact timing of the EPA's schedule.

Mr. DOYLE. But it is imminent? And to the best of your knowledge, Mr. Secretary, that rule will require coal-fired power plants to either capture their carbon emissions or utilize pre-combustion technology that allows them to emit less carbon to begin with. Yes or no?

Mr. CHU. I think it is mostly—I would have to get back to you on the exact ruling that the EPA is contemplating and see.

Mr. DOYLE. Well, I guess what I am trying to say is we can't have it both ways here. I support EPA's effort to reduce greenhouse gases but if the administration is going to issue a regulation requiring carbon capture and sequestration from power plants this year, can you explain to us why the budget request for carbon capture and sequestration is the lowest this administration has ever requested?

Mr. CHU. Well, we are very supportive and I am personally very supportive of carbon capture and sequestration, as you probably know. And we think this is still a very important part of what we do in the Department of Energy. We remain committed to developing the technologies to lower the cost so we can continue using our abundant fossil fuel.

Mr. DOYLE. Well, it just seems to me that if we are going to ask our power sector to reduce their greenhouse gas emissions, which I support, but at the same time we are nearly eliminating the research funding for the technologies that do this, I just think it is not fair or there is a lack of coordination going on between EPA and the Department of Energy.

Mr. Secretary, let me ask you another question. This administration has championed regulations to reduce pollution for power plants and from idling trucks. One way to do this is using solid oxide fuel cell technology, which is being developed through the Solid State Energy Conversion Alliance in the Office of Fossil Energy. This program is developing and commercializing technology to produce highly efficient power from natural gas and eliminate idling emissions with auxiliary power units. Seeing as this technology could be used to meet regulations coming from the administration, can you explain to us why the funding for this program was eliminated in the President's fiscal year 2013 budget?

Mr. CHU. Well, solid oxide fuel cells have made tremendous progress. We are very excited about this. There are both major and smaller companies that are heavily investing in this and we think it is evolving to the point where the private sector is taking this over rather well. And so we actually applaud the development. Most of the applications, by the way, of solid oxide fuel cells will be stationary applications, auxiliary power, other things. But we do like that.

Mr. DOYLE. Well, Mr. Secretary, you probably know South Korea has made solid oxide fuel cells a major part of their clean energy plan and we have just completed—not with my vote—a free trade agreement with South Korea resulting in lower tariffs and quotas and easing trade relations. Are you concerned that eliminating support for this technology here in the United States will drive that industry overseas to South Korea?

Mr. CHU. I certainly hope not. But if I look to the United States and the manufacturers in the United States—for example, United Technologies, Rolls-Royce America, others—some very significant players in the development of this solid oxide fuel cell technology. And so we are very hopeful that the United States can manufacture these fuel cells and sell them not only in the United States but abroad as well.

Mr. DOYLE. I hope that is right. Mr. Secretary, thank you for your time. I appreciate you being here.

I yield back.

Mr. WHITFIELD. At this time, I recognize the gentleman from West Virginia, Mr. McKinley, for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman. And with due respect for time I am a little concerned.

When the Department of Energy was formed in 1977 under the Organizational Act of 1977, there were three paragraphs I found interesting with it. The first was it was set up because the increasing dependence on foreign energy supplies presents a serious threat to the national security of the United States, health, safety, and welfare of its citizens. It was also charged to provide for a mechanism to deal with short-, mid-, and long-term energy problems, OK, of the Nation. And I think we can see long-term we are going with renewable. Short-term I think we should be worried about coal. The third is to foster the continued good health of the Nation's small business firms, public utility districts, municipal utilities, private corporations, private cooperatives involved in energy production.

Mr. Secretary, I think you have gone away from those principles. I think you have allowed what we heard earlier with some of the testimony about the use of the EPA, their predictions of their greenhouse gas closures of plants that were talked about here that were said that the EPA says only this level. So based on this level compared to all the other national organizations, EPA has been emboldened to continue to drive for greenhouse gas emissions when all the others are saying if you do that, you are going to see the closures that are occurring like this all across America, that this questioning—they are challenging the reliability of our energy across America based on that information. I am concerned that whether or not you have in fact a real interest in reining in a rogue agency that is allowing this kind of activity without based on science and agreeable comprehensive knowledge of how all the other people are looking at it across America.

I go back to your remark that you made at the NETL in Pittsburgh and you said, “I want all of the above.” I applaud that. I just wish it were backed with action because I want to go back to your statement that you made back in '07 when you said, “coal is my worst nightmare.” “Coal is my worst nightmare.” And we have the comment here from Harry Reid. “Coal makes us sick; oil makes us sick. It is ruining our country. It is ruining our world.” Coal and oil? Is that the mindset of why on the short-term goal you have abandoned that and cutting the research money as Mr. Doyle just said 41 percent reduction in spending on R&D in coal? I am awed. I just can't comprehend where this administration and you and your leadership are with it, with all due respect.

With all due respect, Mr. Secretary, I think the DOE and the EPA have become the worst nightmare for the working men and women in our coal fields across America. What you are doing is challenging them, causing them to not know whether tomorrow they are going to have a job. I really do hope you go back to the requirements of the DOE and look at the short-term requirements. And those short-term requirements looked at coal and taking care of the families for the life, safety, and welfare of the American public and our national security.

Mr. CHU. Let me try to explain what I said. That was taken out of context, the quote. And what I said is that coal, as it is being used today, as it is being used today in China and India and everywhere around the world in terms of its pollutants, is a big worry of mine. And so that is why—even before I became Secretary but certainly after I became Secretary—I remain very committed to developing those technologies to bring the prices down so that we can continue to use resources—

Mr. MCKINLEY. OK. I just hope, Mr. Secretary, you will be able to get back to Mr. Doyle and others and be able to explain how we have a 41 percent reduction with National Energy Technology.

Let me just in the 36 seconds, will you be able to get back to us as to what—we hear a lot of the folks on the other side talk about how fossil fuel, particularly coal, is subsidized. Will you be able to tell us how American coal companies are being subsidized?

Mr. CHU. I will be glad to get back to you on that.

Mr. MCKINLEY. Thank you very much.
I yield back my time.

Mr. WHITFIELD. Thank you.

At this time, I recognize the gentleman from New York, Mr. Engel, for 5 minutes.

Mr. ENGEL. Thank you very much, Mr. Chairman.

Mr. Secretary, let me first say that I am one person who has followed you and I think you are doing a fine job and I think your agency is doing a fine job and I think there have been a lot of political cheap shots at you, unfortunately, and the administration from the other side of the aisle and I just don't think that is reflective of the job that you are doing. So I wanted just to say that.

I want to also spend the next minute talking to you about an issue that you and I have spoken about in the past and that is open fuel standard for cars. I believe—and I am doing a bill with Mr. Shimkus—that every car produced in America should be a flex fuel car. I believe if a car can run on ethanol, methanol, gasoline, natural gas, whatever, competition helps bring down prices and it would bring down prices. I have seen that happen in Brazil and I think it could happen here. And it would cost \$100 or less per car to manufacture a car with flex fuel features. I know the President has issued an executive order to have the Federal fleet be flex fuel cars, and I would hope we can continue to move in that direction. So I would just like you to briefly comment on that if you could.

Mr. CHU. Certainly. The ability to own a flex fuel vehicle, especially if the cost of the new car would be something—as you indicated, \$100 or less, gives the American consumer more options. It makes them more in control of what they can do just in case the world oil price does increase. As we said, we are very concerned about the price of gasoline and one of the options that we have to bring relief to the American public is to allow them to have a diverse source of energy for transportation. And a flex fuel vehicle allows that.

Natural gas, also very enthusiastic about. And so the ability to have this conversion, you can fill up with natural gas or fill it up with higher blends of ethanol is something that will help American businesses and consumers.

Mr. ENGEL. Thank you very much. I couldn't agree more.

Let me ask you about renewable energy investment. A survey of global climate policies by Deutsche Bank included that clean tech innovations are more likely to emerge and succeed in Brazil, China, India, Germany, and the U.K. than they are in the U.S. These countries have used a combination of investments and national energy standards, feed-in tariffs, efficiency standards, and a price on carbon. According to Ernst & Young, China now leads the world as both the largest source of and destination for clean energy investment. China attracted 54 billion clean energy financing in 2010, which is a 39 percent increase over '09 and such financing in the U.S. stagnated last year at 34 billion, approximately equal to 2007 levels.

Your budget proposes to invest in energy efficiency, renewable energy technologies, science, and clean energy research development and deployment and it eliminates 40 billion over 10 years in tax subsidies to Big Oil, with which I agree. Big Oil is making record profits and they don't need the tax subsidies. However, some people have argued that if you eliminate subsidies for Big Oil it

means the government is wrongly in the business of picking winners or losers. They say—I don't agree—but they say that if we remove these subsidies for Big Oil, then out of fairness, we should remove subsidies from every other specific industry or business, green technologies or whatever. How do you respond to this?

Mr. CHU. Well, I think the government over the past decade—really over the past century—has always looked at subsidies and it is a part of Congress and the President to try to decide what will be appropriate subsidies, but also how long. The subsidies have been used in the past to encourage new industries to get started. And so the oil subsidies began roughly 100 years ago and for the express intent of actually helping this industry get started. But as you pointed out, they are doing very well on their own.

Mr. ENGEL. Yes, they did make 137 billion last year.

Mr. CHU. Right.

Mr. ENGEL. I mean God bless them, but I don't think they need any help from the government anymore.

Let me ask you this. About 2/3 of the Department of Energy's budget is directed at nuclear weapons or nuclear cleanup activities, and there are some who argue that those activities would be better handled by the Department of Defense, by DOD. How do you respond to that?

Mr. CHU. Well, I respectfully don't agree with that. I think the nuclear weapons and the nuclear cleanup needs a very science-based approach to this, that we have felt since the Manhattan Project, a lot of expertise. I think that we should continue to have it within the NNSA and also within the Department of Energy, Environmental Management.

Mr. ENGEL. Again, thank you. Thank you very much, Mr. Secretary, and again thank you for the good job that you are—

Mr. WHITFIELD. Recognize the gentleman from Colorado, Mr. Gardner, for 5 minutes.

Mr. GARDNER. I thank the Chairman for his time. And thank you, Secretary Chu, for your time and testimony today.

A couple of questions. We heard our colleague from Massachusetts refer to the impact the Strategic Petroleum Reserve had on the price of oil. When that was released, it reduced the price of gas at the pump?

Mr. CHU. You are talking about the last—

Mr. GARDNER. Yes, in June of 2011 the price did drop.

Mr. CHU. Yes.

Mr. GARDNER. OK, thank you. And is the President considering releasing—you said it before—he is considering releasing the SPR right now to respond to gas prices?

Mr. CHU. As we said, that option remains on the table.

Mr. GARDNER. Is the SPR intended to be used only during times of severe supply disruptions and real emergencies?

Mr. CHU. It is a little more complicated than that but that is the primary use. There also are—

Mr. GARDNER. Do those circumstances exist now?

Mr. CHU. Let me just finish. Certainly, the primary use is for supply disruption. There are also issues for severe economic disruptions—

Mr. GARDNER. Due to a severe energy disruption, correct?

Mr. CHU. Not—well, for example, we released SPR before when there was—

Mr. GARDNER. For Hurricane Katrina?

Mr. CHU. Yes.

Mr. GARDNER. Do we have a hurricane that is taking refineries out now?

Mr. CHU. No, we don't.

Mr. GARDNER. OK, thank you. The President said yesterday that the only solution to high gas prices is decreased demand. Last year, though, together with our allies, 60 million barrels of the world's strategic reserve was released. The price of oil dropped by \$4 from \$95, and even though it returned to \$95 6 days later, supply made a difference. Don't you agree?

Mr. CHU. I think the supply did make a difference but—

Mr. GARDNER. On July 14, 2008, when President Bush lifted the moratorium, the price of oil dropped \$9, more than two times the drop from the SPR release last year and it kept going down even though people knew that the increased supplies would not come on-line for years. The anticipation of supply made a difference, didn't it?

Mr. CHU. That is true.

Mr. GARDNER. If long-term decreased demand has an effect on price, then don't the basic laws of supply and demand dictate that so will long-term increased supplies?

Mr. CHU. I absolutely agree. Long-term—

Mr. GARDNER. So if you are going to pursue short-term policies such as using the SPR for market manipulation, shouldn't you at a minimum couple that with long-term supply solutions such as increased production?

Mr. CHU. Well, as you yourself are pointing out, the primary uses of the SPR are to deal with supply interruptions and other economic emergencies.

Mr. GARDNER. So we would need a long-term supply solution because you have said that supply matters?

Mr. CHU. We need a long-term supply solution—

Mr. GARDNER. And we need to increase supply at that point—

Mr. CHU. The world—

Mr. GARDNER [continuing]. Is that correct?

Mr. CHU [continuing]. Needs a long-term demand solution as well to—

Mr. GARDNER. If you—

Mr. CHU [continuing]. Moderate our demand.

Mr. GARDNER [continuing]. Increase supply, it will decrease cost. That is what you have admitted to; that is what the SPR did. Is that correct?

Mr. CHU. I agree that both supply and demand matter.

Mr. GARDNER. Thank you. And last year, when you drew down from the SPR, oil prices were \$95. You haven't replaced those 30 million barrels, have you?

Mr. CHU. No, we didn't.

Mr. GARDNER. How do you plan to replace those barrels now that the price of oil is even higher?

Mr. CHU. There is a plan put forward in our fiscal year 2013 budget over a period of years to begin to buy back that oil.

Mr. GARDNER. So you are buying back that oil but not increasing production. What about the Royalty-In-Kind program Secretary Salazar's office was in charge of?

Mr. CHU. I am not intimately aware of that.

Mr. GARDNER. You are not familiar with it? Will you meet with Secretary Salazar to reinstate the Royalty-In-Kind program so that these barrels of oil can be replaced before you draw down again?

Mr. CHU. I will certainly get informed of the situation.

Mr. GARDNER. Would you please report to us about your conversation—

Mr. CHU. Sure.

Mr. GARDNER [continuing]. With the Department of Interior? Based on what the President said yesterday and this morning at a press conference he called it phony to try to get down to \$2 in gasoline. Is it phony to want to reduce the price of gasoline?

Mr. CHU. I think the President is very clear as I have been very clear. We do want the price of gasoline to go down.

Mr. GARDNER. And we need to do that by increasing supply, as you have said, by releasing the SPR or perhaps increasing domestic production?

Mr. CHU. Well, as the President is pointing out, as many people in this session have pointed out, the United States' supply by itself is not going to—it will affect the world's demand—

Mr. GARDNER. Like the release of SPR?

Mr. CHU. But it in itself doesn't control it. We certainly—

Mr. GARDNER. But you said that increased supply decreases price as exemplified by the SPR?

Mr. CHU. But as you well know, the production of U.S. petroleum products, petroleum has increased over the last 8 years and yet the price has—

Mr. GARDNER. So the SPR didn't then cause gas prices to go down like you just said it did. We know it did and you have said that supply causes prices to go down.

Mr. CHU. SPR release caused a—there was a short-term—if you look at the historical record—

Mr. GARDNER. Because of a supply infusion into the market?

Mr. CHU. No, I think it—

Mr. GARDNER. So it wasn't supply?

Mr. CHU. If you would let me finish. So what happened—

Mr. WHITFIELD. Sorry, the gentleman's time is expired.

At this time I recognize the gentleman from Washington State, Mr. Inslee, for 5 minutes.

Mr. INSLEE. Mr. Secretary, if you would like to finish your answer. You weren't given an opportunity go ahead, if you would like to do that.

Mr. CHU. Yes. Very quickly, during that release and an international, coordinated release and the IEA, the SPR was meant to deal with the temporary disruption in supply with Libya. And now Libya is coming back in petroleum reserves and the SPR release served its intended purpose.

Mr. INSLEE. And Mr. Secretary, I appreciate the work you are doing on advanced forms of energy. Bill Gates was at our Advanced Energy Research Consortium last week talking about the need for

greater national investment. And I certainly echo that, and I appreciate you to the extent possible advancing that cause.

I want to ask you specifically about biofuels. There is a potential bioreactor. We are looking at various bioreactors either commercial or pre-commercial. We are ready to go out into the Northwest. Could you comment? And obviously, I would like you to come out and take a look at our State opportunities in that regard. What should be in the near term for bioreactors?

Mr. CHU. Sure. We think the idea of making transportation liquid fuel using biological sources has great promise. And the Department of Energy over the years has been supporting this. And we think that these technologies do have—you know, from algae, from grasses, from using residual agricultural waste, all these things have the potential again of having alternative supply of transportation fuel that would go further to our lesser dependency on oil and especially less dependency on foreign oil, because these things can be made in the United States.

Mr. INSLEE. So we like the idea of bio-refineries, a product designed by Targeted Growth, a company in Seattle was the first bio-fueler to partially fuel a jet, Boeing 747 flew across the Atlantic Ocean last summer, first ever in human history.

So Washington State University and others are leading a consortium of Boeing and Alaska Airlines to work for a bio-refinery out in the Northwest. What could you advise us to try to make sure the Department of Energy looks at the State of Washington as far as an opportunity there?

Mr. CHU. We will certainly look at that particular project, but we will look at all the projects. And I have a real avid interest in this because I think it does have great potential for decreasing our dependency on oil. And we will need liquid transportation fuel in the coming decades, I would say in this century.

Mr. INSLEE. I think you will find out in Washington State probably about as an advanced consortium from the genetic designer to the grower to the aeronautics company ready to accept delivery. You are going to find a very welcome network that is pre-prepared for this adventure and I hope you will take a good look at Washington State.

One more question about Washington State. We have some very good success out at the Hanford site. We are freeing some land now to be ready for development, and your agency is moving forward to allow about 1,600 acres to be allowed for commercial development. Very excited about that because we need to transition from the cleanup to new industries in the Tri-Cities. We are told it could be a year and a half before we actually get that done. We hope that you can do anything you can to expedite that transfer because we have got some companies looking at good things in the old Hanford site. I hope you could take a look at that.

Mr. CHU. I would.

Mr. INSLEE. Last, I just want to thank you. I haven't agreed with everything you are doing there. We have a disagreement on our Yucca issue. I won't bring that up today. But I just want to thank you. I have got a 1-month-old granddaughter and I want to thank you for your efforts giving her a shot to enjoy a world when she is my age of 61 that looks something like the one we have got here

today. My friends across the aisle talked about something ruining the world and you are doing some work to make sure it is not ruined by the time she is 60.

The work you are doing on solar energy is spectacular. You look at the ALTEC Company, the world's most durable solar cell made in Marysville, Washington, the silicon energy company; REC; Nanosys doing advanced nanotechnology for lithium ion battery storage; EnerG2 Company doing ultracapacitors. These are spectacular things you are doing. And because of your success, which I believe we are going to have, my granddaughter is going to have a shot of having a world that looks like the one we have got. And I know you are going to be catching a lot of arrows in your back for those who are naysayers and believe that a negative voice is the American one. I believe a positive voice is the American one and we are going to grow this economy and we are going to give my granddaughter a shot and everybody else's at a world that looks like ours.

So I just want to thank you and keep it up.

Mr. CHU. Thank you.

Mr. WHITFIELD. The gentleman's time is expired.

At this time, I recognize the gentleman from Kansas, Mr. Pompeo, for 5 minutes.

Mr. POMPEO. Thank you, Mr. Chairman.

Thank you, Secretary Chu, for being here today. I want the world to look great for my son as well, and to do that, I think we have to do things that work. And so I am going to ask you about some projects, places that your budget is intending to spend money and talk about whether they are working or not.

In the President's budget—I assume your handiwork—it says that the goal is to have 1 million electric vehicles on the road by 2015. Is that correct?

Mr. CHU. That is correct.

Mr. POMPEO. How are we doing?

Mr. CHU. Pardon?

Mr. POMPEO. How are we doing? Are we on track to make that goal?

Mr. CHU. Well, we are going to wait until 2015 but in terms of what is happening both technically I think things are developing and I remain hopeful.

Mr. POMPEO. Are we going to make it? How many do we have today? How many electric vehicles on the road today?

Mr. CHU. I don't know the exact number. I can get back to you.

Mr. POMPEO. Less than a million by multiple orders of magnitude, is that right?

Mr. CHU. It is certainly significantly less than a million.

Mr. POMPEO. Would the administration support higher gas prices to achieve this goal of 1 million electric vehicles on the road by 2015?

Mr. CHU. The administration wants lower gas prices.

Mr. POMPEO. Your actions belie those words in my judgment, but I appreciate that you state that as your objective. The President said he would buy Chevy Volt. He said he would buy one 5 years from now when he is not the President anymore. I am not sure about the timeline but in any event, last week, Chevy announced

that the Volt would be suspended from production because of demand, temporary layoff workers. How many taxpayer dollars have gone in support of the Chevy Volt?

Mr. CHU. You know, I don't know. I know that the Chevy Volt is a great car. I think that there is, you know, a huge investment of GM and the leadership of GM to invest in this, and right now, I am still very hopeful that the Chevy Volt will be adopted.

Mr. POMPEO. Well, I appreciate it if you would get back to us, let this committee know how much money has been extended so far on the Chevy Volt. Do you drive one?

Mr. CHU. No. I don't own a car at the moment.

Mr. POMPEO. Fair enough. Fisker Automotive received over \$500 million in DOE loans in 2010. You cut off the funding last May because it had not met its sales target. At least that was one of the stated reasons for the cutoff of the loans if I understand it correctly. Do you think we are looking at another Solyndra?

Mr. CHU. Well, it is much more complicated than what you said. We have milestones within our Loan Program, and as we disperse funds of any of our people that we give loans to, we work with the companies and do that. And so, you know, we are hoping Fisker can work through the things, temporary blips, and continue.

Mr. POMPEO. I hope so, too. How much exposure does the United States taxpayer have to Fisker today?

Mr. CHU. I can get back to you on the exact number.

Mr. POMPEO. Great. I appreciate that.

Just so you know, it was sometime before I was here, but we heard these same reassurances about Solyndra up and through times the DOE was still making loans and advancing money against those credits. We heard that you were monitoring, watching, taking good care that that money be repaid to the Treasury and that is not going to happen. So I hope that you are right about Fisker and that the taxpayer doesn't end up another \$500 million short.

Thank you, Mr. Secretary. I appreciate your time today.

Mr. CHU. Thank you.

Mr. WHITFIELD. Mr. Secretary, we appreciate your time. Unfortunately, we have four votes on the floor and we do have about four members that wanted to come back to finish asking questions. And I was wondering, would you be able to be back here at 15 to 1:00 for a little while or not?

Mr. CHU. I have just heard from my staff that we have agreed to do it. I was worried of another appointment.

Mr. WHITFIELD. No, I understand. And we appreciate it. And as you know, we have some of the finest restaurants here in the Rayburn Building, so if you want to get something to eat. But we will be back just as quickly as we possibly can. And we do thank you for your time. And there may or may not be four coming back, but thank you very much.

Mr. CHU. Thank you, Mr. Chairman.

[Recess.]

Mr. WHITFIELD. I am not even going to wait for our friends on the other side of the aisle. I am going to recognize Mr. Griffith of Virginia for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman.

Thank you for coming back, Secretary Chu. Those of us at the end of the list appreciate it very much.

As you know, the United States is blessed with huge coal reserves and I note with some interest that as technology has become available that coal to gas, coal liquification I think is becoming more affordable in the world marketplace. And in fact South Africa gets just about a third of its gasoline from coal to oil processes. And in fact the President, when he was a Senator, on two different occasions introduced legislation to do just that. So I guess my question is what do you see the Department of Energy doing to help get coal to liquids to play a vital and additional role in the supply of gasoline in the United States?

Mr. CHU. Well, first, we agree that the United States is blessed with great fossil fuel resources, and we are looking at the potential for both coal-to-liquid and gas-to-liquid. And we want to support research that would enable—the issue is high capital cost. The plants are very, very complex, and when I talk to the oil companies, you know, Shell, ExxonMobil, they uniformly say that the very high capital cost is a problem. Now, having said that, we also of course want to do this in a way that not only—even without capturing the carbon, it is less than marginal and we would actually like to capture the carbon and helping enhance our recovery and other utilization, but ultimately, we also need to capture the carbon.

Mr. GRIFFITH. Absolutely. And in that regard, these bills that the President put in, particularly one in 2006 was actually a loan guarantee program and I am just wondering if any of the loan guarantees that you all did as part of the stimulus helped to defray any of the capital costs for any companies that might be looking to take coal and turn it into gas?

Mr. CHU. I think the one I know of—there are a few still going forward. There are gasification and the use of the carbon dioxide enhanced oil recovery. I think Southern has a project that is going forward on that.

Mr. GRIFFITH. All right. And of course that brings me to Solyndra. And, you know, you all have indicated that what was happening in the Chinese market, both your administration and you have indicated what was happening in the Chinese market was not anticipated in 2009 when the loan guarantee was done. One of the questions I have always had, Secretary Chu, is that was known based on the way I heard your testimony over the course of the last year. That was actually known, though, by late 2010 and certainly by February of 2011, and so that calls into question if you knew what was happening in the Chinese market and that the price was so low that Solyndra couldn't manufacture its product for the price that the Chinese were selling their product for, why the subordination?

Mr. CHU. You are absolutely right. Certainly by 2011, late 2010 we did know that Solyndra was in deep trouble, that there was—by then the price was—

Mr. GRIFFITH. But you also knew that the Chinese market had basically made them—you may not agree but it had made their products cheaper than Solyndra could produce their product. The Chinese could sell their product for less than Solyndra could produce their product for, isn't that correct?

Mr. CHU. It is correct that we knew that Solyndra was in deep, deep trouble and there was a chance of bankruptcy. And when it came time to decide how to do this, it was a judgment call on whether the fact—the loan was for a—

Mr. GRIFFITH. And I know that you have said that before and I respect you, but that being said, isn't it a fact that in late 2010 and certainly by February of 2011 when the subordination was signed off on, when you look at the price of what the Chinese were able to sell their product at and the price of what Solyndra was able to produce their product at, the Chinese could sell cheaper than Solyndra could produce. Isn't that a fact?

Mr. CHU. That is correct.

Mr. GRIFFITH. OK. Thank you. I appreciate that very much.

And I would also ask you in that same vein, different aisle maybe of the church, but Chairman Upton and Stearns recently sent you a letter on the loan program for Prologis? I hope I am saying that right. And Solyndra was to be the supplier for the first phase of that project but then Solyndra went bankrupt. Knowing what they knew, why did DOE feel comfortable including Solyndra as the first-phase supplier for Prologis at a time when you knew they were about to fold or knew that they were in serious danger of folding even with the first subordination? But I know you were hoping that there would be the second August subordination from outside money coming in, but why did you go forward with Prologis and say, look, this ought to be your supplier?

Mr. CHU. Well, first, we were uncomfortable with Solyndra being the supplier, quite frankly. And Prologis had a very small—the initial one was Solyndra but I was saying I believed the Prologis business model was a very good one. I was very supportive of that loan, but I was nervous if Solyndra went there that Prologis should line up a plan B.

Mr. GRIFFITH. All right. I thank you.

And I yield back. Thank you, Mr. Chairman. Thank you, Secretary Chu.

Mr. WHITFIELD. The gentleman's time has expired.

At this time, I recognize Mr. Olson of Texas for 5 minutes.

Mr. OLSON. I thank the chair.

And Dr. Chu, I would like to thank you for your testimony today and especially for waiting for us to come back after votes. It is appreciated.

I would like to ask you a few questions related to the electric grid because, as you are surely aware, the potential for conflict between grid reliability needs and environmental rules is greater now than ever. And in the interest of time, I would appreciate it if you could simply answer yes or no to the following questions.

Question number one, are you aware that under Section 202 of the Federal Power Act, DOE can issue emergency orders to require a generator to run. Yes or no?

Mr. CHU. Yes, I am aware of that.

Mr. OLSON. That is what I thought, sir. Thank you.

Question number two, are you aware that a generator's compliance with an emergency order could result in a violation of environmental laws and subject generators to citizen lawsuits? Yes or no?

Mr. CHU. I am aware of that.

Mr. OLSON. That is what I thought as well. Thank you.

Question number three, do you believe it is fair to make generators choose between complying with a DOE emergency order or complying with environmental laws and regulations? Is that fair?

Mr. CHU. In most instances, we believe that it doesn't have to be an either/or. And so as I said before, the Department of Energy's job is to help the private sector ensure that we have a reliable source of electricity for our businesses and for our citizens.

Mr. OLSON. I will count that as a leaning not fair.

But question number four—not to put words in your mouth—are you aware that this situation has arisen twice in recent years where a generator was forced to pay environmental fines and settle a citizen lawsuit because they complied with an emergency order from your department. Are you aware of that? Yes or no?

Mr. CHU. I am not sure, candidly, but it may have occurred.

Mr. OLSON. It has occurred with a company called Mirant—which is now GenOn—and two issues in particular with them, one out of San Francisco, California. I could get you some details but I am sure staff can do that as well.

And my final question for you is would you be supportive of efforts to remedy this potential conflict between the Federal laws?

Mr. CHU. I am very supportive that we don't want to order that a generator continue to be online to produce emergency backup power and face Federal fines from another branch. And we are very eager to work through those issues.

Mr. OLSON. That is fantastic because I look forward to your support when I introduce legislation to address this issue in upcoming weeks.

Thank you again for your patience for coming back. I yield back the balance of my time.

Mr. WHITFIELD. Thank you, Mr. Olson.

Mr. Scalise, you are recognized for 5 minutes.

Mr. SCALISE. Thank you, Mr. Chairman. I appreciate you having the hearing.

Secretary Chu, thank you for coming with us and for staying through the vote series. I appreciate that.

I want to get into, you know, I guess the different definition of an all-of-the-above energy strategy because I think while we have been talking about and actually passing legislation out of the House to implement an all-of-the-above energy strategy so that we can not only create millions of American jobs but also lower prices of gas at the pump and eliminate our dependence on Middle Eastern oil, the President has recently started talking about an all-of-the-above energy strategy. But if you look at the actual things that he has done, his policies have actually hurt energy production in this country. And I want to start by asking you, you know, the President is out there boasting that, you know, energy production, oil production has never been higher as if he supports that, yet when you actually look at the facts from what we have seen, numbers we have seen show that actual production on Federal lands, which the President has control over through his Department of Interior, is down 11 percent. And in fact in the Gulf of Mexico it is down 17 percent. Have you seen any numbers similar to that to in-

dicating just what is happening in areas where the Federal Government does have a jurisdiction?

Mr. CHU. I have seen numbers that I glean from a recent Senate speech that were gleaned from what—

Mr. SCALISE. Well, the numbers that you have seen validating what I have seen, that there is an actual decline in production on Federal lands.

Mr. CHU. If you start the clock when President Obama became President, the numbers I have seen show an increase in—

Mr. SCALISE. We have seen just from 2010 to 2011 an 11 percent reduction in oil production on Federal lands. In the Gulf of Mexico exclusively we have seen a 17 percent reduction in oil production. Where the increase has come is on private lands, you know, North Dakota and the shale plays, which, by the way, the President is trying to shut down through the EPA. So it is a little bit disingenuous for the President to go out there and say he is for all of the above and oil production has never been higher when on Federal lands where he has got an influence, he has actually used his influence to reduce production. And on private lands where he doesn't directly have an influence, he is trying through the EPA to shut down the fracking process, which would mean there would be a reduction there, too, making us more dependent.

And so, you know, I will go back to the comments that you have made in the past and the President have made in support of higher gas prices. And, you know, back in 2008, right after the President was elected you said—and let me make sure—“somehow we have to figure out how to boost the price of gasoline to the levels in Europe.” Did you say that?

Mr. CHU. I am not sure—as I said before—

Mr. SCALISE. You said it or you didn't. It has been attributed—I mean it is not the first time you have heard this because many people have asked you—

Mr. CHU. Right.

Mr. SCALISE [continuing]. About it and I have heard you—

Mr. CHU. No.

Mr. SCALISE [continuing]. Confirm that you said it.

Mr. CHU. I said something very similar to that. I am not sure when the date—

Mr. SCALISE. OK. So the prices in Europe are what right now? I have seen over \$8 a gallon.

Mr. CHU. I am not sure when the date was but everything I have done when I became Secretary of Energy and was named Secretary of Energy was to help control, bring down the prices of gasoline.

Mr. SCALISE. That hasn't happened but if you look at President Obama's actual quote, President Obama said he would prefer a gradual adjustment to near-\$4-a-gallon gasoline. President Obama said that. And unfortunately, the President has put policies in place that have gotten us now to \$4 a gallon almost in gasoline prices. We have seen it. It was \$1.83 when he started as President. It is over \$3.70 now. So the President has gotten his wish and people are furious about it. It is killing the economy; it is killing jobs. And now that people are furious, the President is trying to blame somebody else.

But let's look at the record. You know, if you look at what is happening in the Gulf of Mexico alone, we have lost about a dozen deepwater rigs, billion-dollar-plus assets that have left the Gulf of Mexico because they can't get permits because of the President's own policies. Now, they haven't left to go to other places in America; they have left the country. They have gone to places like Egypt. You know, imagine it is better to do business in Egypt than in America because of the President's policies. We saw what the President did on the Keystone XL Pipeline, saying no to that. You know, the President has implemented a policy that has actually reduced American energy production and supply.

Now, of course, the President has been to Saudi Arabia. He has bowed down to their prince and, you know, he has begged them for more oil. I understand you have been to Saudi Arabia as well and had similar meetings. Is that accurate? Have you been to Saudi Arabia?

Mr. CHU. I have been to Saudi Arabia.

Mr. SCALISE. Asking them to produce more oil? What did you—

Mr. CHU. Well, certainly Saudi Arabia is one of the few countries—

Mr. SCALISE. But have you asked them to produce more oil?

Mr. CHU. Well, it is—

Mr. SCALISE. Yes or no. I am almost out of time.

Mr. CHU. Allow me to continue.

Mr. SCALISE. I don't have the time. It is a yes-or-no question. Did you ask them to increase production?

Mr. CHU. We would like Saudi Arabia—

Mr. SCALISE. Mr. Secretary—and I am almost out of time; I apologize. I am sure you will have an opportunity to answer later but, you know, rather than going to Saudi Arabia, I have mapped out, it is only about a 5-minute walk from your office to the White House. I would suggest instead of going to Saudi Arabia and asking them to increase production, go to 1600 Pennsylvania Avenue and ask the President to reverse his policies that have reduced production in America and made gas prices higher with the permitorium in the Gulf where there is still no consistent policy to get permits and it is killing production. We have lost a dozen rigs. They have left America. We have lost thousands of jobs because of that. Keystone Pipeline, we lost a million barrels from Canada that we now have to get from Middle Eastern countries who don't like us; this EPA attack on fracking, which is killing innovation. We talked to a company recently, an American energy company who left \$3 billion on the table—

Mr. RUSH. Mr. Chairman, I am going to insist on regular order.

Mr. SCALISE. So I would just ask that you go and pursue the administration policies that are killing energy production and causing higher gas prices instead of going to Saudi Arabia.

Yield back.

Mr. WHITFIELD. Gentleman's time is expired.

Mr. SCALISE. Yield back.

Mr. WHITFIELD. Now, Mr. Secretary, if you want to try to respond, feel free to do so.

Mr. CHU. Very, very quickly. We are talking about immediate spare production, and Saudi Arabia is one of the few countries that

has immediate spare production. To develop an oil field in the Gulf takes years, at least typically 5 years to actually explore, find, develop this. And so for immediate spare production we think that would have a way of moderating price spikes in the world oil market.

Mr. WHITFIELD. Well, that concludes today's hearing. And once again, I want to thank you and your staff for your patience. And I do want to ask unanimous consent to enter into the record a recent survey made in Nevada regarding the public's views on Yucca Mountain. Without objection, that will be entered into the record.
[The information follows:]



NEVADA Statewide Survey



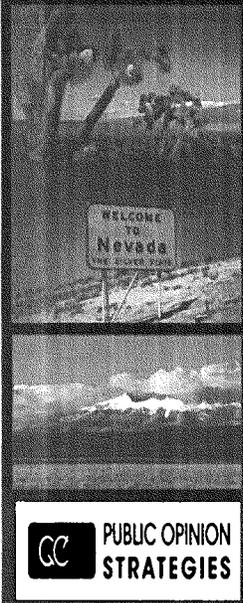
Key findings from a statewide survey of
500 likely voters in Nevada, conducted
February 21-23, 2012.

Glen Bolger

glen@pos.org

Project #12151

CC PUBLIC OPINION STRATEGIES



**Yucca
Mountain**

 PUBLIC OPINION
STRATEGIES

A large majority of Nevada voters say Yucca Mountain should be opened.

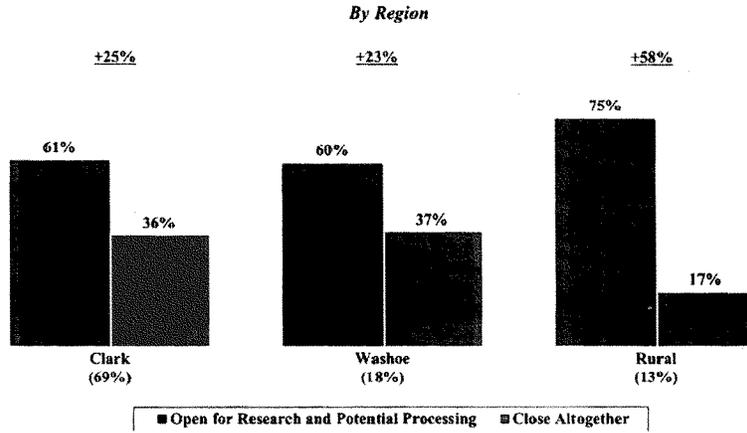
"As originally planned, Yucca Mountain was designed to operate as a nuclear waste storage facility. However, that proposal drew strong opposition from Nevada and the facility is no longer being actively developed to store the waste. Rather than allow the facility to close completely, some people are promoting its use as part of a Nevada Energy Park that would research the best way to safely re-process nuclear waste into usable energy. Thinking about this idea, would you prefer to..."

62% Open Yucca Mountain for the study and potential reprocessing of nuclear waste into usable energy because of the jobs and money such a project would bring into the state...

...or...

34% Close Yucca Mountain altogether to help protect Nevada's environment?

A majority of voters across all regions of the state say Yucca Mountain should be opened for research and potential processing.



Mr. WHITFIELD. And then we will keep the record open for 10 days for any additional materials that may be submitted.

And once again, Mr. Secretary, thank you and we look forward to working with you as we move forward.

Mr. CHU. All right. Thank you, Mr. Chairman.

Mr. WHITFIELD. This hearing is adjourned.

[Whereupon, at 1:08 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]



Department of Energy
Washington, DC 20585

September 11, 2012

The Honorable Ed Whitfield
Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
U. S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On March 8, 2012, Secretary Steven Chu testified regarding "The FY 2013 DOE Budget".

Enclosed are the answers to 40 questions that Representatives Shimkus, Barton, Dingell, Walden, Terry, Capps, Burgess, Rodgers, Bilbray, Murphy, and you submitted to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Lane".

Jeff Lane
Assistant Secretary for Congressional
and Intergovernmental Affairs

Enclosures

cc: The Honorable Bobby L. Rush, Ranking Member



QUESTION FROM REPRESENTATIVE WHITFIELD

Q1a. What is DOE's role, if any, in opening up more onshore or offshore production?

If DOE has a role, is the Administration considering opening up more onshore or offshore production in the U.S. to lower gas prices?

A1a. DOE has no statutory or regulatory role in opening up more onshore or offshore oil and gas production. DOE works with other Federal agencies, e.g., the Department of the Interior, in support of their management and oversight responsibilities for development of offshore and onshore petroleum resources.

Q1b. If yes, please describe what areas and when would decisions be made?

A1b. DOE has no statutory or regulatory role in opening up more onshore or offshore oil and gas production. Please refer to A1a.

QUESTION FROM REPRESENTATIVE WHITFIELD

- Q2. In 2009, you testified before this Committee in support of cap-and-trade legislation and specifically in support of a “low carbon fuel standard.” Do you still support a low carbon fuel standard similar to that proposed in the cap-and-trade legislation advanced last Congress?
- A2. A variety of policies have been advanced by this Administration to reduce U.S. petroleum dependency and the greenhouse gas intensity of the transportation sector. On the demand side, these include the first-ever fuel economy standards for heavy-duty vehicles, spanning model years 2014-2018, which were issued in September 2011, and new standards for light-duty vehicles for model years 2012-2016, which were issued in May 2010. On the supply side, continued implementation of the national renewable fuels standard (RFS) produced about 14 billion gallons of renewable fuels last year, or about 8 percent of total U.S. highway vehicle fuel. These actions, in turn, have supported a growing domestic renewable fuels industry. A number of other policy options, including a low carbon fuel standard, could be considered to reduce petroleum dependency and the overall carbon intensity of this sector, and the Administration would be pleased to discuss such issues with members of this Committee.

QUESTION FROM REPRESENTATIVE WHITFIELD

Q3a. The Environmental Protection Agency has been moving forward with new regulations under the Clean Air Act and other environmental statutes affecting power plants.

Have you been consulted by Administrator Jackson about any of those rules?

A3a. EPA and DOE consult on EPA regulations affecting power plants. DOE also participates in the interagency review of significant EPA regulations that affect power plants. These reviews are managed by the Office of Management and Budget (OMB).

Q3b. If so, when and which rules were you consulted about? In your response, please state for each rule when you were consulted.

A3b. The Final Cross-State Air Pollution Rule (CSAPR): The interagency review for CSAPR, also known as the Transport Rule, was held during the months of May and June 2011.

The Final Mercury and Air Toxics Standards (MATS) for Power Plants: The interagency review for MATS, was held from November 2011 through January 2012.

The Proposed New Source Performance Standards for Greenhouse Gas Emissions (GHG NSPS) for Electric Generating Units: The interagency review of GHG NSPS was held during November 2011 and again in March 2012.

The Reconsideration of the Final National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters: This rule is relevant to the power industry, since certain environmental controls

required under this rule and the compliance times are similar to those required by the regulations affecting power plants. The interagency review of this NESHAP rule was held during October through December 2011.

Section 316(b) of the Clean Water Act: The review for this section of the CWA, which details design and construction standards for cooling water intake structures, occurred in February - March 2011.

The Proposed Regulation for Coal Combustion Byproducts: The interagency review occurred in July 2010. This rule set forth two options for the regulation of coal combustion residue in the wake of the TVA Kingston coal ash spill.

QUESTION FROM REPRESENTATIVE WHITFIELD

Q4a. For FY 2013, DOE proposes *reducing* the funding for development of carbon capture and storage or “CCS” technology.

Under DOE’s current planning, what is a realistic date by which CCS could be developed and deployed on a large commercial scale?

A4a. The Coal Research, Development, and Demonstration Program (Coal Program) involves maturing technologies that both improve base plant efficiency and reduce the cost and energy penalty associated with capturing, utilizing and storing CO₂. The Program’s goal is to enable commercial baseload carbon capture, utilization, and storage deployment by 2020.

Q4b. In your view, is CCS a workable option on a large commercial scale in the near term?

A4b. The Coal Program funds research, development, and demonstration efforts on advanced carbon capture, utilization, and storage (CCUS) technologies required to overcome the technical and economic barriers to making CCUS a workable option for widespread, cost-effective baseload deployment by 2020. The FY 2013 funding request prioritizes research on key near-term CCUS technologies to reduce cost, reduce the energy penalty associated with carbon capture, improve power plant efficiency, and validate safe, permanent storage of CO₂, with the goal of demonstrating these technologies in the 2016 timeframe.

QUESTION FROM REPRESENTATIVE WHITFIELD

- Q5. DOE budget documents state that under DOE's "innovative Technology Loan Guarantee Program" the agency has committed almost \$27 billion to support over 30 clean energy projects. DOE says these loan guarantees will create "22,000 permanent and construction jobs." What is the breakdown between permanent versus construction jobs? Can you provide the Committee an estimate?
- A5. As of April 10, 2012, the Department expects the Title XVII projects to support 20,901 permanent and construction jobs. They represent estimates provided by the company and are subject to change when the project is underway. The breakout of these jobs by project is as follows:

Project	Construction Jobs	Permanent Jobs
Georgia Power	3,500	800
Areva	1,000	310
Solyndra Inc.	3,000	N/A
Beacon Power Corporation	20	14
BrightSource Energy, Inc.	1,000	86
Kahuku Wind Power, LLC. (First Wind)	200	10
US Geothermal, Inc.	150	10
Nevada Geothermal Power Company, Inc. (Blue Mountain)	200	14
Abound Solar	400	0
Abengoa Solana	1,700	60
Caithness Shepherds Flat	400	35
Agua Caliente	400	10
LS Power Associates (ON Line) (SWIP)	400	15
SoloPower, Inc.	270	450
Record Hill Wind	200	8
California Valley Solar Ranch	350	15
Cogentrix Alamosa Solar	75	10
Solar Reserve Tonopah (Crescent Dunes)	600	45
Ormat (Nevada)	332	64
Abengoa Mojave	830	70
Genesis	800	47
Sempra Mesquite	300	7
1366	50	70
Granite Reliable	198	6
Amp/Photon	1,028	42
First Solar, Inc. (Antelope)	350	20
First Solar, Inc. (Desert Sunlight)	550	15
Abengoa Bioenergy Biomass of Kansas	300	65
XVII Totals	18,603	2,298

QUESTION FROM REPRESENTATIVE WHITFIELD

Q6. Why does DOE believe that its appliance efficiency standards process is the appropriate way to advance energy efficiency for highly innovative, rapidly changing products such as consumer electronics and IT equipment?

A6. Consumer electronics and IT equipment are increasingly becoming significant portions of national energy use. According to the U.S. Energy Information Administration, in 1978, appliances and electronics accounted for 17% (1.77 quads) of total energy use in U.S. homes compared to 31% (3.25 quads) in 2005. As of 2009, 76% of U.S. homes had at least one computer, 45% have at least one television with a screen size 37 inches or larger, 79% have a DVD player, and 43% have at least four electronic devices, such as cell phones, at home.¹ DOE supports a range of approaches to increasing energy efficiency for these products.

DOE recognizes that appliance standards are not the only way to advance energy efficiency for these products and supports efforts through other programs, such as ENERGY STAR. Over the past year, DOE has worked with the Environmental Protection Agency (EPA) to develop robust test methods for computers, servers, small network equipment, imaging equipment, game consoles, and displays. However, DOE notes that ENERGY STAR is a voluntary program and, as such, manufacturer involvement is not required. In 2010, for example, 53% of desktop computers, 57% of LCD monitors, and 48% of set-top boxes were not ENERGY STAR qualified.² This means less efficient products still exist in the marketplace and consequently, there are opportunities for additional energy savings.

¹ "Share of energy used by appliances and consumer electronics increases in U.S. homes",

<http://www.eia.gov/consumption/residential/reports/electronics.cfm>

² ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2010 Summary

In order to respond to these types of rapidly changing products, DOE is investigating ways to be more flexible in its rulemaking analysis. The goal is to: 1) speed up the analytical process to adapt to changes in the marketplace, 2) encourage development of consensus standards recommendations among stakeholders for DOE's consideration under the Energy and Policy Conservation Act (EPCA), and 3) create an energy conservation standard(s) that is flexible enough for product innovation. DOE will be pursuing these goals in its current set-top box efficiency standards rulemaking.

QUESTION FROM REPRESENTATIVE WHITFIELD

- Q7. Why is DOE spending significant resources in a current rulemaking to develop a standard for measuring TV power consumption when the private sector is already well underway in developing such a standard with input from industry, government and NGOs?
- A7. DOE has developed a proposed test procedure for measuring TV power consumption in response to a petition received by the California Energy Commission and the Consumer Electronics Association stating that the test procedure developed in 1979 was no longer capable of accurately measuring the energy consumption of modern TVs. The original DOE test procedure, which was appropriate for measuring the energy efficiency of analog television sets only, was made obsolete on June 13, 2009, when full-power stations stopped broadcasting in the analog television service. The Department's proposed test procedure (77 FR 2830) is more applicable to modern TVs and digital broadcasting, and will help standardize energy consumption measurements across ENERGYSTAR, FTC, other Federal agencies, and other State and local governments.

DOE is aware of industry test procedure development efforts and is taking advantage of the lessons learned from private sector efforts. The proposed test procedure incorporates definitions, measurement specifications, and the on-mode, standby-passive, and off mode tests from the International Electrochemical Commissions standard IEC 62087-2011³ and the standby-active, high mode test from the Consumer Electronics Association standard CEA-2037-2009⁴, while clarifying the procedures to ensure repeatability. The proposed test procedure improves upon the existing ENERGYSTAR test procedure (which is also

³ International Electrochemical Commission's (IEC) test procedure IEC 62087-2008, "Methods of measurement for the power consumption of audio, video and related equipment."

⁴ CEA-2037-2009 "Determination of Television Average Power Consumption".

used by FTC for product labeling) by providing a more accurate representation of the power consumption of TV's with Automatic Brightness Control technology.

QUESTION FROM REPRESENTATIVE WHITFIELD

Q8a. DOE is expending significant time and resources developing standards for products with limited energy use impacts, such as non-compressor refrigerators, thermoelectric cooling of wine chillers, vacuums, and clothes irons.

Why is DOE giving greater priority to developing standards for such products, while appliance standards for other products have fallen behind the schedules agreed to by industry, energy efficiency advocates and environmental and consumer groups?

A8a. DOE prioritizes rulemakings that are bound by statutory or other legal deadlines. For products not subject to statutory deadlines, such as wine chillers, vacuums and other miscellaneous residential and commercial equipment, DOE explores additional programmatic activity consistent with its statutory purpose. While the energy use of some of these products may not have grown as aggressively compared to the rate of electronic devices, which have required increased power for computing and internet connections, their energy use remains high. Significant variation in the annual energy consumption of different basic models also exists for many of these types of products and equipment, which indicates that technologies likely exist to reduce their energy consumption. Accordingly, on January 24, 2012, DOE requested information from the public on the energy use of a variety of miscellaneous residential and commercial electrical equipment and is evaluating its next steps for these products. DOE is also aware of its other rulemaking obligations. For rulemakings that have fallen behind schedule, DOE is working towards completion of the final rules as expeditiously as possible and will prioritize them in the context of DOE's other rulemaking obligations.

Q8b. Please explain how DOE prioritizes its appliance standards work.

A8b. DOE prioritizes its appliance standards work primarily based on its statutory and other legal obligations including settlement agreements that resulted from past litigation. DOE

is committed to complying with all applicable appliance standards deadlines and uses them to build its schedule. DOE also conducts test procedure rulemakings in support of the voluntary ENERGY STAR program, in coordination with EPA. DOE explores additional programmatic activity consistent with its statutory purpose, which among other things is: to conserve energy supplies through energy conservation programs, and, where necessary, the regulation of certain energy uses; to provide for improved energy efficiency of consumer products and industrial equipment; to provide a means for verification of energy data to assure the reliability of energy data; and to conserve water by improving the water efficiency of certain plumbing products and appliances. Some of the factors that DOE considers when prioritizing work that is not bound by statutory or other legal obligations are: DOE's regulatory authority for the product, the national energy consumption of the product, the average efficiency of products on the market, the potential for efficiency improvements, and stakeholder petitions.

QUESTION FROM REPRESENTATIVE WHITFIELD

- Q9. A September 2011 GAO report on the Energy Star program stated that:
“EPA and DOE officials told us that they were aware of concerns about having two verification testing programs and that they are working closely to coordinate their efforts and minimize the potential for duplication between their respective testing programs.”

Please explain why DOE is spending federal dollars to implement a duplicative testing program for the Energy Star program when EPA already has a program that requires independent, third party testing paid for by Energy Star partners.

- A9. DOE and EPA work together to minimize duplicative verification testing for the ENERGY STAR program. The DOE verification program helps ensure that ENERGY STAR products deliver the efficient use of energy and water that consumers expect, while minimizing costs and inconvenience to product manufacturers. DOE understands that both certification bodies and DOE conduct verification testing on ENERGY STAR products; however, the two programs are complementary. The DOE program tests a subset of ENERGY STAR products that are covered by DOE's regulatory program and targets testing based on a variety of factors including, but not limited to, qualification date, proximity of rated value to the ENERGY STAR specification, and history of manufacturer not meeting ENERGY STAR specifications. DOE does not intend to duplicate EPA's testing, but rather supplement it by enabling targeted testing of a larger percentage of basic models on the market. DOE's ENERGY STAR verification testing program identified 10% of models tested in both 2010 and 2011 as not meeting ENERGY STAR specifications, demonstrating its value as a supplemental testing program. EPA's verification program is conducted through third-party certification bodies who test at least 10% of ENERGY STAR certified basic models. Half of these models are selected randomly and the other half nominated by EPA based on factors such as sales volume, referrals from utility partners and manufacturing partner compliance history. Both

programs are sensitive to the testing burden and have developed testing policies accordingly.

QUESTION FROM REPRESENTATIVE WHITFIELD

Q10a. On February 10, 2012, DOE issued a notice of proposed rulemaking on efficiency standards for liquid-immersed, medium voltage electric distribution transformers.

Is DOE aware that the proposed efficiency standards, as they currently stand, are acceptable to numerous stakeholders, including electric utilities, transformer manufacturers, and manufacturers of electrical steel?

A10a. DOE published a Notice of Proposed Rulemaking (NOPR) on February 10, 2012, in which it proposed standards for distribution transformers and invited the public to comment on those standards. In addition, DOE supported a series of negotiation meetings prior to the NOPR during which stakeholders had the opportunity to comment on the proposed rulemaking and respond to one another in real time. These negotiations produced valuable comments from the spectrum of stakeholders on a number of issues related to liquid-immersed distribution transformers. On June 20, 2012, DOE held another public meeting to discuss additional information about the liquid-immersed distribution transformer product class. The comment period closed on June 29, 2012 and DOE is considering all comments received as part of the rulemaking. Stakeholder comments are a critical source of information and feedback in helping DOE meet its statutory obligation to set the highest standard that is technologically feasible and economically justified, and will result in significant energy savings. DOE is aware of the positions of all stakeholders who submitted comments, including electric utilities, transformer manufacturers, and manufacturers of electrical steel, as well as energy efficiency and consumer advocates and other interested parties.

Q10b. Is DOE aware that any increase in efficiency standards beyond those proposed would, in all likelihood, require the use of amorphous steel—a product that may impact the cost and availability of transformers, driving up electricity rates and impacting the domestic electrical steel manufacturing base?

A10b. DOE is aware that there is a point, which varies by transformer type, beyond which amorphous steel is required. Because setting a standard at or beyond this point could reshape the market, DOE has sought to understand where this point lies for each transformer so that DOE has adequate and pertinent information upon which to base its standard. DOE received comments on this matter from several stakeholders. The issue has been discussed at great length during negotiations and public meetings. DOE will consider all stakeholder comments, including ones related to this issue, as part of the ongoing rulemaking.

Q10c. Does DOE intend to issue a final rule with efficiency levels greater than those in the proposed rule?

A10c. DOE published a Notice of Proposed Rulemaking (NOPR) on February 10, 2012, in which it proposed standards for liquid-immersed, medium voltage electric distribution transformers and invited comment on those standards. Stakeholder comments are a critical source of information and feedback in helping DOE meet its statutory obligation to set the highest standard that is technologically feasible and economically justified. Based on comments received from a diverse set of stakeholders in response to the NOPR and statements made at the February 23, 2012, public meeting, DOE chose to conduct supplemental analyses on additional efficiency levels for some liquid-immersed medium voltage electric distribution transformers. The analyses considered more stringent efficiency levels for some types of liquid-immersed, medium voltage electric distribution transformers and less stringent efficiency levels for other types of liquid-immersed-medium voltage electric distribution transformers. DOE conducted a public meeting on June 20, 2012 where stakeholders commented on the analyses presented. The comment

period closed on June 29, 2012 and DOE is considering all comments received as part of the rulemaking. These comments will be addressed in the final rule.

QUESTION FROM REPRESENTATIVE WHITFIELD

Q11a. Section 312 of the Energy Independence and Security Act of 2007 requires walk-in coolers and walk-in freezers to meet certain technical specifications and also requires DOE to establish performance-based energy efficiency standards for walk-in coolers and walk-in freezers.

Do you support innovative technologies that would allow walk-in coolers and walk-in freezers to meet or supersede efficiency standards?

A11a. As part of EISA 2007, Congress enacted a set of requirements that required walk-in coolers and walk-in freezers to be built using specific types of technologies and components in order to be eligible to be sold in the United States. Language inserted by DOE. In its current rulemaking, DOE is evaluating whether to establish a performance-based energy efficiency standard for this equipment beyond the design requirements that Congress has already required all manufacturers to meet. DOE is always interested in exploring the use of innovative technologies wherever possible, and seeks a regulatory approach that could encourage the development of more advanced methods of achieving those energy savings while minimizing costs to consumers and maintaining product utility and performance.

Q11b. Do you have the authority to waive the technical specifications of Section 312 so long as a walk-in cooler or walk-in freezer would nevertheless meet or exceed DOE energy efficiency standards?

A11b. No. The prescriptive-based standards were set by Congress in EISA 2007 and DOE does not have the authority to waive those standards.

Q11c. If not, would you be supportive of legislative efforts to amend Section 312 so that walk-in coolers and walk-in freezers that meet or exceed energy efficiency standards may be manufactured and utilized, even if they do not meet the Section 312 technical specifications?

A11c. The Department of Energy's communications with Congress must be carried out within the guidelines set out in law and in OMB Circulars A-11. A-11 notes that "... (agency representatives) must be aware of the following limitation on communications: "...An officer or employee of an agency may submit to Congress or a committee of Congress an appropriations estimate or request, a request for an increase in that estimate or request, or a recommendation on meeting the financial needs of the Government only when requested by either House of Congress" (31 U.S.C. § 1108(e)).

The Administration will provide an official position, when deemed appropriate, through the formal Executive Branch process for reviewing proposed legislation.

QUESTION FROM REPRESENTATIVE SHIMKUS

- Q1a. In your testimony before the Senate Energy & Water Appropriations on March 14th, 2012, you indicated that several states have expressed interest in hosting temporary storage of spent fuel.

Please provide a list of all states, counties, cities, tribes, or any other organizations who have met with DOE officials to discuss any aspect of siting or developing new spent fuel or high-level waste storage or disposal facilities. Please include the dates of those meetings and the names of DOE personnel in those meetings.

- A1a. As the Secretary testified, several entities “are beginning to show interest” in a spent fuel or high-level waste storage or disposal facility. To ensure that nuclear power continues to be a safe, reliable resource for our nation’s long-term energy supply and security, the United States must put in place a sustainable fuel cycle and used fuel management strategy. To advise the Administration, Secretary Chu convened the Blue Ribbon Commission on America’s Nuclear Future (BRC). This expert panel completed their final report and recommendations in January of 2012. The Administration is giving full consideration to the BRC recommendations as we work to define a path forward. The Administration will be providing additional information later this year, and will work with Congress to implement a new strategy to manage our nation’s used nuclear fuel and nuclear waste. DOE has not engaged in any meeting with outside entities to discuss specific proposals for siting or developing a DOE spent fuel or high-level waste facility or entered into negotiations regarding such matters.

- Q1b. In the Energy and Power Subcommittee hearing on March 8th, you indicated that you would need to set up a process before meeting with Nye County, Nevada, officials about their request to begin cooperative negotiations concerning hosting the proposed repository. Please provide a copy of the process developed prior to DOE meetings listed in the above question.

A1b. As explained above, the Administration is giving full consideration to the BRC recommendations as we work to define a path forward. The Administration will be providing additional information later this year, and will work with Congress to implement a new strategy to manage our nation's used nuclear fuel and nuclear waste.

QUESTION FROM REPRESENTATIVE SHIMKUS

- Q2. From the beginning of FY 2009 to present, has DOE provided to Members of Congress or their staff any draft legislative text or comments to draft legislative text pertaining to spent fuel management or storage? If so, describe the legislation and comments and please provide copies of all drafts and comments for the record.
- A2. DOE has no documents that meet the request.

QUESTION FROM REPRESENTATIVE SHIMKUS

- Q3. Please provide the most recent analysis of the additional costs to the taxpayer for the continued storage of Defense spent fuel and high-level waste resulting from DOE's failure to begin disposing of waste in 1998?
- A3. There is no near term impact to the DOE sites. Currently, the Department is working to treat and package the defense related HLW and SNF at its sites for continued safe interim storage and future disposal. These activities are expected to continue for several decades. While interim storage can continue safely onsite many years, permanent disposition is ultimately needed for the Department to complete site cleanup activities and fulfill regulatory commitments.

QUESTION FROM REPRESENTATIVE SHIMKUS

- Q4. Please provide the current total of litigation costs, since 1998, of DOE's defense in lawsuits pertaining to the Nuclear Waste Policy Act.
- A4. The Department of Justice (DOJ) litigates issues related to the Nuclear Waste Policy Act. As such, DOJ would have information concerning litigation costs and questions would be best answered by that Department.

QUESTION FROM REPRESENTATIVE SHIMKUS

- Q5. In the President's 2013 budget for the DOE, \$10 million was requested from the Nuclear Waste Fund. Please provide a detailed summary of how and on what this money would be spent.
- A5. Consistent with the Blue Ribbon Commission recommendation to promote the better integration of storage into the waste management system, including standardization of dry cask storage, DOE will develop standardized container specifications with industry and award contracts to vendors to design standardized containers. This is also consistent with direction in the FY 2012 appropriations for development and licensing of standardized transportation, aging, and disposition canisters and casks.

In the area of transportation, DOE will finalize transportation procedures for technical assistance to States and tribes consistent with section 180 (c) of the Nuclear Waste Policy Act, will initiate pilot training programs for emergency responders along those routes from decommissioned sites, and will expand interaction with Transportation Stakeholders.

QUESTION FROM REPRESENTATIVE BARTON

Q1. Please describe each change that has been made to the policies, practices or procedures of the DOE Loan Programs Office since January 1, 2011, and the date the new policy, practice, or procedure was implemented.

A1. The Loan Programs Office follows the requirements of its authorizing statutes: Title XVII of the EPAct of 2005, creating the 1703 program; the American Recovery and Reinvestment Act of 2009, creating the 1705 program; and the Energy Independence and Security Act (EISA) enacted, creating Section 136 of the ATVM Loan Program.

In addition, each of the policies and procedures implemented by the LPO to effectively underwrite and monitor energy projects is set forth in the Program's policies and procedures documentation which is regularly reviewed and updated as appropriate..

In addition, over the past two years, the Loan Programs Office has completed the following improvements:

1) Increased Efficiency and Effectiveness (date implemented: ongoing)

LPO increased our staff and are now able to process applications more efficiently and effectively.

2) Ramp up of Portfolio Management Division (date implemented: ongoing)

The Department monitors the health of its loan recipients in much the same way that commercial lenders and other federal project lenders do, with a dedicated portfolio management division staffed by asset monitoring and credit review professionals in conjunction with internal legal and engineering teams and assisted by third party collateral agents, outside counsel, and other third party specialists. The Department's

Portfolio Management Division monitors all aspects of the business condition of DOE's borrowers and their key counterparties including industry developments, changes in the competitive landscape, and business performance of the project parties. The purpose of such a comprehensive monitoring effort is to enable the Department to be proactive in changing plans, seeking additional funding, or suspending disbursements if necessary, with the goal of keeping options open to minimize risk and maximize loan recovery while meeting policy objectives.

3) Standardized Term Sheet and Form Loan Agreement (date implemented: see below)

While the terms of a deal are different for every project, there are provisions that are required for most deals. LPO created a form term sheet and a form loan agreement that are used as the starting point for the term sheets and loan agreements for all transactions. These forms are modified, as necessary, for each particular transaction, but create a consistency that did not previously exist. LPO was using a form term sheet in the fall of 2009, which was substantially modified in the spring of 2010. The first version of the current form loan agreement began being used in the beginning of 2011.

4) Streamlined NEPA (date implemented: 9/09)

LPO worked with other federal agencies to avoid duplication of the NEPA review process and, for example, to take advantage of BLM "Fast Track" NEPA review process. We conducted webinars and included detailed information about the NEPA process on the website to better inform and educate potential applicants. We also increased NEPA

staff and implemented internal pre-briefings in order to reduce the time required for internal reviews and approvals of NEPA documents.

5) Targeted Solicitation Model (date implemented: 8/10)

LPO developed a model for issuing more targeted and understandable solicitations for applications, as exemplified by the Program's manufacturing solicitation. The Department designed and organized the manufacturing solicitation to provide greater transparency into application requirements, evaluation processes, schedules and fees. LPO expects simplified solicitations to result in better applications that will more directly address the critical issues and that can be reviewed more efficiently and effectively by our staff.

6) Online Application Portal (date implemented: 8/10)

LPO created a new online portal for completing and submitting applications, which has both improved the quality of applications and shortened the amount of time that it takes to complete and process them. In the past, project sponsors may have taken days, even weeks, preparing necessary documents by either sending them via mail or submitting them through an unreliable legacy system. These methods were often cumbersome, confusing for the applicant and time-consuming for DOE staff reviewing the applications. We were able to expedite the application process by replacing the old system, which comprised of a series of highly manual steps of data collection and review to a 100 percent Web-based, automated portal with front-end data collection and back-end review

automation. It used to take DOE up to 2-3 months to complete the initial review of an application. We can now complete that review in less than two weeks.

7) New Web Site (date implemented: 9/10)

LPO redesigned and launched a more user-friendly website with more detailed information, a glossary of terms, and frequently asked questions. The site also includes project-specific information, and a prominently displayed feedback function, which allows for anonymous comments on the program. This anonymous input supplements the other feedback that the program continuously solicits from a wide array of stakeholders and interested parties.

QUESTION FROM REPRESENTATIVE DINGELL

Q1a. It has been a year since your Loan Programs Office approved a loan from the Advanced Technology Vehicles Manufacturing program. As you know, the ATVM program was created to provide the automotive industry incentives to build or expand manufacturing facilities here in the U.S. instead of taking those jobs overseas. Loan recipients such as Ford and Nissan have successfully built or expanded facilities in Michigan, Tennessee, Illinois, Kentucky and other states.

Is the Loan Programs Office working to streamline their approval process so applicants can be assured they will not be waiting for years to find out if their application will be approved?

A1a. The ATVM program seeks to provide loans to applicants that can produce products that meet or exceed the 125% of the 2005 base year standard, as outlined Section 136 of the Energy Independence and Security Act of 2007. The program continues to follow its mandate to increase manufacturing capacity for innovative, more fuel efficient vehicles and underlying components across the United States.

Every ATVM application is unique and its review process can include significant due diligence. That due diligence requires a full understanding of the design, development, manufacturing, and market plan, as well as an understanding of the quality of the management team and investors. ATVM loan negotiations must take into account the reasonable prospect of repayment and complex negotiations may result in applicants revising their initial application (e.g., updated business plans) which can extend the review process time period.

Each applicant must provide sufficient information and materials in accordance with ATVM rules and guidelines in order for an application to be deemed substantially complete. Once an application becomes substantially complete, it can then be considered

by ATVM staff for a loan. However, an application becoming substantially complete does not necessarily indicate that an applicant's business plan, technology, market strategy or financial position are fully viable, or that they will meet all criteria necessary to obtain a DOE loan. This issue is compounded by a noticeable lack of barriers to entry for applications to the program, with no application fees and the program's obligation to review all submissions without regard to the quantity or quality of the initial information submitted. First, reviewing applications with a low probability of successfully completing the loan process diverts ATVM resources from consideration of more viable projects. Secondly, despite clear communications to the contrary, many applicants whose applications are found to be substantially complete often feel a major hurdle has been overcome and a loan agreement cannot be far behind, not understanding the full scope and extent of the DOE's rigorous due diligence process.

DOE has made tremendous progress thus far, including the approval of nearly \$8.4 billion in loans for projects that are expected to retain or create nearly 40,000 jobs. The Department takes our responsibility to protect taxpayer interests very seriously and take every means necessary to identify and mitigate risks before a project receives final approval for a loan.

The ATVM Loan Program constantly looks for ways to improve the program. During the last two years, the program has implemented several changes to the program in order to better serve the applicants and tax payers. These improvements include, but are not limited to:

- Increased Staffing and Market Knowledge: We have increased both our federal and contractor support of the ATVM Loan Program, and with each deal we become more engaged in that ATV and ATV Component market and more efficient in evaluating the proposed projects.
- Deployed new ATVM Portal: We recently deployed an update to the ATVM LP portal to make it easier for potential applicants to learn about the program, find and access key documents, and submit their loan application online.
- Hosted ATVM Webinar: We recently hosted an ATVM Loan Program Webinar where we provided an overview of the ATVM Loan Program, information on the new portal deployment, and a breakdown of the Eligibility and Applicant requirements. The presentation was followed by a Question & Answer session where ATVM leadership provided responses to any questions which the audience had.

The ATVM Loan Program has also taken further steps to pave the way for both a smooth application and due diligence process, including the publication of a *Guidance for Applicants* document on the program website; the early and proactive involvement of the program's credit, legal and technical teams in all ATVM evaluations; and the structuring of basic terms as early as possible during the preliminary due diligence phase to offer applicants an opportunity to make a go/no-go decision on their pursuit of a loan, sooner.

These processes are the result of well over three years of experience in processing loan applications for the program. The ATVM team has also taken steps since early 2012 to

reach out to the automotive industry via public forums in an attempt to inform and encourage financially viable and technically meritorious applicants to submit new, comprehensive applications. In addition, proactive pre-application communication will help facilitate shorter loan application processing times allowing applicants access to ATVM staff to answer questions on targeting application materials. These ongoing efforts have led to initial interest by a number of major automotive OEMs who are currently considering applying to ATVM.

The program will continue to work with remaining applicants, with an aim to communicate application status and moving the process forward in a timely manner. The ATVM Loan Program continues to be an attractive source of funding for automotive manufacturers of vehicles and components.

- Q1b. Has the Loan Programs Office implemented any of the Allison Report recommendations to protect taxpayer dollars and provide a uniform system for evaluating loan applications?
- A1b. Former Assistant Secretary of the Treasury for Financial Stability Herbert Allison reviewed DOE's Loan Guarantee Program and provided a report, dated January 31, 2012, on the current status, credit characteristics, and risk of loss of DOE's portfolio of loans. While the report confirms that DOE's overall portfolio of loans is expected to perform well, it also includes a number of recommendations on how to improve the management of the loan program and ongoing monitoring of the loan portfolio. DOE is reviewing those recommendations to determine the best way to use them to further strengthen the program.

The Alison report also noted that DOE is not a “passive bystander;” that is, DOE currently has the ability to reduce or mitigate risk in the portfolio over time and has “robust tools” for protecting itself from elective risk. These tools include strong covenants in all loan commitments issued after mid-2010 that allow DOE to control the amount of additional risk it assumes.

QUESTION FROM REPRESENTATIVE DINGELL

Q2a. I'm concerned about lack of funding directed at the Facility for Rare Isotope Beams, or FRIB, within the Nuclear Physics Program. I'm told that the funds allocated to FRIB in the Fiscal Year 2013 budget are not enough for them to start construction this year. As of now the project is on-time and under-budget. Furthermore, the facility will generate five thousand construction jobs, four hundred permanent scientific positions, and have a \$1 billion economic impact.

I notice that in other programs within the Office of Science that the President is proposing to increase funding for scientific projects overseas. I believe that we should first ensure that we're meeting our project obligations here before sending our money and scientists abroad. Do you believe that as well?

A2a.

The FY 2013 request for the Office of Science continues its support of U.S.-based scientific projects. At the same time, the scale and cost of many scientific research projects has reached a point where international collaboration is essential.

International collaboration will help us maintain core competencies in key areas while providing our scientists with access to some of the best facilities in the world.

The potential payoff of modest investment is great, and any international efforts will leverage U.S. capability in a manner that amplifies U.S. leadership in areas of world-wide interest.

Q2b. Your Department has already invested \$50 million in the FRIB project. I am very concerned about the progress at FRIB, what is your commitment to FRIB in the future?

A2b. In the President's FY 2013 Budget, the Administration proposes funding for the Facility for Rare Isotope Beams equal to the FY 2012 enacted level of \$22 million. This request will keep this important and worthy project moving forward and reflects the priority the President places on FRIB, even in these tight budget times. We are hopeful that Congress will fund FRIB in FY 2013.

- Q2c. FRIB will have national security applications such as studying the detection of a nuclear weapon or dirty bomb detonation. I do not believe we can pursue these types of national NVV' security applications at overseas facilities. Can you briefly describe how you propose to balance these national security research needs versus commitments you believe we have with other countries?
- A2c. It is expected that research at FRIB will have a national security role with aspects that touch on nuclear stewardship, forensics, and nuclear proliferation.. Support for FRIB is balanced within the FY 2013 budget request.

QUESTION FROM REPRESENTATIVE WALDEN

Q1a. Given your support for investing in programs that advance deployment of energy technologies of the future, I want to bring your attention a couple of companies in Oregon that are producing renewable energy from woody biomass – HM3 Energy and Bear Mountain Forest Products. Both companies are in the forefront of utilizing clean renewable biomass energy.

Do you believe Biomass is Carbon Neutral?

A1a. The combustion of biomass results in biogenic carbon emissions. The use of biomass for energy also usually results in the release of non-biogenic carbon emissions from the use of fossil fuels in the production, transport, and conversion of biomass. For this reason, and for other reasons where sequestered carbon may not be completely replaced in the carbon cycle, there may not be absolute zero carbon emissions when using biomass for energy. However, the use of cellulosic-based or other advanced biofuels can greatly reduce lifecycle carbon emissions compared to conventional, fossil-based transportation fuels.

The Department of Energy (DOE) fully supports a comprehensive and acceptable lifecycle accounting of both biogenic and fossil-fuel carbon emissions when comparing energy alternatives. A known difference is that the carbon from biomass fuels is from organic pools that will be more quickly replenished as part of the natural carbon cycle, as compared to fossil fuels. The Department views biomass as a viable source for energy because of the many inherent advantages with a portfolio of clean energy alternatives.

Q1b. Do you believe biomass is renewable?

A1b. All biomass is renewable and has the potential to be grown over and over again through natural, agronomic, and silvicultural cycles. More specifically, a focus of the Department

of Energy (DOE) is in ensuring a sustainable biomass feedstock supply from our Nation's many renewable resources. Efforts are ongoing to develop, demonstrate, and deploy technologies to overcome the barriers to the economic and sustainable use of biomass as a renewable, domestic energy source.

Q1c. What is DOE's policy on biomass?

A1c. Biomass can be a clean, renewable energy source that can help to significantly diversify transportation fuels and may also be used to produce high-value bioproducts (e.g., chemicals, etc.), power and home heating fuel, and its development is a high priority for the Department of Energy (DOE). The Department seeks to fund research, development, and demonstration (RD&D) projects to produce cost competitive biofuels from non-food, sustainable feedstocks. Under its loan guarantee authority⁵, DOE can enable deployment of first-of-a-kind commercial-scale biorefineries. This deployment policy helps de-risk future investment by the private sector in the build-out of subsequent plants.

Q1d. Is it not DOE's policy that the combustion of biomass fuel is considered carbon neutral?

A1d. Prior to funding any new concepts to produce biofuels, the Department carefully evaluates the lifecycle carbon emissions and the mass and energy balances associated with the production processes. DOE's policy is to ensure that any biomass fuel funded by DOE has long-term prospects for any biomass fuel of being produced domestically and resulting in a net reduction of lifecycle carbon emissions and fossil fuel consumption, considering the production, transport and conversion of the biomass feedstock to fuel.

⁵ Energy Policy Act of 2005, Title 17, Section 1703.

QUESTION FROM REPRESENTATIVE WALDEN

Biomass

- Q2. Your opening statement reiterates the President's support for passing a Clean Energy Standard. Senator Jeff Bingaman on March 1, 2012 released his new Clean Energy Standard Act of 2012 (S. 2146).
- Q2a. Do you support Senator Bingaman's CES bill?
- A2a. The Administration has put forward several principles for the design of a Clean Energy Standard (CES). These include doubling clean electricity over the next 25 years, crediting a broad range of clean energy sources, protecting consumers from rising energy bills, ensuring fairness among regions, and promoting new and emerging clean energy technologies. Of course, there are many ways to design a CES to meet the President's goal. The Administration looks forward to working with the Chairman and with Congress on the critical work of ensuring American leadership in the clean energy economy.
- Q2b. Do you believe that DOE would be able to manage a CES that has such a complex definition for biomass – given that the only biomass that could get credit is biomass that meets all of the elements of the definition, not just one or more of them?
- A2b. The Administration is reviewing the legislation and will provide comments as the legislative process develops.
- Q2c. Do you think biomass should be considered a "renewable energy" in the CES program?
- A2c. The methodology for implementing the crediting of biomass in S. 2146 is contingent on a National Academy of Sciences (NAS) study. Without knowing the NAS implementation recommendations, we are unable to comment.

QUESTION FROM REPRESENTATIVE WALDEN

BPA Wind Integration “Environmental Redispatch”

- Q3. Nineteen bipartisan Members from the Pacific Northwest sent you a letter on January 24, 2012 describing our view that the environmental re-dispatch policy issues should be resolved in the region where we have along tradition of working together to resolve difficult challenges. These regional solutions would have to take into consideration the requirements of all statutes that are jurisdictional to BPA and would need to be both short term and long term in nature and make sense operationally and economically.

Do you support regional solutions to intermittent renewable integration issues as described above?

- A3. Yes. The Northwest Power and Conservation Council, BPA, and other regional parties have been working together on a process called the Oversupply Technical Oversight Committee (OTOC) since August 2011 as requested by the Wind Integration Steering Committee. The OTOC was tasked with developing physical long-term solutions to the region's oversupply conditions. The group is currently preparing to issue a final report, define next steps, and begin working on evaluating solutions where appropriate. BPA is implementing its Oversupply Management Protocol to displace energy on a least cost basis for spring 2012. This is a one year policy and BPA has committed to working with interested regional parties to find a durable long-term solution. Similarly, BPA is participating in the Northwest Power Pool's new Market Assessment and Coordination Committee (NWPP-MC). The NWPP-MC's objectives include generating long-term regionally supported commercial solutions to variable resource integration challenges. The Market Assessment and Coordination effort began on March 19 and utility participants have contributed financially to the support of this effort. A business case recommendation for executive review is expected by the end of 2012.

QUESTION FROM REPRESENTATIVE WALDEN

Rapid Response Team for Transmission (RRTT)

Q4. I would like to talk to you about the Rapid Response Transmission Teams that are set up to expedite the siting of transmission lines on federal lands in the west. About half of my district is owned by the Federal Government. I appreciate the fact that two proposed transmission lines in my district have qualified for consideration of the Transmission Team. The lines are Boardman to Hemingway and Cascade Crossing. The construction of these lines would create jobs. Their construction is critical to addressing reliability concerns, moving renewable energy to the load centers and creating jobs and economic growth. Also, the siting of these lines on Federal lands would avoid having to site them on productive private crop lands such as wheat and onion fields. It is important that where possible that transmission lines are sited on federal lands to avoid taking of private property. Since transmission lines serve the public good the public lands of the west should be used where practical to site such lines. It is important that these lines get sited as quickly as possible. Can you explain how this process is progressing?

A4. The Rapid Response Team for Transmission (RRTT) has completed site visits for five of its seven pilot projects . Specifically, the site visit for Boardman to Hemingway was completed on December 6-7, 2011, and Cascade Crossing on November 28-30, 2011. Site visit participants have included Federal, state, and local agencies; Tribal representatives; and project proponents. During the site visits, the RRTT's goal has been to identify key issues and challenges and lessons learned in order to improve efficiencies in siting and permitting of transmission lines. From the results of these five site visits, the RRTT is currently delineating a number of goals; the nine agencies of the RRTT will then identify systemic changes within their agencies to accomplish these goals.

The RRTT published a Request for Information (RFI) to obtain public input on challenges due to incongruent development times between remote generation and attendant transmission facilities, and potential efficiencies that might be achieved in

federal regulatory processes to decrease the time agencies require to evaluate permits for transmission facilities. Comments on the RFI were received on March 28, 2012, and are currently being analyzed by the RRTT. Public comments are available here:

<http://energy.gov/oe/articles/comments-rfi-permitting-transmission-lines-available>

As systemic changes do not happen overnight, the accomplishments of the RRTT will take time. However, to date, the RRTT has continued with incremental improvements in the pilot projects and is at the threshold of identifying specific systemic changes that each agency will be undertaking.

QUESTION FROM REPRESENTATIVE WALDEN

Manufactured Housing

- Q5a. A draft DOE rule to establish energy efficiency standards for manufactured homes is pending at OMB. It has been proposed in response to provisions in The Energy Independence and Security Act of 2007 (EISA; P.L. 110-140) to move HUD's statutory responsibility for manufactured home energy standards to DOE. This rule will result in two agencies – HUD and the DOE regulating manufactured housing.

Please provide the committee with an estimate of the cost to implement, enforce and update energy efficiency standards for manufactured homes as required by the EISA Act?

- A5a. DOE currently is in the process of preparing a Notice of Proposed Rulemaking to implement section 413 of the Energy Independence and Security Act of 2007. If promulgated, this rulemaking would establish energy efficiency standards based on the energy efficiency provisions contained in the most recent version of the International Energy Conservation Code (IECC) and any supplements to that document, except where DOE finds that the IECC is not cost-effective or where a more stringent standard would be more cost-effective, based on the impact of the IECC on the purchase price of manufactured housing and on total life-cycle construction and operating costs. DOE issued an Advance Notice of Proposed Rulemaking on February 10, 2010, in which the agency sought public input on specific cost data applicable to the rulemaking. Because this rulemaking is still in the process of internal agency development, however, it is premature at this time to provide estimates on the implementation and enforcement costs associated with the proposed rulemaking.
- Q5b. Please provide an estimate of the cost of coordinating DOE Standards with HUD's Manufactured Home Construction and Safety Standards, which also contain requirements for energy efficiency?

A5b. DOE is currently in the process of preparing a Notice of Proposed Rulemaking to implement section 413 of the Energy Independence and Security Act (EISA) of 2007. If promulgated, this rulemaking would establish energy efficiency standards based on the energy efficiency provisions contained in the most recent version of the International Energy Conservation Code (IECC) and any supplements to that document, except where DOE finds that the IECC is not cost-effective or where a more stringent standard would be more cost-effective, based on the impact of the IECC on the purchase price of manufactured housing and on total life-cycle construction and operating costs. DOE issued an Advance Notice of Proposed Rulemaking on February 10, 2010, in which the agency sought public input on the relationship between the U.S. Department of Housing and Urban Development (HUD) manufactured housing regulations and the DOE manufactured housing standards. Because this rulemaking is still in the process of internal agency development, however, it is premature at this time to provide estimates on any potential costs of coordinating the proposed standards with the energy standards contained in the HUD manufactured housing regulations.

QUESTION FROM REPRESENTATIVE TERRY

Q1. In February 2011, just one month before this new final rule was published, the Administration issued Executive Order 13563 instructing agencies to adopt regulations upon a reasoned determination that the benefits justify the costs; that the regulations impose the least burden consistent with obtaining the regulatory objectives; and that agencies consider low-cost approaches that reduce burdens and maintain flexibility. How do the certification, compliance and enforcement rules issued by DOE comply with the spirit of E.O. 13563? What evidence does DOE have that creating a new verification program would be the most affordable and least intrusive means to achieving these policy goals?

A1. DOE's March 2011 final rule adopted revisions to its existing certification, compliance, and enforcement regulations for certain consumer products and commercial and industrial equipment covered under the Energy Policy and Conservation Act of 1975, as amended. This rule finalized a process started in 2010 to help provide a level playing field for manufacturers. DOE provided clarification and some minor modifications to the manufacturer submission of compliance statements and certification reports, maintenance of compliance records by manufacturers, and the availability of enforcement actions for improper certification or noncompliance with an applicable standard. Ultimately, the provisions allow DOE to systematically enforce the applicable energy and water conservation standards for covered products and covered equipment and provide for more accurate, comprehensive information about the energy and water use characteristics of products sold in the United States. DOE expects the impact of this rule on manufacturers to be minimal, as the rule does not impose any product specific requirements that would require manufacturers to make changes to existing plants, facilities, product specifications or test procedures.

DOE believes the certification requirements adopted in the March 2011 final rule are a

necessary implementation tool to help realize the energy savings associated with the energy conservation standards. The March 2011 final rule adopted electronic reporting in a streamlined process to ensure the least burden possible.

DOE does not have its own verification testing program. DOE conducts selective testing based on information it receives about potentially noncompliant products. Should DOE consider adopting provisions for a DOE-run verification program, it would investigate the cost and benefits of such a program at that time.

QUESTION FROM REPRESENTATIVE TERRY

- Q2. Congress has already directed DOE to use third party certification for certain products. Both the Energy and Independence and Security Act of 2007 and the Energy Policy Act of 2005 clearly instruct the DOE to rely on third party certification programs for commercial refrigerators, furnaces, central air conditioners, and heat pumps when available. Despite this clear direction from Congress, why hasn't DOE relied on third-party certification programs for verification purposes? Does DOE believe it can be more effective than third party certification programs?
- A2. DOE's regulations allow manufacturers to use third-party programs to certify compliance to the Department on their behalf. DOE has specifically worked with certain third-party programs to develop a complementary submittal process for large-volume filers. While DOE's regulations provide the agency with the flexibility to test a product at any time, DOE does not have a formal verification testing program and welcomes verification information from third-party programs. Additionally, DOE routinely relies on the information shared from third-party verification programs as a tool for enforcing its standards.

QUESTION FROM REPRESENTATIVE TERRY

- Q3a. What is the cost to the government for implementing the March 7, 2011 rule? What is the estimated cost to industry and/or the consumer? If DOE moves forward with creating a duplicative verification program, what is the estimated cost for running this program? What, if any, is the incremental benefit of having the government run its own verification program?
- A3a. The March 2011 final rule adopted revisions to DOE's existing certification, compliance, and enforcement regulations for certain consumer products and commercial and industrial equipment covered under DOE's appliance standards program. While many of these regulations existed prior to the effective date of the rule, DOE provided clarification of and minor modifications to the regulatory requirements regarding manufacturer submission of compliance statements and certification reports to DOE, maintenance of compliance records by manufacturers, and DOE's use of enforcement actions to address improper certification and noncompliance with applicable energy efficiency standard(s). The provisions adopted in this final rule allow DOE to enforce the applicable energy and water conservation standards for covered products and covered equipment more efficiently and effectively, and help provide the Department with more accurate, comprehensive information about the energy and water use characteristics of products sold in the United States.

DOE has not estimated the cost of implementing the March 2011 final rule, but it believes that the costs to industry and government were minimized as much as possible. In particular, the rule streamlined the process for manufacturer certification of compliance to the Department by implementing an electronic-only recordkeeping system that allows manufacturers to submit information online. Use of the on-line system has

reduced the burden on the government for processing certifications and has mitigated the cost of compliance for industry.

At this time, DOE does not have its own verification testing program. DOE conducts selective testing based on information it receives about potentially non-compliant products. Should the Department ever consider formally adopting provisions outlining a DOE-run verification program, it would investigate the cost and benefits that such a program could deliver.

- Q3b. Mr. Secretary, the President's Science Advisor recently stated his and the President's support for the Experimental Program to Stimulate Competitive Research (EPSCoR), which ensures that all states, including the state of Nebraska, participate in and benefit from federal science and engineering (S&E) research activities. At DOE, EPSCoR serves 28 states and three territories which collectively have about one-fourth of US research universities and which confer about 20 percent of the nation's higher education S&E degrees. In a year where you have proposed a substantial increase to the Basic Energy Science budget, why does the Department not correspondingly grow the EPSCoR program? In this year's budget request, why is the DOE EPSCoR budget only approximately one-fifth of one percent of the Office of Science budget despite the fact that the number of eligible jurisdictions continues to grow?
- A3b. Of the Office of Science projected university funding in FY 2013, EPSCoR states are projected to receive nearly 10% of the budget. Most of this funding is the result of EPSCoR states successfully competing for funding through regular DOE funding opportunities. The amount designated for the EPSCoR program is 1.2% of the total university grant budget, which is comparable to that allocated for other agencies with special programs for EPSCoR states. The FY 2013 proposed research increases in the Basic Energy Sciences budget, if appropriated, will be openly competed, and everyone in the EPSCoR states will be eligible to apply.

- Q3c. DOE draws upon the advice and expertise of academic leaders as it charts its future science and technology policies. It seems that very few if any of these advisors are drawn from the 28 EPSCoR states. Could you give some indication about this imbalance and would you pledge to work with the EPSCoR community to achieve some balance for future DOE advisory roles?
- A3c. The DOE Office of Science advisory committees are made up of representatives from scientific leaders from academia, industry, and national laboratories. Currently, all of the advisory committees in the Office of Science include representatives from EPSCoR states. The Office of Science also use the scientific community to help guide our strategic planning activities. For recent workshops held by the Basic Energy Sciences (BES) program, EPSCoR state representatives made up more than 15% of the participants. We will continue to utilize participation of scientific leaders from the EPSCoR states for these activities.
- Q3d. I would be interested in seeing a breakdown of Office of Science funding. Could you provide, by state, figures for the allocation of Office of Science funding for the three most recent years for which such funding is available. It would also be helpful if you could give us some indication of the main areas of science which were funded.
- A3d. The Office of Science university research portfolio delivers scientific discoveries to transform our understanding of nature and to advance the energy, economic, and national security of the United States. The research supports:
- *Science for Discovery*, focused on unraveling nature’s mysteries—from the study of subatomic particles, atoms, and molecules that make up the materials of our everyday world to DNA, proteins, cells, and entire biological systems.
 - *Science for National Need*, focused on advancing a clean energy agenda through basic research on energy production, storage, transmission, and use; and advancing our understanding of the Earth’s climate through basic research in atmospheric and environmental sciences and climate change.

The total Office of Science funding by state is also provided in the table below. This breakdown includes national laboratory funding as well as non-research funding for various operational purposes. Approximately 20% of the total funding supports activities in EPSCoR states. This breakdown includes the support for national scientific user facilities, which are largely located at the DOE national laboratories. Under District of Columbia, we include a statement saying the number reflects unallocated balances.

These facilities host over 26,000 users annually from academia, research laboratories, and industry.

- *National Scientific User Facilities*, the 21st century tools of science, engineering, and technology—providing the Nation’s researchers with the most advanced tools of modern science including accelerators, colliders, supercomputers, light sources and neutron sources, and facilities for studying the nanoworld.

Office of Science
 FY 2013 President’s Request
 Funding by State

(dollars in thousands)

	FY 2011	FY 2012	FY 2013
Science			
Alaska			
Basic Energy Sciences	15	1	447
Biological and Environmental Research	892	.....	408
Fusion Energy Sciences Program	171	171	.....
Total, Alaska	1,078	172	855

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Alabama			
Basic Energy Sciences	1,539	827	827
Biological and Environmental Research	671	344	347
Fusion Energy Sciences Program	1,389	989	640
High Energy Physics	503	440	275
Nuclear Physics	300	132	132
Total, Alabama	4,402	2,732	2,221
Arkansas			
Basic Energy Sciences	315	166	166
Biological and Environmental Research	230	.....	.....
Total, Arkansas	545	166	166
Arizona			
Advanced Scientific Computing Research	171	209	.....
Basic Energy Sciences	2,251	1,491	1,491
Biological and Environmental Research	759	1,281	576
High Energy Physics	1,561	1,237	1,278
Nuclear Physics	458	399	399
Total, Arizona	5,200	4,617	3,744
California			
Advanced Scientific Computing Research	142,958	118,999	111,070
Basic Energy Sciences	427,505	412,420	472,842
Biological and Environmental Research	188,474	163,750	164,168
Fusion Energy Sciences Program	96,331	89,075	67,134
High Energy Physics	174,976	155,393	151,801
Nuclear Physics	30,389	26,821	21,694
Program Direction	7,200	6,519	6,713
Safeguards and Security	9,737	7,803	7,474
Science Laboratories Infrastructure	60,757	37,085	58,011
Workforce Development for Teachers and Scientists	1,584	.....	.....
Total, California	1,139,911	1,017,865	1,060,907

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Colorado			
Advanced Scientific Computing Research	1,755	1,029	348
Basic Energy Sciences	18,101	15,888	15,888
Biological and Environmental Research	14,190	9,011	9,210
Fusion Energy Sciences Program	2,245	1,696	1,420
High Energy Physics	3,466	2,814	2,937
Nuclear Physics	693	344	344
Workforce Development for Teachers and Scientists	540	75	.....
Total, Colorado	40,990	30,857	30,147
Connecticut			
Basic Energy Sciences	4,141	2,620	2,620
Biological and Environmental Research	508	532	258
High Energy Physics	3,059	2,779	2,957
Nuclear Physics	3,547	3,493	3,493
Total, Connecticut	11,255	9,424	9,328
District of Columbia (includes unallocated amounts in FY 2012 and FY 2013)			
Advanced Scientific Computing Research	1,041	101,435	169,983
Basic Energy Sciences	15,198	101,506	148,268
Biological and Environmental Research	2,023	39,389	79,515
Fusion Energy Sciences Program	1,234	45,891	56,656
High Energy Physics	3,043	67,199	93,514
Nuclear Physics	22,295	52,890	56,504
Program Direction	69,562	76,711	85,691
Safeguards and Security	896	2,518	8,120
Science Laboratories Infrastructure	.....	.....	900
Workforce Development for Teachers and Scientists	355	12,574	14,500
Total, District of Columbia	115,647	500,113	713,651
Delaware			
Advanced Scientific Computing Research	338	79	.....
Basic Energy Sciences	2,997	1,620	971
Biological and Environmental Research	1,194	1,057	748
High Energy Physics	455	367	446
Total, Delaware	4,984	3,123	2,165

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Florida			
Advanced Scientific Computing Research	187	150	100
Basic Energy Sciences	5,061	2,784	2,784
Biological and Environmental Research	1,757	1,835	1,007
Fusion Energy Sciences Program	456	347	.....
High Energy Physics	4,493	3,696	3,681
Nuclear Physics	1,320	1,320	1,320
Total, Florida	13,274	10,132	8,892
Georgia			
Advanced Scientific Computing Research	832	324	144
Basic Energy Sciences	7,123	4,442	4,442
Biological and Environmental Research	1,846	1,332	810
Fusion Energy Sciences Program	452	320	242
Nuclear Physics	590	291	291
Program Direction	1,895	.....	.....
Total, Georgia	12,738	6,709	5,929
Hawaii			
Basic Energy Sciences	656	344	344
Biological and Environmental Research	77	153	80
High Energy Physics	1,600	1,610	1,483
Total, Hawaii	2,333	2,107	1,907
Iowa			
Advanced Scientific Computing Research	6,546	6,000	6,000
Basic Energy Sciences	24,257	19,090	21,865
Biological and Environmental Research	1,755	715	858
Fusion Energy Sciences Program	360	205	207
High Energy Physics	1,988	1,842	1,639
Nuclear Physics	1,135	1,124	1,124
Program Direction	546	545	561
Safeguards and Security	1,007	993	910
Workforce Development for Teachers and Scientists	146	.....	.....
Total, Iowa	37,740	30,514	33,164

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Idaho			
Basic Energy Sciences	2,399	1,867	1,867
Biological and Environmental Research	1,449	1,190	.....
Fusion Energy Sciences Program	2,387	2,222	2,173
Nuclear Physics	110	95	95
Workforce Development for Teachers and Scientists	251	.....	.....
Total, Idaho	6,596	5,374	4,135
Illinois			
Advanced Scientific Computing Research	85,500	77,066	68,796
Basic Energy Sciences	248,587	328,742	386,910
Biological and Environmental Research	47,173	85,918	74,680
Fusion Energy Sciences Program	941	834	4,113
High Energy Physics	435,076	434,829	392,464
Nuclear Physics	32,351	50,747	55,125
Program Direction	44,089	41,053	44,524
Safeguards and Security	12,969	12,524	12,091
Science Laboratories Infrastructure	16,352	41,385	35,915
Small Business Innovative Research	163,036	.....	.....
Workforce Development for Teachers and Scientists	1,673	.....	.....
Total, Illinois	1,087,747	1,073,098	1,074,618
Indiana			
Advanced Scientific Computing Research	518	218	.....
Basic Energy Sciences	11,128	8,204	8,204
Biological and Environmental Research	1,298	659	796
Fusion Energy Sciences Program	1,394	1,240	1,240
High Energy Physics	3,915	3,168	3,715
Nuclear Physics	2,206	2,206	2,206
Total, Indiana	20,459	15,695	16,161
Kansas			
Basic Energy Sciences	3,467	3,072	3,072
Biological and Environmental Research	133	432	100
Fusion Energy Sciences Program	150	150	150
High Energy Physics	895	880	837
Nuclear Physics	340	340	340
Total, Kansas	4,985	4,874	4,499

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Kentucky			
Basic Energy Sciences	863	761	761
High Energy Physics	105	105	96
Nuclear Physics	643	643	643
Total, Kentucky	1,611	1,509	1,500
Louisiana			
Advanced Scientific Computing Research	43	.....	.....
Basic Energy Sciences	3,621	2,860	2,860
Biological and Environmental Research	185	160	150
High Energy Physics	454	619	568
Nuclear Physics	232	232	232
Total, Louisiana	4,535	3,871	3,810
Massachusetts			
Advanced Scientific Computing Research	1,966	1,562	385
Basic Energy Sciences	17,762	14,546	14,546
Biological and Environmental Research	13,918	7,673	8,428
Fusion Energy Sciences Program	28,945	28,945	17,325
High Energy Physics	16,270	11,903	14,276
Nuclear Physics	9,348	3,132	3,132
Total, Massachusetts	88,209	67,761	58,092
Maryland			
Advanced Scientific Computing Research	2,350	494	365
Basic Energy Sciences	6,814	5,758	5,758
Biological and Environmental Research	3,070	2,260	2,195
Fusion Energy Sciences Program	3,036	1,947	753
High Energy Physics	2,977	2,899	2,790
Nuclear Physics	1,645	1,507	1,500
Program Direction	619	.....	.....
Total, Maryland	20,511	14,865	13,361
Maine			
Basic Energy Sciences	620	620	620

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Michigan			
Basic Energy Sciences	13,619	6,377	6,377
Biological and Environmental Research	2,999	1,495	1,331
Fusion Energy Sciences Program	1,818	1,600	1,600
High Energy Physics	4,535	3,579	4,352
Nuclear Physics	11,849	8,830	1,830
Total, Michigan	34,820	21,881	15,490
Minnesota			
Advanced Scientific Computing Research	766	.....	.....
Basic Energy Sciences	2,120	1,609	1,609
Biological and Environmental Research	1,321	978	1,118
Fusion Energy Sciences Program	67	.....	.....
High Energy Physics	3,945	3,001	2,505
Nuclear Physics	470	470	470
Total, Minnesota	8,689	6,058	5,702
Missouri			
Basic Energy Sciences	8,545	8,035	8,035
Biological and Environmental Research	5,197	1,415	1,913
High Energy Physics	825	825	818
Nuclear Physics	888	888	888
Total, Missouri	15,455	11,163	11,654
Mississippi			
Basic Energy Sciences	275	2	2
Biological and Environmental Research	150	.....	.....
High Energy Physics	361	349	308
Nuclear Physics	598	594	594
Total, Mississippi	1,384	945	904
Montana			
Basic Energy Sciences	943	564	579
Biological and Environmental Research	131	.....	.....
Fusion Energy Sciences Program	65	65	.....
Total, Montana	1,139	629	579

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
North Carolina			
Advanced Scientific Computing Research	1,325	725	215
Basic Energy Sciences	2,977	1,260	1,260
Biological and Environmental Research	4,623	3,116	1,814
Fusion Energy Sciences Program	74	.....	.....
High Energy Physics	1,531	1,431	1,450
Nuclear Physics	7,489	7,267	5,937
Total, North Carolina	18,019	13,799	10,676
North Dakota			
Basic Energy Sciences	705	91	91
Nebraska			
Advanced Scientific Computing Research	15	.....	.....
Basic Energy Sciences	1,250	1,240	1,240
Biological and Environmental Research	130	.....	.....
High Energy Physics	.....	.....	14
Nuclear Physics	229	229	229
Total, Nebraska	1,624	1,469	1,483
New Hampshire			
Basic Energy Sciences	1,184	852	152
Fusion Energy Sciences Program	323	328	189
Nuclear Physics	415	394	394
Total, New Hampshire	1,922	1,574	735
New Jersey			
Advanced Scientific Computing Research	1,857	350	.....
Basic Energy Sciences	9,584	7,235	7,235
Biological and Environmental Research	4,938	2,115	2,984
Fusion Energy Sciences Program	78,187	71,859	59,673
High Energy Physics	4,640	3,085	4,178
Nuclear Physics	62	62	62
Program Direction	1,661	1,763	1,816
Safeguards and Security	2,397	2,232	2,128
Workforce Development for Teachers and Scientists	127	.....	.....
Total, New Jersey	103,453	88,701	78,076

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
New Mexico			
Advanced Scientific Computing Research	21,683	17,482	6,499
Basic Energy Sciences	74,226	65,967	68,167
Biological and Environmental Research	16,563	26,820	33,887
Fusion Energy Sciences Program	10,034	5,792	4,301
High Energy Physics	2,529	2,071	1,971
Nuclear Physics	12,692	10,586	9,622
Workforce Development for Teachers and Scientists	63	.....	.....
Total, New Mexico	137,790	128,718	124,447
Nevada			
Basic Energy Sciences	1,046	767	767
Biological and Environmental Research	542	375	.....
Fusion Energy Sciences Program	530	150	.....
High Energy Physics	200	200	.....
Total, Nevada	2,318	1,492	767
New York			
Advanced Scientific Computing Research	5,792	3,089	1,928
Basic Energy Sciences	277,787	277,916	216,469
Biological and Environmental Research	28,796	19,709	21,758
Fusion Energy Sciences Program	6,482	4,325	3,571
High Energy Physics	65,782	55,144	52,332
Nuclear Physics	190,198	185,182	182,668
Program Direction	4,876	4,870	5,027
Safeguards and Security	12,228	12,582	12,312
Science Laboratories Infrastructure	14,970	15,500	14,530
Workforce Development for Teachers and Scientists	2,182	202	.....
Total, New York	609,093	578,519	510,595
Ohio			
Advanced Scientific Computing Research	1,097	213	.....
Basic Energy Sciences	5,065	3,957	3,957
Biological and Environmental Research	757	691	347
High Energy Physics	3,142	3,182	3,010
Nuclear Physics	1,683	1,672	1,672
Total, Ohio	11,744	9,715	8,986

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Oklahoma			
Basic Energy Sciences	814	816	1,238
Biological and Environmental Research	1,238	1,629	657
Fusion Energy Sciences Program	242	242	.....
High Energy Physics	1,451	1,205	1,233
Total, Oklahoma	3,745	3,892	3,128
Oregon			
Advanced Scientific Computing Research	1,393	401	215
Basic Energy Sciences	1,223	1,133	1,133
Biological and Environmental Research	2,768	2,140	346
High Energy Physics	2,078	1,136	819
Nuclear Physics	260	260	260
Total, Oregon	7,722	5,070	2,773
Pennsylvania			
Advanced Scientific Computing Research	1,992	1,073	555
Basic Energy Sciences	17,114	8,486	8,486
Biological and Environmental Research	1,898	700	857
Fusion Energy Sciences Program	467	438	222
High Energy Physics	5,978	4,365	5,559
Nuclear Physics	2,369	2,296	2,296
Workforce Development for Teachers and Scientists	445	120	.....
Total, Pennsylvania	30,263	17,478	17,975
Puerto Rico			
Basic Energy Sciences	810	810	810
High Energy Physics	235	225	215
Total, Puerto Rico	1,045	1,035	1,025
Rhode Island			
Advanced Scientific Computing Research	627	266	172
Basic Energy Sciences	4,120	2,673	5,028
Biological and Environmental Research	188	25	.....
High Energy Physics	1,888	1,757	1,675
Total, Rhode Island	6,823	4,721	6,875

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
South Carolina			
Basic Energy Sciences	3,509	3,346	3,346
Biological and Environmental Research	761	380	368
High Energy Physics	690	610	731
Nuclear Physics	102	102	102
Total, South Carolina	5,062	4,438	4,547
South Dakota			
Basic Energy Sciences	.....	.....	496
High Energy Physics	25	25	.....
Nuclear Physics	96	96	96
Total, South Dakota	121	121	592
Tennessee			
Advanced Scientific Computing Research	112,855	102,045	85,879
Basic Energy Sciences	341,383	319,172	317,998
Biological and Environmental Research	86,797	76,782	77,124
Fusion Energy Sciences Program	102,738	121,115	161,583
High Energy Physics	2,480	1,091	1,002
Nuclear Physics	41,453	26,436	23,483
Program Direction	54,167	46,458	50,920
Safeguards and Security	31,369	29,158	28,549
Science Laboratories Infrastructure	5,250	5,493	5,934
Workforce Development for Teachers and Scientists	14,077	5,295	.....
Total, Tennessee	792,569	733,045	752,472
Texas			
Advanced Scientific Computing Research	4,228	876	623
Basic Energy Sciences	11,776	8,342	8,342
Biological and Environmental Research	3,032	445	952
Fusion Energy Sciences Program	5,602	4,830	1,559
High Energy Physics	6,810	5,599	6,871
Nuclear Physics	5,877	5,603	5,603
Total, Texas	37,325	25,695	23,950

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Utah			
Advanced Scientific Computing Research	1,717	215	215
Basic Energy Sciences	4,035	1,538	1,538
Biological and Environmental Research	1,235	1,042	283
Fusion Energy Sciences Program	241	227	138
High Energy Physics	61	.....	.....
Total, Utah	7,289	3,022	2,174
Virginia			
Advanced Scientific Computing Research	1,198	859	351
Basic Energy Sciences	10,710	6,724	6,724
Biological and Environmental Research	3,786	3,670	2,957
Fusion Energy Sciences Program	1,454	232	.....
High Energy Physics	3,709	3,641	1,478
Nuclear Physics	135,491	143,393	135,736
Program Direction	12,434	1,911	1,969
Safeguards and Security	1,668	1,446	1,386
Science Laboratories Infrastructure	28,419	12,337	2,500
Workforce Development for Teachers and Scientists	233	119	.....
Total, Virginia	199,102	174,332	153,101
Vermont			
Basic Energy Sciences	183	183	183
Biological and Environmental Research	158	141	146
Fusion Energy Sciences Program	33	33	33
Total, Vermont	374	357	362
Washington			
Advanced Scientific Computing Research	7,661	4,969	1,750
Basic Energy Sciences	32,005	24,453	25,754
Biological and Environmental Research	118,883	121,912	105,848
Fusion Energy Sciences Program	5,103	3,128	3,046
High Energy Physics	3,609	3,092	7,579
Nuclear Physics	7,536	6,981	6,092
Program Direction	5,471	5,170	5,330
Safeguards and Security	11,515	11,317	11,030
Workforce Development for Teachers and Scientists	924	115	.....
Total, Washington	192,707	181,137	166,429

	(dollars in thousands)		
	FY 2011	FY 2012	FY 2013
Wisconsin			
Advanced Scientific Computing Research	1,260	486	.....
Basic Energy Sciences	6,178	4,021	4,021
Biological and Environmental Research	26,229	25,756	25,795
Fusion Energy Sciences Program	14,107	12,600	10,356
High Energy Physics	4,238	3,467	3,664
Nuclear Physics	325	330	330
Total, Wisconsin	<u>52,337</u>	<u>46,660</u>	<u>44,166</u>
West Virginia			
Basic Energy Sciences	346	415	115
Fusion Energy Sciences Program	199	.....	.....
Total, West Virginia	<u>545</u>	<u>415</u>	<u>115</u>
Wyoming			
Advanced Scientific Computing Research	24	24	.....
Basic Energy Sciences	424	345	752
Biological and Environmental Research	524	530	528
Total, Wyoming	<u>972</u>	<u>899</u>	<u>1,280</u>
All Other (including foreign)			
Advanced Scientific Computing Research	622	230	.....
Basic Energy Sciences	135	135	135
Total, All Other	<u>757</u>	<u>230</u>	<u>135</u>
Subtotal, Science	<u>4,912,283</u>	<u>4,873,634</u>	<u>5,001,156</u>
Use of Prior Year Balances	-15,000	.....	-9,104
Total, Science	<u>4,897,283</u>	<u>4,873,634</u>	<u>4,992,052</u>

QUESTION FROM REPRESENTATIVE CAPPs

- Q1. The United Kingdom is considerably outspending the U.S. in marine hydro kinetic technology development, deployment, testing, and particularly in supporting demonstration projects.

While I understand that the UK has a much greater tidal resource and that they are supporting this industry more than us over the years, the U.S. in-stream and wave resource is much greater and we do have a number of demonstration ready projects.

I appreciate the Department has used some of its funding from the Recovery Act and the Water program to support U.S.-based companies, including Ecomerit, in my congressional district.

But I'm concerned the U.S. may be ceding this technology to other nations if we fail to provide appropriate R&D funds and advance specific demonstration projects.

Can you share your thoughts on this growing industry with us? And perhaps also talk about the Department's commitment to support higher requests from the Administration in the budget out years for the water power program?

- A1. Subsequent to the authorities provided in the Energy Independence and Security Act of 2007, the Department developed a robust marine and hydrokinetic (MHK) portfolio through its Water Power Program. In an effort to be competitive in this emerging global market, we have actively supported a wide range of developers in these emerging renewable energy technologies, including several California-based companies and others across the United States. For example, the Department has provided funding for several tidal energy projects, including \$10 million for a project that is the first commercial tidal energy deployment in the nation, launching in the summer of 2012. The Department has provided over \$1 million to another company to improve its turbine blade design, which recently received a FERC Pilot License for a Tidal Energy Project. The Department has also provided \$2.4 million to a company that plans to deploy a 10-buoy wave energy project off the Pacific coast. As a final example, the Department has awarded over \$2

million in funding to support demonstration and array benchmarking for wave energy converter.

In addition to providing competitively-selected grants to a number of companies and universities that have advanced the technology readiness of MHK energy technologies over the past few years, the Department also supports testing and demonstration of these technologies. Over the past several years, the Department has supported competitively-selected National Marine Renewable Energy Centers (NMRECs) in the Pacific Northwest, Florida, and Hawaii with over \$17 million, including \$10 million for infrastructure at NMREC testing sites in FY 2012. Also in FY 2012, the Department announced that it will support in-water testing of a wave energy device in collaboration with the U.S. Navy at the Navy's Wave Energy Test Site in Hawaii.

The Energy Department's MHK activities planned for FY 2013 include developing a suite of wave, tidal, and current technologies, developing advanced open water test infrastructure for these devices, and research into the costs and performance of innovative MHK systems and components. The Department also anticipates completing resource assessments in FY 2012 and FY 2013 to accurately characterize all opportunities for water power development, including wave and in-stream hydrokinetic resource assessments conducted by the California-based Electric Power Research Institute. DOE intends to use data from ongoing techno-economic MHK assessments to establish baseline levelized energy costs for these new devices, which DOE will use along with resource assessments to establish priorities for future investments in innovative water power research and development.

QUESTION FROM REPRESENTATIVE CAPPS

- Q2. Your budget continues to support the energy frontier research centers, including UC Santa Barbara's Institute for Energy Efficiency in my congressional district.

We've already seen some spin off clean tech companies, like Transsphorm, gain support from this Research Center. I'm sure there are others around the country.

Can you please tell us how these mostly university-led teams are working to solve specific scientific problems that are blocking clean energy development and how they are helping to create jobs?

- A2. Since their initiation late in FY 2009, the EFRCs have demonstrated scientific productivity as shown by publications, invention disclosures, patents and reported transfer of research results to companies and applied research efforts. As of May 2012, the EFRCs had authored over 2,400 peer-reviewed publications, including more than 60 in *Science* and *Nature*. There have also been 55 invention disclosures and 124 patents/applications, with at least 22 associated licenses.

More than 30 companies are benefiting from the results of EFRC research, including those from the Center for Energy Efficient Materials led by the University of California at Santa Barbara. Unlike smaller research awards, the EFRCs also typically have multi-institutional teams, bringing together leading researchers in diverse fields to work together on complex, use-inspired research challenges. We believe the centers provide a bridge between basic research and energy technologies and complement other research activities funded by the Department. Of the 46 EFRCs, 31 are led by universities, 12 by DOE National Laboratories, two by nonprofit organizations, and one by a corporate

research laboratory. The EFRCs are directly supporting over 2,000 researchers, including postdoctoral associates, graduate students, undergraduate students, and technical staff.

QUESTION FROM REPRESENTATIVE CAPPs

- Q3. Can you also tell us how these Frontier Research Centers complement ARPA-E and Energy Innovation Hubs?
- A3. The Energy Frontier Research Centers (EFRCs), the Advanced Research Projects Agency – Energy (ARPA-E), and the Energy Innovation Hubs comprise a portfolio of energy R&D modalities that aim to maximize the Nation's ability to achieve energy breakthroughs as quickly as possible.

The following are synopses of the unique characteristics and roles of the Frontier Research Centers, ARPA-E, and the Energy Innovation Hubs and how they complement each other:

1. *Energy Frontier Research Centers* advance fundamental science relevant to real-world energy systems. Each focuses on the long term basic research needed to overcome roadblocks to revolutionary energy technologies in a particular area. They are mostly multi-institutional centers composed of a self-assembled group of investigators, often spanning several science and engineering disciplines. This research is both "grand challenge" and "use inspired" basic science motivated by the need to solve a specific problem, such as energy storage, photoconversion, CO₂ sequestration, etc. The choice of topics is at the discretion of the applicants in response to a FOA solicited broadly across grand challenge and use inspired science. The funding range is \$2-5 million per year per project.
2. *ARPA-E* supports research that is potentially high impact but is unlikely to attract private sector investment due to high technical and financial risk. ARPA-E follows the Defense Advanced Research Projects Agency's (DARPA) entrepreneurial approach to mission-oriented research by funding scientists and technologists to accelerate an

immature energy technology with exceptional potential beyond the risk barriers that make it unlikely to attract private investment. ARPA-E does not fund discovery science nor does it support incremental improvements to current technologies. Its federal Program Directors take a "hands on" approach to managing the activities of research teams. The funding range per project may be as low as \$500,000 or as high as \$10 million. Projects are selected on their potential to make rapid progress toward commercialization.

3. *Energy Innovation Hubs* each comprise a large set of investigators spanning science, engineering, and policy disciplines focused on a single critical national need identified by the Department. Talent drawn from the full spectrum of R&D performers—universities, private industry, non-profits, and government laboratories—drive each Hub to become a world-leading R&D center in its topical area. Each Hub's management structure allows empowered scientist-managers to execute quick decisions to shape the course of research. With robust links to industry, the Hubs aim to bridge the gap between basic scientific breakthroughs and industrial commercialization. Awards are openly competed among R&D performers and are for up to \$22 million in the first year and up to \$25 million in years two through five, for a maximum of up to \$122 million over the five year term, subject to Congressional appropriations.

The following table compares some of the characteristics and roles of each new energy R&D modality.

Energy Innovation Hubs	Energy Frontier Research Centers	ARPA-E Projects
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	Energy Innovation Hubs	Energy Frontier Research Centers	ARPA-E Projects
<i>Investigators and their institutions</i>	Large set of investigators spanning multiple science and engineering disciplines and possibly including other non-science areas such as energy policy, economics, and market analysis. May be led by Labs or universities, nonprofit organizations, or private firms. The model is the three existing Office of Science Bio-energy Research Centers.	Self-assembled group of ~12-20 senior investigators. May be led by DOE laboratories or universities. About two thirds of 46 EFRCs are led by universities.	Single investigator, small group, or small teams. May be led by Labs or universities, nonprofit organizations, or private firms.
<i>Central location?</i>	Lead institution must provide a central location and strong scientific leadership. There must be a culture of empowered central research management.	Mostly multi-institutional centers, but with a clearly defined lead institution responsible for management.	Variable depending on project
<i>Diversity of disciplines per award</i>	Many	Several	Few
<i>Period of award and management</i>	5 years. Managed by Offices across DOE. Program coordinated by a working group of senior program staff.	5 years. Managed by the Basic Energy Sciences program in the DOE Office of Science.	1-3 years. Managed by ARPA-E, whose Director reports to the Secretary of Energy
<i>Award Amount</i>	~\$22 million in the first year with up to \$10 million for infrastructure start-up; ~\$25 million per year in subsequent years.	\$ 2-5 million per year	\$ 0.5-10 million per award

	Energy Innovation Hubs	Energy Frontier Research Centers	ARPA-E Projects
<i>Core motivation</i>	Integrate from fundamental research through potential commercialization. The breadth and emphasis of activities will be influenced by the nature of the Hub. Some Hubs may place a greater emphasis on basic and applied research, while others may focus more on technology development. DOE determines the topical areas of the Hubs and FOAs are topic-specific.	Fundamental research with a link to new energy technologies or technology roadblocks. The investigators proposed the subject matter from among a large set of scientific grand challenges and energy-relevant topics identified in and the FOA.	High impact translational research driven by the potential for significant commercial impact in the near-term. In general, DOE determines the topics of interest, with the exception of occasional broad-based "open FOA's" which were issued in 2009 and 2012.

QUESTION FROM REPRESENTATIVE CAPPS

Q4. What is your Department doing to coordinate with other federal agencies, particularly the Defense Department, that are either investing in clean energy technology development, deployment and testing or have a vested interest in purchasing clean power in the future.

A4. The Department of Energy (DOE) and the Department of Defense (DOD) signed a Memorandum of Understanding (MOU) on July 22, 2010 entitled "Concerning Cooperation in a Strategic Partnership to Enhance Energy Security." Also known as the "DOE - DOD Energy Security MOU", the MOU establishes an Executive Committee to create an overarching, strategic process between the departments and allow their sub-components to "strengthen and broaden" existing efforts.

The Energy Security MOU Governance Charter is intended to provide a mechanism for the Parties to engage in interagency long-term strategic planning for capabilities that are unique to DOE and its National Laboratories. This will ensure that certain national security priorities can be supported by these unique capabilities in a coordinated, effective, and efficient manner.

The objectives of the Energy Security MOU are to:

- Provide a forum for the DOE's and DOD's leadership to identify and plan strategic collaboration of common interest in the area of energy security;
- Enable DOE and its National Laboratories to research, develop, test, or evaluate sustainable energy technologies relevant to DOD operational and installation functions;

- Create a framework for DOE and DOD to consider making collaborative energy security investment decisions;
- Facilitate communication between DOE and DOD to accelerate technical progress by avoiding duplication of effort and leveraging agency investments;
- Develop a mechanism for DOE and DOD to undertake long-term strategic planning of common interest to develop and sustain strategic capabilities of interest.

DOE and DOD agreed to appoint three senior executives to serve as Co-Chairs of the Executive Committee, including the Assistant Secretary of Defense for Operational Energy Plans and Programs Operational Energy Plans & Programs, the Deputy Under Secretary of Defense for Installations and Environment, and the DOE Assistant Secretary for Electricity Delivery & Energy Reliability.

Key Project Areas:

- **Alternative Fuels – *DOE-Navy-USDA Biofuels Commercialization:*** DOE, Navy and USDA are co-supporting several U.S. biorefineries capable of producing renewable diesel and jet fuel for commercial and military applications. This co-support leverages Title III of the Defense Production Act and the Commodity Credit Corporation. Collectively, the Agencies have agreed to contribute \$510 million to this effort with at least equal cost share from private industry for the duration of the initiative.

- DOE provided \$5 million to the Defense Production Act (DPA) Integrated Product Team (IPT)
 - Phase I: DOD/Navy \$30 million put into DPA fund in FY12 to support necessary engineering design and feasibility studies for this initiative.
 - Phase II: Funding used to build plants that are accepted through the Phase I process.
 - Navy has requested \$70 million in FY13 for DPA. DOE has requested \$40M in FY13. USDA will contribute \$171M in FY12-13.
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- **Vehicles R&D – *Advanced Vehicle Power Technology Alliance (AVPTA)*:** On July 18, 2011, DOE Deputy Secretary Poneman and DOD Under Secretary Westphal signed a charter to form the Alliance, run by DOE's Vehicle Technologies Program (VTP) and the Army's Tank Automotive Research Development Engineering Center (TARDEC). Subsequently, the joint partnership team developed a list of seven specific projects to be jointly funded and managed. Projects ranging from vehicle light weighting to computer-aided engineering of advanced batteries are already underway.
 - TARDEC has stationed a staff member at DOE Headquarters Vehicle Technologies Program to assist in coordination between TARDEC and DOE.
 - In addition to jointly participating and expanding existing projects, DOE and TARDEC are planning to jointly sponsor competitive solicitations on topics of mutual interest. In March of this year, DOE and TARDEC held

a contracting meeting to begin the planning for this inter-agency contracting process.

- DOE and TARDEC are conducting joint quarterly reviews of the Alliance progress and individual project progress, with the next review scheduled for late April.

- **Grid Security – *Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS)***: DOE, Labs, DOD, Combat Commands (COCOMs) and Services collaboration with the private sector to design and deploy microgrid demonstrations at three DOD installations with a big focus on cyber security. This builds off of previous DOE and DOD investments.
 - Phase I: Joint Base Pearl Hickam-Harbor (HI), Fall FY12
 - Phase II: Fort Carson (CO), Spring FY13
 - Phase III: Camp Smith (HI), Spring FY14

- **Energy Storage – *Advanced Management and Protection of Energy-storage Devices (AMPED)***: ARPA-E will fund \$30 million in research projects under the AMPED program, which aims to develop advanced sensing and control technologies that could dramatically improve and provide new innovations in safety, performance, and lifetime for grid-scale and vehicle batteries. ARPA-E's AMPED program was announced in April, 2012 and is being closely coordinated with DOD's Hybrid Energy Storage Module Program (HESM), which is in the final stages of being formulated. ARPA-E's AMPED and DOD's HESM

programs seek to create future energy storage systems that combine endurance and rapid charge/discharge needs with reliable, reconfigurable solutions for a wide range of applications.

- **Building Energy Efficiency Technologies:** DOE's Building Technologies Program (BTP) and Federal Energy Management Program (FEMP) are working with the Office of Secretary of Defense on: 1) integrating building technologies in the smart grid alongside storage and demand response technologies; 2) technology screening, identifying technologies which will be tested by an independent lab to produce reports for consistent, educated procurement decisions; and 3) technology pilots and demonstrations.
- **Renewable Energy – *SunShot Technology Demonstrations:*** DOE's Solar Energy Technologies Program (SETP) will work with Office of the Secretary of Defense (OSD's) Energy Test Bed Program on testing and validating next generation solar energy technologies by installing two 1 MW solar test beds on military installations by 2014.
- **Advanced Manufacturing – *Pilot Manufacturing Institute:*** On March 9, 2012 President Obama announced the impending creation of a \$45 million collaborative interagency effort. In April, an interagency team announced that the collaborative effort would focus on additive manufacturing. Pilot Manufacturing Institute cosponsored by DOE (\$10M), DOD (\$15M) and Commerce (\$5M).

DOE is contributing contributed \$10 million to this effort. The joint agency team is reviewing applications for an institute focused on additive manufacturing. Each of the funding agencies will independently manage and administer their own elements of the pilot. This effort e Pilot Institute was initiated in response to the President's challenge to work together within existing resources and within existing authorities to demonstrate the concept behind the National Network for Manufacturing Innovation (NNMI). is part of Tthe NNMI is an Administration proposed mandatory \$1 billion program, the National Network for Manufacturing Innovation (NNMI), which that will support up to 15 institutes around the country. The NNMI is subject to Congressional authorization.plans to build 15 manufacturing institutes around the country as part of the FY13 budget. The joint agency team is discussing the development of an additive manufacturing institute.

- **Tactical Renewables:** DOE's SETP and Geothermal Technologies Program have engaged OSD to explore options for tactical geothermal in the field as well as deploying more cost- and mission-effective solar projects.
- **ARPA-E and Naval Facilities Command:** ARPA-E has executed a Collaborative Interagency Agreement with the Naval Facilities Engineering Command. The Navy is evaluating several projects in ARPA-E's Building Energy Efficiency through Innovative Thermodevices (BEETIT) Program. The Navy expects to select three to four BEETIT projects for a total of \$7.5 to \$9 million in follow-up research funding later in 2012. This collaboration aims to

adapt BEETIT technologies to the rigors and constraints of the expeditionary environment. This could reduce fuel consumption for heating and cooling in the expeditionary setting by 20% to 50%, thus reducing the number of fuel convoys and risks to DOD personnel.

QUESTION FROM REPRESENTATIVE BURGESS

- Q1. During the hearing on March 8 Chairman Emeritus Barton and I asked you to identify the names of the companies that are currently on the Loan Programs Office "Watch List." You did not provide these names at the hearing, but you explained that your advisor, Mr. Richard Kauffman, would be briefing Committee staff the following week on the Loan Programs portfolio. During that briefing, Mr. Kauffman would not identify the companies on that list. Please identify each company that is currently on the Loan Programs Office "Watch List," and explain why the company is listed.
- A1. Public disclosure of companies currently on LPO's Watch List would involve the release of proprietary and business-sensitive information that could adversely affect a company's financial position. However, as background information, companies are placed on the Watch List when one or more of the following factors are present:
- Changes in the macro-economic environment, including regulatory changes;
 - Changes in the business sector;
 - Internal or market driven event that significantly alters the financial profile of the project company or increases cost of capital;
 - Deteriorating financial profile and/or persistent operations inefficiencies;
 - Significant construction delays;
 - Significant issues with a major counterparty;
 - Material changes in volume or quality of feedstock or production resources;
 - Persistent technical difficulties with adverse cash flow impact;
 - Major lawsuit judged by legal counsel to have the potential of adversely impacting cash flow;
 - Loss of key management or frequent management turnover;
 - Loss of material collateral or security;
 - Termination/Loss of material contract;
 - Significant environmental event;
 - Management issues;
 - Material (financially significant) product/recall or safety recall; and/or
 - Occurrence of a force majeure event.

QUESTION FROM REPRESENTATIVE RODGERS

Q1. Back in 2008, the President touted his commitment to increasing the use of hydropower. Yet, it appears that this Administration's commitment to renewable energy only includes intermittent sources and not the low cost, clean power that hydropower can provide. Would you comment?

A1. Hydropower is a clean, low-cost energy source that not only has a significant role in the renewable energy portfolio, but also plays an important role in electricity operation and the electrical power grid. Hydropower's quick response time has been critical to ensuring power grid reliability and security. Pumped-storage hydropower is the only reliable and cost-effective utility-scale energy storage available today.

The Department has supported water power for a number of years and plans to continue and complete a number of important hydropower research and development projects in the coming years. For example, DOE selected 16 new innovative hydropower technology development projects for funding in FY 2011, and that work will continue through FY 2013. DOE will also continue efforts under the Hydropower Advancement Project, which is developing standardized assessment guidelines for upgrades at existing hydropower facilities—one of the most cost-effective ways to add new renewable energy generation capacity in the United States. The Department is also continuing to support the development of clean, reliable, cost-effective and sustainable hydropower generation in the United States under a Memorandum of Understanding with the U.S. Department of the Army and the Department of the Interior. Additionally, the Department will continue analyses to quantify the benefits that conventional and pumped-storage hydropower provide to the electric grid, which can also support the integration of variable renewable resources like wind and solar. Finally, resource assessments are to be concluded in FY

2012 and FY 2013 to accurately characterize all opportunities for water power development, and these assessments will help to guide future investments.

QUESTION FROM REPRESENTATIVE BILBRAY

- Q1. With the independent consultant's work completed, when does DOE anticipate processing the outstanding loan applications? If there is no anticipated resumption date, please explain why?
- A1. As you know, the §1703 loan program was adopted as part of the Energy Policy Act of 2005 to provide support financing to advanced technologies on reasonable terms. The 2011 appropriations provided an additional \$170 million in credit subsidy cost funding to support §1703 loan guarantees, and brought the balance of guaranteed loan volume authority to \$1.5 billion for projects where the credit subsidy cost is funded by the project sponsor.

Authority to enter into new loan guarantees under the §1705 loan program sunset September 30, 2011 – a deadline by which projects had to commence construction and close on their loans. Faced with a large volume of projects, but a limited number able to meet this deadline the Department sent letters in May 2011, to more than three dozen project sponsors, informing them that they would not meet the required deadline under §1705, but could be considered in the future for loan guarantees under the §1703 program. As the letter noted, this was not a statement of the quality or worthiness of those projects; it was simply a matter of timing.

Following the completion of the Independent Consultant Review by Mr. Herb Allison, the Department has developed a process for considering pending applications for the available §1703 funding. On April 5, 2012, the Department commenced this process by sending a letter to project sponsors with pending applications that may qualify for the

§1703 funding referred to above, asking them if they still wanted to be considered for a loan guarantee.

QUESTION FROM REPRESENTATIVE BILBRAY

- Q2. With limited funds available, does DOE anticipate prioritizing applicants who are willing to forego credit subsidies in order to maximize the total amount of loan subsidies?
- A2. DOE's paramount responsibility remains its role as a steward of taxpayer funds. As such, once the applicant pool has been evaluated against the criteria outlined in the letter to applicants sent on April 5, 2012, it will use initial screening criteria consistent with Congress's mandate for the Section 1703 program and its governing documents.

Under the Consolidated Appropriations Act of 2012, Congress provided that the Department may combine an appropriation of credit subsidy with a direct payment from the borrower to cover the total cost of a loan guarantee, allowing DOE to distribute the appropriated credit subsidy across a broader array of projects and technologies. Any required credit subsidy costs that are not funded by appropriated credit subsidy must be paid by the borrower in full at closing.

QUESTION FROM REPRESENTATIVE BILBRAY

Q3. In the independent consultant's report, he identified a category of loans which were inherently low risk, will the Department use category risk (e.g. projects backed with a PPA) level as a criteria to help expedite applications? What other criteria will be considered?

A3. While we are not limiting the funding to just those projects with guaranteed offtake agreements, the existence of an offtake agreement clearly strengthens an application and is one important factor that the Department considers as part of its underwriting process.

DOE's paramount responsibility remains its role as a steward of taxpayer funds. As such, it will use initial screening criteria consistent with Congress's mandate for the Section 1703 program and other governing documents.

Projects that are selected to move forward will undergo rigorous due diligence and loan underwriting review prior to issuance of any loan guarantee.

QUESTION FROM REPRESENTATIVE BILBRAY

- Q4. Can you shed light as to the remaining appropriations available and as to the number and general nature of those applications?
- A4. The exact number of projects and the total dollar value of the loan guarantees in this §1703 pipeline will depend on the government's assessment of the risk level of the projects selected.

Congress appropriated \$170 million in credit subsidy cost funding to support §1703 loan guarantees for renewable energy and energy efficiency projects . The Department estimates that these funds would support approximately \$1.1 billion to \$1.7 billion in loan guarantees. In addition, Congress has provided separate loan guarantee authority of \$1.5 billion for innovative renewable energy and energy efficiency projects, provided the project sponsor pays the associated credit subsidy cost.

More than three dozen applicants who were eligible for the 1705 program, but placed on hold because of our determination that they could not meet the September 30, 2011, deadlines, were sent letters on April 5, 2012, asking if they were interested in pursuing a loan guarantee under the 1703 program. The pipeline includes energy efficiency projects, as well as generation and manufacturing projects from a variety of renewable energy sectors, including solar, wind, geothermal, biofuels, and biomass.

QUESTION FROM REPRESENTATIVE MURPHY

- Q1. The Natural Gas Subcommittee of the Secretary of Energy Advisory Board expressed a desire for additional research related to shale gas. Please explain why you have ignored this recommendation from your own advisors and sought to seek to cancel the Natural Gas Technologies Program and other R&D programs established by the Energy Policy Act of 2005?
- A1. The Natural Gas Technologies Program is not proposed for cancellation. The Administration is reprioritizing the Natural Gas Technologies Program and seeking \$12 million (for DOE) to launch a collaborative research and development (R&D) initiative together with the Environmental Protection Agency (EPA) and the Department of the Interior's U.S. Geological Survey to understand and minimize the potential environmental, and safety impacts of natural gas development through hydraulic fracturing consistent with high priority recommendations of the Secretary of Energy Advisory Board's (SEAB) August 2011 "Shale Gas Production Subcommittee Ninety-Day Report." Regarding mandatory R&D under the Energy Policy Act of 2005 (EPAAct 2005), the Administration believes that Section 999 of EPAAct 2005 is too inflexible a mechanism to adequately address environmental and safety concerns in the dynamic and rapidly evolving hydraulic fracturing space.

QUESTION FROM REPRESENTATIVE MURPHY

- Q2. Methane hydrates may possibly represent a unique and promising energy resource if they can be technically and economically produced. The Energy Department has been researching hydrates for a number of years and, as I understand, there is a hydrate related field test underway in Alaska at the present time. Hydrates are present in offshore areas and in the Arctic regions – both relatively extreme and costly settings to operate in. If, however, methane hydrates can instead become part of the nation’s energy mix, the benefits could be significant. With such potential in methane hydrates, please elaborate on whether the Department believes a \$5 million for hydrate research in FY 13 is sufficient.
- A2. Significant scientific work must be completed before methane hydrate can be considered a producible natural gas resource. The present challenge is to determine whether methane hydrate deposits can yield methane gas at the rates necessary to make high-cost Arctic or deep-water production commercially viable.
- The \$5 million request in FY 2013 will support the next critical step in methane hydrate development in the U.S. Arctic region - the facilitation of a production test. Additional funding for this test is expected through international collaboration.

QUESTION FROM REPRESENTATIVE MURPHY

- Q3. The Department has historically supported technology development to solve problems facing smaller independent oil and gas producers through the Stripper Well Consortium at Pennsylvania State University. There are hundreds of thousands of wells in the U.S. that produce at marginal rates. With gasoline prices above \$4 a gallon, and the United States still running a trade deficit with OPEC nations in excess of \$120 billion, please explain why the Department's FY 13 request seeks no specific funding support for this program.
- A3. The Administration's request focuses on collaborative research and development (R&D) with the Environmental Protection Agency (EPA) and the Department of the Interior's U.S. Geological Survey to understand and minimize the potential environmental, and safety impacts of natural gas development through hydraulic fracturing consistent with high priority recommendations of the Secretary of Energy Advisory Board's (SEAB) August 2011 "Shale Gas Production Subcommittee Ninety-Day Report."

