

**STATEMENT OF**  
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**U.S. DEPARTMENT OF ENERGY**

**BEFORE THE**

**COMMITTEE ON ENERGY AND NATURAL RESOURCES**

**UNITED STATES SENATE**

**APRIL 12, 2007**

Mr. Chairman, Senator Domenici, and members of the Committee, thank you for the opportunity to present the Administration's views on S. 987, the Biofuels for Energy Security and Transportation Act of 2007, and to discuss programs under way in the Office of Energy Efficiency and Renewable Energy (EERE) at the Department of Energy (DOE) to accelerate the development and use of biofuels.

In his 2007 State of the Union address, President Bush challenged our country to reduce gasoline consumption by 20 percent in the next 10 years, the "Twenty in Ten" plan. The President called for a robust Alternative Fuel Standard, requiring 35 billion gallons of renewable and alternative fuel in 2017, nearly five times the 7.5 billion gallon renewable fuel target now in law for 2012. Expanding the mandate established by the Energy Policy Act of 2005 (EPACT 2005) is expected to decrease projected gasoline use by 15 percent. Another five percent reduction in gasoline consumption can be achieved through the Administration's proposal to reform CAFE standards. The "Twenty in Ten" plan holds the promise of diversifying the sources, types, and volumes of fuels we use, while reducing our vulnerabilities and dependence on oil. Only through transformational technological change can these goals be achieved, and we believe that the Administration's proposals provide the tools to achieve them.

#### S. 987, THE BIOFUELS FOR ENERGY SECURITY AND TRANSPORTATION ACT OF 2007

The very title of S. 987 encapsulates the critical role that biofuels can play in reconfiguring the energy future of our Nation. S. 987 promotes the production and use of biofuels through a full spectrum of activities, from basic research to fuel pump labeling, moving the country forward to increased use of biofuels. The President's vision for a dramatic shift in domestic patterns of gasoline consumption is reflected in provisions of S. 987, and to that end, the Administration supports the vision of the legislation. However, the Administration is continuing to review the bill and looks forward to further discussions with you and your staff. The following comments represent the Administration's preliminary views on the bill.

First, I would urge the Committee to adopt the volumetric targets of 35 billion gallons of renewable and alternative fuel in the next decade, as established in the President's proposal. The Administration believes that we must have a manageable timeframe for fuels and infrastructure deployment, and that a 10-year goal is an ambitious and appropriate metric. In addition, the Administration supports legislation that includes a wider variety of fuels than is provided for in S. 987. The President's goal is substantial and urgent reduction in gasoline consumption, and it is important that all options for alternative fuels be considered and that market forces play a central role in the selection of different renewable and alternative fuels.

Beyond the modifications to the existing Renewable Fuels Standard, S. 987 also speaks to a number of infrastructure and financial issues related to the biofuels industry. While the Department supports the goals of expanding biofuels infrastructure, we believe there are aspects of the technical language in S. 987 regarding the infrastructure pilot program that need further review and discussion.

In addition, the Department has serious concerns about the modifications to the Title XVII Loan Guarantee Program proposed in this legislation. Certain provisions are inconsistent with The Federal Credit Reform Act, and the Administration believes it is important that those policies be maintained. The bill also proposes a 90-day deadline for approval or disapproval of loan guarantees, which places artificial constraints on the due diligence that the Department must perform to prudently manage taxpayer dollars. This arbitrary deadline could result in meritorious applications being denied because

of insufficient time for the Department to complete its work. The Loan Guarantee Program has the potential to aggressively deploy emerging technologies for clean energy, but the very nature of these pre-commercial projects means that prudent risk management must be integral to the Department's evaluation. Additionally, changes to definitions or scope of projects involved may slow implementation of the Loan Guarantee Program. We look forward to working with the Committee to resolve these issues.

There is clear consensus that legislative action is needed to substantially reduce our dependence on oil and deploy new energy technologies into the marketplace at an unprecedented scale and rate. The Administration looks forward to working constructively with the Congress to achieve the "Twenty in Ten" goal, and deliver legislation for the President's signature before the driving season is under way.

Supporting the "Twenty in Ten" and longer term clean energy goals is the Department's portfolio of research, development, and commercialization activities. The Department is particularly focused on solving technical problems to overcome barriers to biofuels growth, including infrastructure, through forging strategic cost-shared partnerships with private industry, collaborating with other agencies, and working with the different regions of our country to bring the promise of biofuels to fruition. Combined with the financial tools already included in EPACT 2005, we believe that this multi-pronged effort will expand the role of domestically produced biofuels in our Nation's energy supply and economic future.

#### BIOENERGY RESEARCH AND DEVELOPMENT

EERE's Biomass Program and Vehicle Technologies Program, as well as other Department programs such as those within the Office of Science, are working closely together to provide technology pathways to meet the "Twenty in Ten" goal. The Office of Science is conducting basic research for breakthroughs in systems biology to identify new biofuel-producing organisms or new bioenergy crops that could lead to cost reductions for cellulosic ethanol and other biofuels. To accelerate the transformational scientific breakthroughs necessary for cost-effective production of biofuels and bioenergy, including cellulosic ethanol, the Office of Science is investing \$375 million over five years to support the establishment and operation of three Bioenergy Research Centers. These centers, selected by competitive, merit-based scientific review, will conduct comprehensive, multidisciplinary research programs on microbes and plants to develop innovative biotechnology solutions to energy production.

EERE and various U.S. Department of Agriculture (USDA) agencies conduct the applied research for advancing biomass feedstocks and conversion technologies for biorefineries. Currently, ethanol is the renewable fuel with greatest market penetration and potential for both near and long-term displacement of gasoline. EERE's Biomass Program is focused on making cellulosic ethanol cost-competitive by 2012, a target put forth in the President's 2006 Advanced Energy Initiative (AEI). In Fiscal Year (FY) 2007, including funds appropriated under the Continuing Resolution, the Department has allocated approximately \$200 million for EERE's Biomass and Biorefinery Systems R&D program to implement key activities necessary to achieve the 2012 goal for cost-competitive cellulosic ethanol. Additionally, Secretary Bodman recently announced that DOE will invest up to \$385 million for six commercial-scale biorefinery projects over the next four years, subject to appropriations. These funds, combined with industry's cost share, could lead to more than \$1.2 billion in public and private sector investment in these six biorefineries.

The EERE Biomass Program will continue in FY 2007 to support its cost-shared efforts with industry to develop and demonstrate technologies to enable cellulosic biorefineries for the production of transportation fuels and co-products. In the next few weeks the Biomass Program will announce a funding opportunity for the validation of advanced biomass conversion technologies and feedstocks in biorefineries at approximately 10 percent of commercial scale. This effort will enable industry to resolve remaining technical and process integration uncertainties and allow for more predictable, less costly scale up of “next generation” biorefinery process technologies. These 10-percent scale demonstrations have the potential to reduce the overall cost and risk to industry and contribute to the quicker commercialization of larger-scale facilities.

## ETHANOL AND BIOFUELS INFRASTRUCTURE DEVELOPMENT

The Department is working with other public and private sector partners to encourage development and deployment of a biofuels distribution infrastructure in the United States to provide for displacement of gasoline and increased consumer choice. To support this effort and help promote growth of the biofuels industry, the Department has developed a biofuels infrastructure team. This team works to promote convergence between Vehicle Technologies and the Biomass Programs to promote a biofuels industry and commercially competitive alternative fuels and vehicles. Currently, there are more than six million flexible-fuel vehicles (FFVs) on the road in this country, a significant number, but still a relatively small percentage of the approximately 225 million light duty vehicles in the U.S. One goal is to expand the use of biofuels by increasing the number of FFV owners. This would be done by improving current biofuels infrastructure and adding fueling stations to make FFV use more convenient for consumers. Another goal is to encourage all automobile manufacturers serving the U.S. market to meet and exceed state voluntary targets and significantly increase production of FFVs. In support of these goals the Department is pursuing a number of infrastructure activities, including analyses of pipelines, water issues, and advanced vehicle technologies. The biofuels infrastructure team is also assessing the impacts of higher-level intermediate blends of ethanol (e.g., E15 and E20), renewable fuels pipeline feasibility and materials research, and optimization E85 alternative fuel vehicles. This work is being coordinated with the Department of Transportation, which has responsibility for setting integrity management standards for pipeline transportation and ensuring that these products can be safely handled. These policies are designed to work with the markets, as we believe markets are best suited in deciding how and which new biofuel infrastructure is to be deployed.

The Vehicle Technologies Program has embarked on several new efforts to address vehicle efficiency, beyond ongoing combustion and fuels research. These new efforts include evaluation of the Biowagon produced by SAAB, a manufacturing subsidiary of GM, which is sold exclusively in Europe and has been reported to use ethanol-based fuels much more efficiently than current U.S. FFVs. Another new effort is focused specifically on optimizing engine efficiency with biofuels. These projects are aimed at mitigating the lower energy content of biofuels. The program is also evaluating other biofuels such as biodiesel that may contribute to future gasoline displacement. And, Vehicle Technologies has initiated an effort to engage international collaborations to address fuel standards, data sharing, and other common interests.

## INTERAGENCY ENERGY PARTNERSHIPS

In addition to infrastructure and fuels research within the Department, there are important collaborations with other Federal agencies and entities, including the Interagency Biomass Research and Development Board, which I co-chair with USDA. The Board is the governing body that coordinates biomass R&D activities across the Federal Government. In November 2006, DOE hosted

the National Biofuels Action Plan workshop in Washington DC, where representatives from multiple Federal agencies came together to identify agency roles and activities, assess gaps and synergies, and begin developing agency budgets in the area of biofuels. The Federal participants also made recommendations for improved coordination and collaboration across Federal agencies. Input from the workshop is currently being collected into the National Biofuels Action Plan workshop report. Ultimately, the goal is to improve the Board's ability to provide coordinated Federal support for biofuels production and use.

To promote the growth of local biorefineries and address biomass resource availability and feedstock infrastructure, DOE is supporting the Regional Biomass Energy Feedstock Partnerships with USDA and Sun Grant Initiative universities, which are funded through the Department of Transportation. These partnerships will help to identify the regional biomass supply, growth, and biorefinery development opportunities. We believe that using regionally available feedstocks, produced and processed locally, will allow a "distributed" transportation fuels approach that should reduce shipping and transportation issues. These regional partnerships are designed to collect and store data on a publicly available website.

### LOAN GUARANTEE PROGRAM

To provide increased incentives for financing a multitude of innovative energy technologies – including biofuels - EPACT 2005 included a provision in Title XVII for a DOE Loan Guarantee Program. With its central focus on innovative technologies to avoid, reduce, or sequester air pollutants or anthropogenic greenhouse gas emissions, the Loan Guarantee Program is a tool intended for providing broad authority for DOE to guarantee loans that support early commercial use of advanced technologies including cellulosic biorefineries that employ new or significantly improved energy technologies.

I am pleased to report that the funding contained in the FY 2007 Revised Continuing Appropriations Resolution, which the President signed on February 15, 2007, is allowing the Department to move forward in implementing the Loan Guarantee Program and standing up a Loan Guarantee Office within the Department. We are currently working on a draft Notice of Proposed Rulemaking to implement the program. Secretary Bodman has said that our goal is to have a high-quality program, and the Department is working to do just that. As you know, the Department undertook a process in FY 2006 to solicit pre-applications for the first round of loan guarantees. Biomass technologies represented nearly half of the pre-applications. The Loan Guarantee Program represents an important tool for transforming the energy portfolio in this country.

### CONCLUSION

The President's "Twenty in Ten" goal holds the promise of accelerating penetration of cellulosic ethanol and other alternative fuels into the marketplace and bringing the benefits of a clean renewable and alternative energy source more quickly to our Nation. To meet these challenges, cutting edge research, development, deployment, and commercialization must be supported by transformational policy changes – the types of proposals that the President articulated in the State of the Union, many of which are consistent with the objectives and direction of this legislation. The Administration looks forward to working with Congress to shape policies and legislation that will make this happen. This concludes my prepared statement, and I would be happy to answer any questions the Committee members may have.