

**Testimony of Joan L. Pellegrino, President and Board Members
Biomass Energy Research Association
ON USDA BIOENERGY RESEARCH**

**USDA Fiscal Year 2011 Budget Appropriation
Submitted to the House Committee on Appropriations
Subcommittee on Interior, Environment, and Related Agencies**

March 19, 2010

This testimony pertains to the Biomass Energy Research Association's (BERA) recommendations for fiscal year 2011 (FY11) in support of appropriations for the US Department of Agriculture (USDA) related to bioenergy. This includes the **Agricultural Research Service (ARS)** and the **National Agricultural Statistics Service (NASS) USDA Rural Development**, the **USDAFS Forest Products Laboratory**, and **Wildland Fire Programs**. In total, BERA recommends that **\$200,000,000** be appropriated in FY 2011 for the specified efforts below.

USDA Research, Education and Economics

- **\$20,000,000** to support **Environmental Stewardship and facilitate sustainable agricultural practices**, particularly for the production of crops and plants for the use of biofuels.

USDA Forest Service Forest Products Laboratory

- **\$20,000,000** to **expand and continue microbial and biochemical research at the USDAFS Forest Products Laboratories** to enable the application of biotechnology in wood conversions, and to develop improved fermentation and other technologies to convert low-grade wood cellulose into fuels and chemicals.

USDA Rural Development

- **\$50,000,000** to **further support the Rural Energy for America Program (REAP)**, to include an additional funds for loan guarantees under the Biorefinery Assistance Program (BAP). The 2011 budget requests \$17 million in discretionary funding; we believe this should be increased to \$50 million.

USDA Wildland Fire Programs

- **\$25,000,000** to further support the use of forest residues and thinnings for biopower and other bioenergy applications through the **Forest Biomass for Energy Program**. This is an increase of \$10 million over the current requested funding of \$15 million.

Mandatory Spending for Bioenergy

- We fully support that the \$85 million in mandatory spending for **Biomass for Advanced Bioenergy** under the Farm bill be completely allocated and funded.

BACKGROUND

On behalf of BERA's members, we would like to thank you, Mr. Chairman, for the opportunity to present the recommendations of BERA's Board of Directors for the high-priority programs that we strongly urge be continued or started. BERA is a non-profit association based in the Washington, DC area. It was founded in 1982 by researchers and private organizations conducting biomass research. Our objectives are to promote education and research, development and demonstration (RD&D) of the economic production of energy and fuels from freshly harvested and waste biomass, and to serve as a source of information on biomass RD&D policies and programs. BERA does not solicit or accept federal funding for its efforts.

There is a growing urgency to diversify our energy supply, develop technologies to utilize indigenous and renewable resources, reduce U.S. reliance on imported oil, and mitigate the impacts of energy on climate and the environment. The benefits will be many – support for economic growth, new American jobs, enhanced environmental quality, and fewer energy-related contributions to climate change. Economic growth is fueled and sustained in large part by the availability of reliable, cost-effective energy supplies. The import of oil and other fuels into the United States is growing steadily, despite increased volatility in supply and prices, especially petroleum and natural gas. This creates an economic burden on industry and consumers alike, and adversely impacts our quality of life. A diversified, sustainable energy supply is critical to meeting our energy challenges and maintaining a healthy economy with a competitive edge in global markets. Biomass can diversify U.S. energy supply in several ways:

- Biomass is the single renewable resource with the ability to **directly replace liquid transportation fuels.**
- Biomass can be used as a feedstock to **supplement the production of chemicals, plastics, and materials now produced from crude oil.**
- Gasification of biomass produces a syngas that can be utilized to **supplement the natural gas supply, generate electricity, or produce fuels and chemicals.**

While biomass will not solve all our energy challenges, it can certainly contribute to the diversity of our supply, and do so in a sustainable way, while minimizing impacts to the environment or climate. The Energy Independence and Security Act (EISA) of 2007 mandates increased use of alternative fuels, with a substantial portion to come from cellulosic biomass. To meet the ambitious EISA goals will require aggressive support for RD&D to move technology forward and reduce technical and economic risk. We also support the energy provisions of the American Reinvestment and Recovery Act of 2009 (ARRA), particularly those that provide loan guarantees for new plants and research for renewable energy.

Biomass energy plantations that provide feedstocks for forest biorefineries producing paper products as well as fuels and biopower could make an important contribution to our energy supply while providing a boost for rural economies. Wood also can be used instead of petroleum and natural gas to produce many high-value products such as plastics and chemicals. However, targeted research is needed to make this a reality. Other cellulosic feedstocks, such as agricultural residues and dedicated energy crops (short rotation poplar, switchgrass) are expected to be a primary resource for bioenergy in the future. However, research will be needed to overcome issues of recalcitrance, low yields, cost effective harvesting and storage, and other

challenges to ensure these resources are viable as future bioenergy feedstocks. Some of this research is ongoing at the US Department of Energy; however, there is a strong role for R&D in this area at USDA as well, particularly in harvesting and storage, and basic plant science and breeding. Without additional targeted research with significant Federal investment, the ambitious goals set by the RFS will not likely be met, nor will the real promise of a bioindustry be realized.

OVERALL BERA RECOMMENDATIONS FOR USDA BIOENERGY R&D

BERA's recommendations support key areas that will contribute to sustainable forestry and agriculture, as well as the creation of viable renewable resources as part of a diversified energy supply. Specific recommendations are:

Support and Expand Bioenergy Energy Research by the Agricultural Research Service (ARS) and Forest Products Laboratories: This important research is needed to maximize production, harvesting and storage of plants for bioenergy purposes. While the focus is on R&D to effectively use energy crops and residues and maximize their conversion to biofuels and bioenergy, there is also the need to develop the production equipment and practices needed to ensure a viable supply infrastructure at the large volumes necessary for an expanded bioindustry. In addition to the existing program, we are recommending research be initiated, in collaboration with programs at the US Department of Energy, on harvesting and other production equipment as well as storage and transportation. This research should include demonstration and validation of systems at the appropriate scale needed to support the large volumes of biomass feedstock needed meet the new RFS.

R&D is needed to enhance the use of energy crops and crop residues as viable energy resources. We recommend that the major thrust be on increased energy crop yields per acre, for both woody and herbaceous crops. This effort should include research, development and some large-scale (~500-acre units) plantings of species/genomes selected through R&D and assessment.

Continue Rural Development Programs to Support Bioenergy. The 2010 budget provided discretionary funding for the Rural Energy for America Program (REAP), a substantial increase over 2009. We want to see that this program continues an upward trend. This program is highly successful and historically over-subscribed, requiring additional investments. We advocate a substantial increase in funding to support the active interest in this program and renewable energy sources, including biofuels. This includes funding for biofuels under both REAP and the Biorefinery Assistance Program (BAP), above the mandatory funding provided by the 2008 Farm Bill.

USDA Wildland Fire Programs. These programs are critical to expanding the use of wood wastes and residues for biopower and other bioenergy platforms. The Forest Biomass for Energy Program is vital for continuing to expand the recovery and reuse and these valuable resources.

CONCLUSIONS

Expansion of the USDA programs as recommended by BERA enables a considerably higher probability of significantly increasing the contribution of biomass to primary U.S. energy demand through energy crops, encouraging sustainable energy crop production, improving the

cost effectiveness and diversity of biomass resources for bioenergy, and providing opportunities for rural development.

BERA recommends that all aspects of the feedstock infrastructure – from sustainable production of high yield crops to cost-effective delivery of those crops to the bioenergy customer – be developed with support from USDA, as outlined above. While grain crops are a viable solution for the near term for bioenergy, they do not provide a sustainable solution at the large volumes needed to really impact our energy use. Thus, BERA includes R&D recommendations to ensure the availability of a wide diversity of non-food cellulosic feedstocks for bioenergy, such as dedicated energy crops and agricultural residues, while considering the challenges of environmental and societal sustainability and maintaining the economic vitality of America's farmers.