2012 Biomass Research and Development Initiative Awards

The following projects have been selected for USDA awards:

- Kansas State University, Manhattan, Kan., $5,078,932. The goal of this project is to make the oilseed crop camelina a cost-effective biofuel and bioproduct feedstock. Camelina production will be incorporated into a cropping system with wheat-based crop rotations in Montana and Wyoming. Once harvested and processed, camelina oil and meal will be chemically converted to a variety of adhesives, coatings and composites. A life cycle analysis from agronomic production to end products will assess the feasibility of a nonfood oilseed as a sustainable resource with minimal negative impact on food crop systems or the environment and will provide needed information for decision-making on camelina production as a replacement for fallow in wheat-based systems.
- Ohio State University, Wooster, Ohio, $6,510,183. This project will result in an anaerobic digestion system for the production of liquid transportation fuels and electricity from animal manure, agricultural residues, woody biomass and energy crops. The novel anaerobic digestion system will be integrated with partial oxidation and Fisher-Tropsch technologies to produce gasoline. A life cycle analysis will incorporate thermodynamic principles to assess the resource use, energy/fuel production and the environmental impact of the conversion technologies.
- Ceramatec, Inc., Salt Lake City, Utah, $6,599,304. This project will convert lignocellulosic biomass to infrastructure-compatible renewable diesel, biolubricants, animal feed and biopower. New hybrids of energy sorghum will be developed, and other biomass resources include switchgrass and forestry residues. The biomass will be converted to hydrocarbons (molecules that are just like petroleum based hydrocarbons but derived from biomass) using innovative pretreatment, fermentation and electrochemical technologies. These hydrocarbons will be finished into premium synthetic bio-lubricants and biofuels via commercial petroleum refinery processes. A life cycle analysis will include energy efficiency impacts and assessment of impacts on rural development.
- USDA-Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, Pa., $6,865,942. ARS scientists will develop an on-the-farm distributed technology for converting forest residues, horse manure, switchgrass and other perennial grasses into biofuels and high-value specialty chemicals. The process will be implemented at on-the-farm scale using a patent-pending unit that will mimic the petroleum industry's catalytic cracking process. The project integrates a life cycle assessment from collection and handling of the biomass to end products and will use thermodynamic principles to assess its sustainability.

The following project has been selected for DOE award:

- Humboldt State University-Waste to Wisdom: Utilizing forest residues for the production of bioenergy and biobased products, Funding: $5,800,000 Objectives: Utilize forest residues for the production of bioenergy and biobased products. Benefits: Enhance the economic viability of forest residue utilization. Outcomes from this project will support economic development in rural, forest-dependent communities and provide increased environmental benefits (carbon sequestration) through positive impacts on the forest soils (biochar) and incidence on catastrophic wildfires.