

## RD&D Awarded under USDA-DOA Joint Biomass Research & Development Initiative Solicitation

Project Title	Year	Dept.	Roadmap Main Category	Roadmap Sub-Category	Federal \$\$ Requested	Recipient/Main Proposer
1 A Second Generation Dry Mill Biorefinery	FY02	DOE	Processing & Conversion	Biorefinery Integration	\$5,488,000	Broin and Associates, Inc.
2 A New Biorefinery Platform Intermediate	FY02	DOE	Processing & Conversion	Biorefinery Integration	\$6,807,000	Cargill, Inc.
3 Making Industrial Bio-Refining Happen!	FY02	DOE	Processing & Conversion	Biorefinery Integration	\$26,010,000	Cargill Dow
4 Integrated Corn-Based Bio Refinery (ICBR) Project	FY02	DOE	Processing & Conversion	Biorefinery Integration	\$18,184,000	DuPont
5 Advanced Biorefining of Distiller's Grain and Corn Stover Blends: Pre-Commercialization of a Biomass-Derived Process Technology	FY02	DOE	Processing & Conversion	Biorefinery Integration	\$17,734,000	Abengoa Bioenergy Corporation
6 Separation of Corn Fiber and Conversion to Fuels and Chemicals, Phase II: Pilot-Scale Operations	FY02	DOE	Processing & Conversion	Biorefinery Integration	\$2,427,000	National Corn Growers Association
7 Value Added Products from Hemicellulose Utilization in Dry Mill Ethanol Plants	FY02	USDA	Cross Cutting	Cross Cutting	\$2,000,000	Iowa Corn Promotion Board
8 Continuous Isosorbide Production from Sorbitol Using Solid Acid Catalysis	FY02	USDA	Cross Cutting	Cross Cutting	\$700,000	Iowa Corn Promotion Board
<b>FY02 Total</b>					<b>\$79,350,000</b>	

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1 Integration of Leading Biomass Pretreatment Technologies with Enzymatic Digestion and Hydrolyzate Fermentation Thermotolerant Biocatalyst for Biomass	FY03	DOE	Processing & Conversion	Bioconversion	\$1,882,866	Trustees of Dartmouth College
2 Engineering Thermotolerant Biocatalyst for Biomass Conversion to Products	FY03	DOE	Processing & Conversion	Bioconversion	\$1,437,620	University of Florida (Gainesville, FL)
3 Demonstration of the PureVision Biorefinery	FY03	DOE	Product Uses & Distribution	Biorefinery Integration	\$2,000,000	Pure Vision Technology, Inc. (Ft. Lupton, CO)
4 Platform Chemicals from an Oilseed Biorefinery	FY03	DOE	Processing & Conversion	Bioproducts	\$1,877,176	Cargill, Inc. (Minneapolis, MN)
5 Advanced Biorefinery Feedstocks	FY03	USDA	Feedstock Production	Feedstocks	\$2,000,000	Metabolix, Inc. (Cambridge, MA)
6 Research and Demonstration of Anaerobic System on a Large Dairy Farm	FY03	USDA	Processing & Conversion	Anaerobic Digestion	\$761,385	Utah State University
7 Animal Waste Management-Chicken Litter to Energy	FY03	USDA	Processing & Conversion	Thermochemical Conversion	\$1,136,936	Earth Resources, Inc.
8 New Technologies for the Production of Methyl Esters	FY03	USDA	Processing & Conversion	Thermochemical Conversion	\$1,826,648	West Central Cooperative (Ralston, IA)
9 Heterogeneous Catalyst Development for Biodiesel Synthesis	FY03	USDA	Processing & Conversion	Thermochemical Conversion	\$894,203	Clemson University (Clemson, SC)
10 Design and Demonstration of a Commercial Prototype for Onsite Production of High Purity Hydrogen from Farm Animal Wastes	FY03	USDA	Processing & Conversion	Thermochemical Conversion	\$204,603	New Energy Solutions, Inc.
11 Biomass Research and Development for the Production of Fuels, Chemicals, and Improved Cattle Feed.	FY03	USDA	Processing & Conversion	Biorefinery Intergration	\$1,400,000	Archer Daniels Midland Co. (Quincy, IL; Decator, IN)
12 Grain Value Process: Pre-Commercialization Trials	FY03	USDA	Processing & Conversion	Biorefinery Intergration	\$1,763,160	Grain Value, LLC (St. Paul, MN)
13 Coupled Processes for Bioenergy Production: Biological Hydrogen Links with Microbial Fuel Cells	FY03	USDA	Processing & Conversion	Bioconversion	\$614,913	Pennsylvania State University (University Park,
14 Biopolymers and Other Value-Added Products from Distillers' Dried Grains	FY03	USDA	Processing & Conversion	Bioconversion	\$1,000,000	Iowa State University (Ames, IA)
15 Biomass-Fired District Energy: A Source of Economic Development and Energy Security	FY03	USDA	Processing & Conversion	Cross Cutting	\$1,286,768	Local Energy (Tesuque, NM)
16 Steps Towards a Biorefinery Industry in Vermont	FY03	USDA	Processing & Conversion	Cross Cutting	\$746,912	Vermont's Alternative Energy Corporation
17 Biomass for Tomorrow's Energy and Greenhouse Gas Management Needs: An Economic, Engineering and Environmental Appraisal of Opportunities & Policies	FY03	USDA	Processing & Conversion	Cross Cutting	\$716,338	Texas Agricultural Experiment Station (College
18 Biomass Cogeneration Demonstration Plant at Central Minnesota Ethanol Cooperative	FY03	USDA	Processing & Conversion	Cross Cutting	\$2,000,000	Sebesta, Blomberg & Associates, Inc.
19 Feasibility of an Integral System for Improving the Economic and Environmental Performance of Poultry and Ethanol Production in North Alabama	FY03	USDA	Processing & Conversion	Cross Cutting	\$254,274	T.R. Miles, Technical Consultants, Inc. (Portland,
<b>FY03 Total</b>					<b>\$23,803,802</b>	

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1 Trace Metal Scavenging from Biomass Syngas with Novel High-Temperature Sorbents	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$769,376	Southern Research Institute
2 Biomass Gas Cleanup Using a Therminator	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$2,000,000	Research Triangle Institute
3 Catalytic Hydrothermal Gasification for Eastman Kingsport Chemical Production Plant	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$1,142,925	ANTARES Group Inc
4 Engineering New Catalysts for In-Process Elimination of Tars	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$1,995,932	Gas Technology Institute
5 Thermochemical Conversion of Corn Stover	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$1,989,365	Bioengineering Resources, Inc.
6 Advancement of High Temperature Black Liquor Gasification Technology	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$1,078,080	Weyerhaeuser Company
7 Cost-Benefit Analysis of Gasification for Fuels/Chemicals Production at Kraft Pulp Mills	FY04	DOE	Cross Cutting	Cross Cutting	\$552,620	Princeton University
8 Investigation of Pressurized Entrained Flow Draft Black Liquor Gasification in an Industrially Relevant Environment	FY04	DOE	Processing & Conversion	Thermochemical Conversion	\$779,069	University of Utah
9 New Sustainable Chemistry for Adhesives, Elastomers and Foams	FY04	DOE	Product Uses & Distribution	End-Products	\$2,000,000	Rohm and Haas Co.
1 Integrated Size Reduction and Separation to Pre-Fractionate Biomass	FY04	USDA	Feedstock Production	Feedstock Handling	\$717,319	University of Tennessee
2 Biomass Opportunity for Imperial, Nebraska Region: What is the Value?	FY04	USDA	Public Policy	Cross Cutting	\$2,000,000	Imperial Young Farmers & Ranch
3 Integrated Feedstock Supply Systems for Corn Stover Biomass	FY04	USDA	Feedstock Production	Feedstock Handling	\$1,999,724	Iowa State University
4 Fuel Cell Systems Operating on 100% Bio-Liquid Fuels	FY04	USDA	Product Uses & Distribution	End-Products	\$965,161	Technology Management Inc.
5 BioSep: A New Ethanol Recovery Technology for Small-Scale Rural Production of Ethanol from Biomass	FY04	USDA	Product Uses & Distribution	End-Products	\$1,032,045	Membrane Technology and Research, Inc.
6 Hayfork Biomass Utilization and Value Added Model for Rural Development	FY04	USDA	Public Policy	Cross Cutting	\$503,400	Watershed Research and Training Center
7 Development of a Wood Preservative System from Wood BioOil Fractions	FY04	USDA	Product Uses & Distribution	Cross Cutting	\$1,409,011	Mississippi State University, Forest Products Department
8 Technology Transfer and Education Programs for the Southern U.S.	FY04	USDA	Product Uses & Distribution	Cross Cutting	\$1,075,001	USDA Forest Service Southern Research Station
9 Development of Existing Biomass Resources through Education of Key Supply Bottlenecks	FY04	USDA	Public Policy	Education and Outreach	\$397,711	University of Minnesota
10 Sustainable Forestry for Bioenergy and Biobased Products	FY04	USDA	Public Policy	Education and Outreach	\$1,801,453	Southern Forest Research Partnership Inc.
11 Development of Workable Incentive Systems for Biobased Products, Biofuels and Biopower	FY04	USDA	Public Policy	Incentives	\$450,000	North Carolina State University
12 Small-scale, Biomass Fired Gas Turbine Plants Suitable for Distributed and Mobile Power Generation	FY04	USDA	Public Policy	Economic Analysis	\$241,933	Electric Power Research Institute
13 Design and Demonstration of a Commercial Prototype for Onsite Production of High Purity Hydrogen from Farm Animal Wastes	FY04	USDA	Processing & Conversion	Thermochemical Conversion	\$1,456,931	New Energy Solutions, Inc.
<b>FY04 Total</b>					<b>\$26,357,056</b>	

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1 Increasing the Potential for the Utilization of Cellulose from Straw for Biofuel and Bioproduct Production	FY05	USDA	Feedstocks Production	Biotechnology and Plant Physiology	\$693,285	University of Idaho
2 Development of Low-Lignin Switchgrass for Improved Ethanol Production	FY05	USDA	Feedstocks Production	Biotechnology and Plant Physiology	\$670,166	The Samuel Roberts Noble Foundation
3 Implementation of a Scale-Up Pilot Plant Demonstration Facility toward the Commercialization of Florida Biomass Feedstocks for Ethanol Production	FY05	USDA	Feedstocks Production	Feedstock Handling	\$1,920,000	The Tampa Bay Area Ethanol Consortium
4 Environmental and Economic Performance of an Integrated, Digester-Cogeneration-Value-Added Process	FY05	USDA	Product Uses & Distribution	End-Products and Distribution	\$805,938	Clarkson University
5 Biomass Gasification: A Comprehensive Demonstration of a Community-Scale Biomass Energy System	FY05	USDA	Product Uses & Distribution	End-Products and Distribution	\$1,896,493	University of Minnesota, Morris
6 Conversion of BioDiesel Derived Glycerol to Glycidol, Glycerol Carbonate and C-3 Oxygenates by Catalytic and Biocatalytic Pathways	FY05	USDA	Product Uses & Distribution	End-Products and Distribution	\$1,606,265	North Carolina State University Department of
7 Carbon Fiber from Biomass Lignins	FY05	USDA	Product Uses & Distribution	End-Products and Distribution	\$1,083,770	Oak Ridge National Laboratory
8 Environmental Enhancement through Corn Stover Utilization	FY05	USDA	Product Uses & Distribution	End-Products and Distribution	\$1,853,996	Iowa State University
9 Biopower Demonstration and Educational Outreach	FY05	USDA	Public Policy		\$990,500	University of Montana College of Technology
10 Incentives for Biomass Commercialization: Pioneering Markets for Biomass Using Renewable Energy Certificates, Emission Reduction Credits and	FY05	USDA	Public Policy		\$449,993	Environmental Resources Trust
11 Bioenergy: Optimum Incentives and Sustainability of Non-Industrial Private Forests in the U.S. South	FY05	USDA	Public Policy		\$656,525	University of Florida
<b>FY05 Total</b>					<b>\$12,626,931</b>	

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1 Energy Corn Consortium	FY06	DOE	Public Policy		\$1,926,970	Edenspace Systems Corporation
2 Novel Enzyme Products for the Conversion of Defatted Soybean Meal to Ethanol	FY06	DOE	Processing and Conversion		\$1,259,000	Lucigen Corporation
3 Value Prior to Pulping	FY06	DOE	Preprocessing and Conversion		\$1,521,763	Center for Technology Transfer, Inc
4 Overcoming Barriers to Facilitate the Commercialization of Willow Biomass Crops as a Feedstock for Biofuels, Bioenergy and Bioproducts	FY06	USDA	Feedstocks Production		\$813,450.00	SUNY College of Environmental Science and
5 Biotechnological Improvement of Switchgrass	FY06	USDA	Feedstocks Production		\$1,572,460	Ceres, Inc.
6 Moisture Management in Polylactide and Polylactide Copolymers	FY06	USDA	Processing and Conversion		\$1,312,389.00	Drexel University
7 High-Value Chemical Production from Biodiesel-Derived Glycerol	FY06	USDA	Processing and Conversion		\$2,000,000	Virent Energy Systems, Inc.
8 Lignin Conversion to Value-Added Materials -	FY06	USDA	Processing and Conversion		\$579,340.00	The Pennsylvania State University
9 Adding Value to Commercial Polymers through the Incorporation of Biomass Derived Chemistries	FY06	USDA	Processing and Conversion		\$1,762,157.44	Iowa Corn Promotion Board
10 Thermoplastics composites Reinforced with Natural Fibers and Inorganic Nano-Particles	FY06	USDA	Product Uses & Distribution		\$791,865.00	Louisiana State University Agricultural Center
11 A Plant-based Production System for Methacrylate	FY06	USDA	Feedstocks Production		\$1,523,530	Ceres, Inc.
12 Enhancing Animal Feed Values in Corn Dry Mills with Biobased Solvents	FY06	USDA	Preprocessing and Conversion		\$400,000	Argonne National Laboratory
13 Strategic Development of Biomass in the Western State	FY06	USDA	Public Policy		\$290,246	Western Governors' Association
14 Technical Area 4; Expansion of ethanol production: evaluation of costs and benefits to rural communities in the Upper Mississippi River Basin	FY06	USDA	Processing and Conversion		\$676,722	Southern Illinois University
15 Analysis for Strategic Guidance Demonstrating the Value of Waste Biomass Feedstocks for Fuel Ethanol Production from Energy Policy Perspectives	FY06	USDA	Product Uses & Distribution		\$250,001	Clarkson University
16 Life Cycle Assessment to Improve the Sustainability and Competitive Position of Biobased Chemicals	FY06	USDA	Product Uses & Distribution		\$376,616	Michigan State University
17 Strategic Positioning of Biofuels in the Economic Context of Agriculture, Crude Oil, and Auto-Manufacturing	FY06	USDA	Product Uses & Distribution		\$435,997.00	North Carolina State University
<b>FY06 Total</b>					<b>\$17,492,507</b>	
<b>FY02-06 Total</b>					<b>\$159,630,296</b>	