

USDA



Rural Development

Committed to the future of rural communities.

*Energy From Agricultural
New Technology, Innovation Programs
and Success Stories*

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Renewable Energy

- *FY 2002 Farm Bill – Title IX -Energy*
- *Other USDA Programs*

Farm Bill - Energy Title
Section 9001 – Definition

Renewable Energy:

Biomass

Geothermal

Hydrogen

Solar

Wind

Farm Bill - Energy Title
Section 9001 – Definitions Con't

Biomass:

Agricultural Crops

Tree Grown for Energy Production

Plants (including aquatic plants and grasses)

Residues

Fibers

Animal Waste and other Waste Materials

Fats, Oils and Greases

Farm Bill - Energy Title

Section 9006 – Renewable Energy Systems and Energy Efficiency Improvements Program

- Establishes a grant, loan, and loan guarantee program to assist eligible farmers, ranchers, and rural small businesses in purchasing renewable energy systems and for making energy efficiency improvements.*

General Provisions

- *Grant amount not to exceed 25% of activity funded.*
- *Combined loan/grant not to exceed 50% of cost of activity funded.*

Partnering for America's Future

USDA:

Rural Development

Farm Services Agency

Natural Resource and Conservation Service

Forest Service

Department of Energy

Environmental Protection Agency



Section 9006 Funding Activity FY 03 thru 05

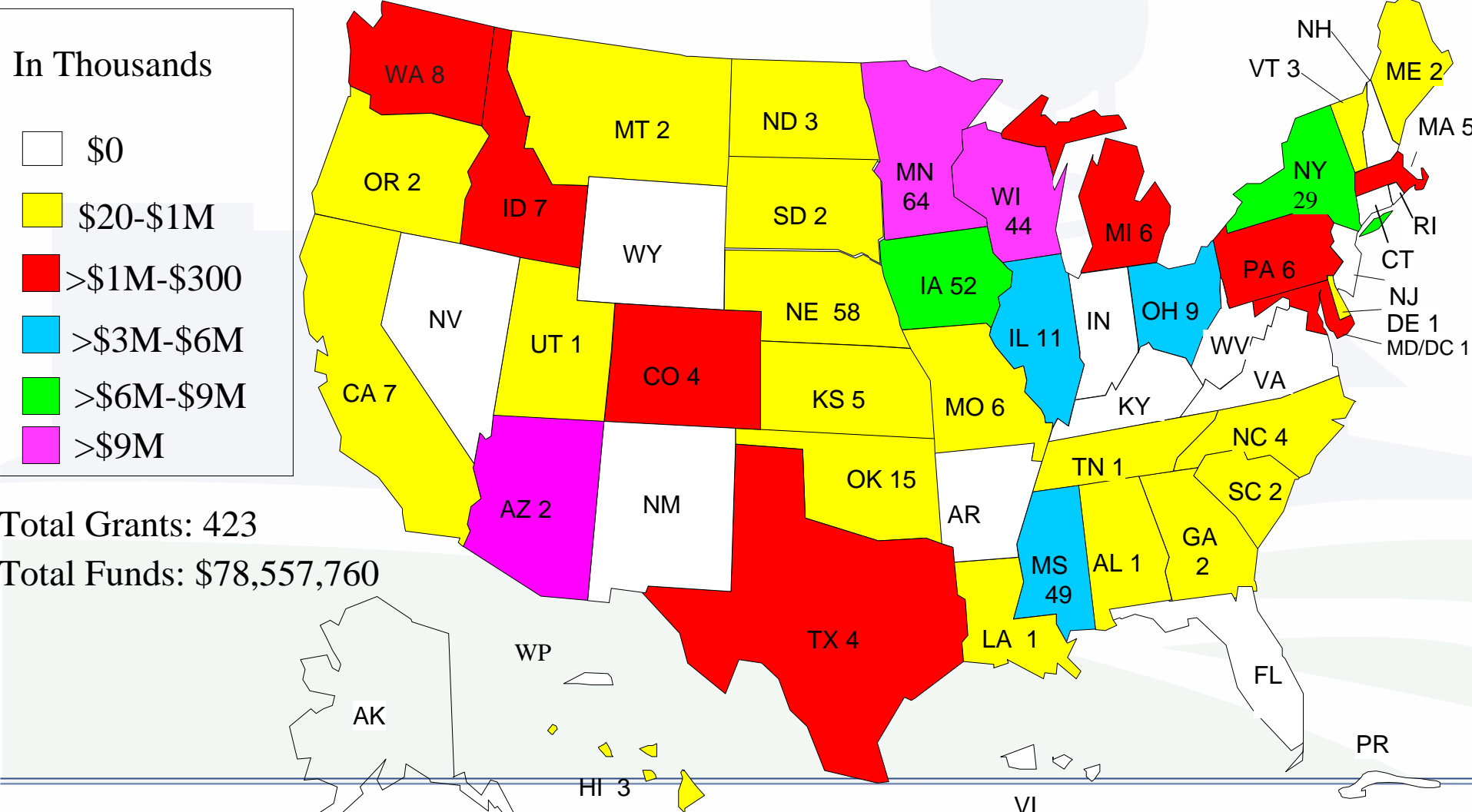
Renewable Energy

	<i>No.</i>	<i>Amounts</i>	<i>Leveraged Funds</i>
<i>Biomass</i>	119	\$29,757,021	\$197,116,700
<i>Wind</i>	121	27,809,516	446,418,325
<i>Solar</i>	17	1,442,243	3,559,375
<i>Geothermal</i>	4	380,283	1,140,872
<i>Hybrid</i>	9	2,439,832	185,455,600
<i>Totals</i>	<u>270</u>	<u>\$61,828,895</u>	<u>\$833,690,872</u>
<i>Energy Efficiency</i>	165	\$4,927,655	\$15,833,480

Guaranteed Loans (Biomass): 2 - \$10,100,000 Leveraged Funds \$13,134,000



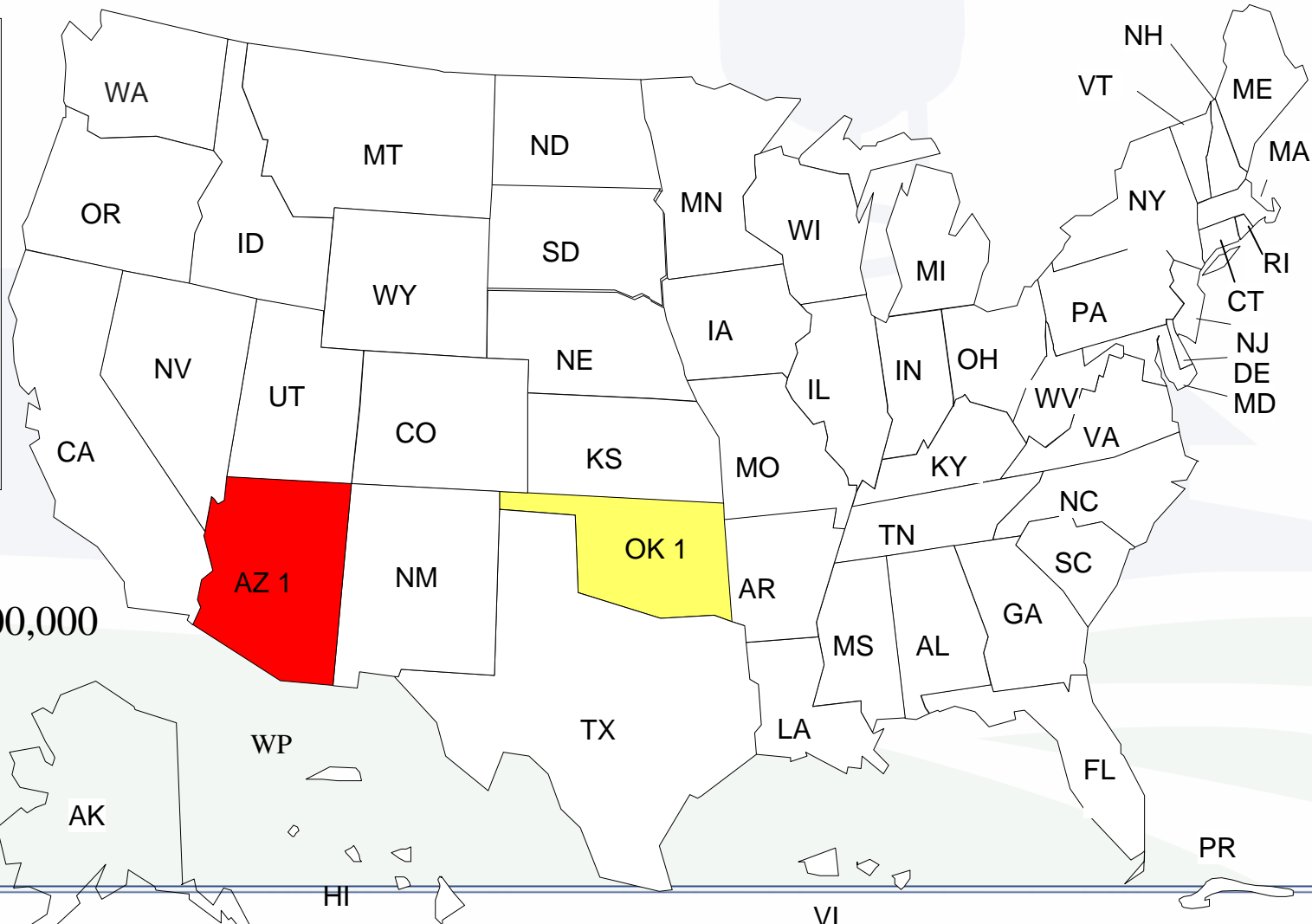
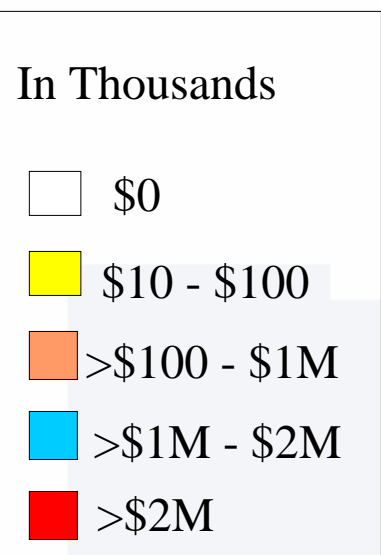
Renewable Energy Grant Program Caseload As of September 30, 2005



Committed to the future of rural communities.

As of September 30, 2005

Renewable Energy Loan Program Caseload As of September 30, 2005



Total Loans: 2

Total Funds: \$10,100,000



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Section 9006 – FY 06 Funding

- *\$11.385 Million of Grant Funding*
- *\$176.5 Million of Guaranteed Loan Funding*
- *Application Procedures/Windows*

9006 Stories: Project Development Innovation, Keys to Success, Lessons Learned

- Bioenergy, Iowa
- Wind, Minnesota
- Solar, Oregon
- Geothermal, Iowa
- Energy Efficiency, Mississippi
- Biodiesel, Ohio

Kendrick Forest Products –Biomass

Project Details:

- Project uses on-site wood waste to generate energy in order to reduce the reliance on natural gas and electricity
- Awarded 190K 9006 grant, located in Iowa

Project Development:

- Due to increasing energy demands, Kendrick was researching alternatives to generate heat
- Read about 9006 on website and contacted local USDA – Rural Development office
- Hired consultant to perform feasibility study
- Began grant writing process when 2004 NOFA published

Kendrick Forest Products –Biomass

Keys to Success:

- Early consultation with RD office
- Well organized and thorough proposal with detailed financial and engineering information
- Coordination of Project Team

Lessons Learned:

- Conducting the feasibility study ahead of time provides important financial and technical data for the application writing process
- Use of on-site materials for energy production offers dual benefit:
 - Producing power
 - Eliminating waste



Wolf Wind

Project Details:

- 5 turbines, each owned by newly created LLCs
- Each LLC received a grant for 192K, total project cost for each turbine at \$1.3M
- Located in Nobles County, Minnesota

Project Development:

- Project discussions began as early as 1999
- Filed 9006 application in 2003
- Minnesota-Style “flip” structure
- As part of application, feasibility studies were developed



Wolf Wind

Keys to Success

- Adequate incentives were available for all stake holders
- Project able to secure wind turbines in an increasingly tight supply market
- Group flexible in its ability to secure a long term power purchase agreement

Lessons Learned

- Project scheduling critical
- Alternative financing models optimally leverage available incentives – allow many RE project to move forward
- To ensure confidence, engineering and financial assurances must be provided to equity and financial investors
- Interconnection studies must be started early to avoid start-up delay

Hartman Farm – Solar

Project Details:

- Photovoltaic (Solar) system, 23 kW, installed on Hartman property
- Offsets 84% of the electricity used for irrigation pumping on farm
- Awarded 9006 grant of \$49,335
- Located in Klamath County, Oregon

Project Development:

- Looking for solution to a 10-fold or greater energy rate increase
- Solar pilot project launched
 - PacifiCorp
 - Energy Trust of Oregon (ETO)
 - Northwest Sustainable Energy for Economic Development (NW SEED)
- Hartman project site used as model
 - PacifiCorp, ETO, and NW SEED provide project management, financial and technical assistance

Hartman Farm – Solar

Keys to Success:

- Well organized and written application with strong project team providing financial and technical support
- Experienced project team ensures engineering and technical concerns adequately addressed
- Leveraging federal and state financial incentives
 - Green tags
 - Business Energy Tax Credit (BETC)
 - State Energy Loan Program

Lessons Learned:

- Enlarging stakeholder group can provide additional support and possible sources of new funding
- Cooperation among local, state and federal agencies can increase project success
- Value of green tags, especially on higher cost technologies
- Linking project to a pilot program to serve as example allowed other stakeholders to participate

Park Farm Winery – Geothermal

Project details:

- In ground, closed loop geothermal energy for winery
- Project awarded \$35,918 grant

Project development:

- Winery looking to reduce energy cost for production and marketing facility
- Contacted USDA – Rural Development for options on financing



Park Farm Winery – Geothermal

Keys to Success:

- Documented energy savings backed up by clearly explained engineering
- Commercially available technology with well-known performance track record
- Coordination with RD State Office

Lessons Learned:

- Incentive programs offered by Rural Electric Cooperatives can save both the Coop and the member money
- Use of digital system controls ensures project life will exceed the payback period
- Geothermal systems good match for facilities with both heating and cooling demands

Poultry Houses – Energy Efficiency Improvements

Project Details:

- EEI improvements to over 40 poultry houses in MS
- Upgrades include HVAC, controllers, windows, roofs, etc.

Project Development:

- Workshops held
 - Rural Business-Cooperative Service
 - MS Poultry Association and Resource Conservation and Development District
- District forms project team, comprised of experts in energy audits, economics, and engineering
- Applicant obtains bids for projects
- Project team completes
 - energy audit
 - technical report
 - application package

Poultry Houses – Energy Efficiency Improvements

Keys to Success:

- Workshops and outreach
- Project team
- Replicable project

Lessons Learned:

- Balance complete system (e.g. if replacing roof, can lighting be replaced at the same time?)

American Ag Fuels – Biodiesel Plant

Project Details:

- Plant produces 2 MGY of biodiesel
- Awarded 500K grant
- Located in Defiance, Ohio – Plant went online in May 2005, first batch produced in June 2005

Project Development:

- Applicant identified multiple markets for biodiesel in Northwest, Ohio
- Formed startup company, American Ag Fuels, LLC in 2004
- Identified project team, technical team, and consultant to conduct feasibility study
- LLC applied for 9006 grant in 2004

American Ag Fuels – Biodiesel Plant

Keys to Success:

- BioFuels Production Tax Credit
- Other state and federal incentives
- Identifying and obtaining commitments for reliable supply of feedstock
- Grant critical to AAF's ability to produce and sell biodiesel at a marketable price
- Market demand for biodiesel
- Quality control of product

Lessons Learned:

- Identification of multiple markets in nearby locations
- Project team members with stake in project helps to increase chance of success
- Meeting ASTM Fuel Standard Specification ensures market acceptance

Performance Benefits

- From 2003 to 2005, the program has awarded \$66.7 million in grant awards. The cumulative benefits from the FY03 to 05 funding levels are estimated to generate the equivalent of approximately 1,953 million kWh, which represents the energy needs of approximately 350,520 homes. It also will reduce the need for importing 6.62 million barrels of oil. The total estimated reduction in green house gas emissions as a result of funding is equivalent to 0.77 million metric tons.
- All estimates were derived from models developed for the Department of Agriculture by the Department of Energy

Farm Bill - Energy Title

Section 9008

- *Purpose: Support of research, development and demonstration on biobased products, biofuels, and biopower.*
- *Eligible Recipients: Institutions of Higher Learning; National Laboratory; Federal Research Agency; State Research Agency; Private Sector Entities and Nonprofit Organizations or a consortium of two or more of entities described above.*

Farm Bill - Energy Title ,Section 9008 – (Con't)

Cost Sharing:

Minimum of 20% Non-Federal

Budget Outlook:

Discretionary Funding – \$12 Million FY 2006

Farm Bill - Energy Title ,Section 9008 – (Con't)

Joint Solicitation:

USDA/DOE

Published on November 4, 2005

Pre-application window closed December 20, 2005

Value-Added Agricultural Products Market Development (VAPG) Grants

- *Purpose: To assist with marketing of value-added products.*
- *Eligible Recipients: Independent producers, agricultural produce group, farmer or rancher cooperative, or majority controlled producer-based business venture.*

*Value-Added Agricultural Product
Market Development Grants (VAPG) (Continued)*

- *Funding Levels for FY 2006:*

\$19.475 Million - Discretionary Funding

*Funding Limitation: Maximum Planning \$100,000;
Working Capital \$300,000.*

VAPG “Best Practices”

Kentucky

- *\$500,000 Grant for initial working capital/start-up Ethanol Facilities*
- *\$20 mgy capacity*
- *30 Jobs created*
- *Owned by 180 Farmers*

Rural Business Opportunity Grants (RBOG)

- *Eligibility: Public bodies, non-profits, Indian Tribes, and cooperatives*
- *Purposes: Technical assistance for business development and economic development planning.*

RBOG, “Best Practices”

- *\$49,900 Grant to finance a feasibility study in Montana.*
- *Complex to include ethanol plant, controlled feed-lot and anaerobic digester.*

Rural Business Enterprise Grants (RBEGr)

- *Eligibility: Public bodies, private non-profits, and Indian Tribes.*
- *Purposes: Establish revolving loan programs, technical assistance, working capital loans, equipment, real estate, and refinancing.*

RBEG, “Best Practices”

- *\$46,550 grant for a feasibility/marketing study.*
- *Development and marketing agriculture based engine oils.*

Rural Economic Development Loans & Grants (REDLG)

- *Eligibility: RUS electric and telephone borrowers (not delinquent on any Federal debt or in bankruptcy proceeding) and certain electric utilities that have prepaid.*
- *Purposes: Revolving loan programs, community development, technical assistance, construction, capital improvements, purchase of machinery and equipment, and working capital.*

REDLG, “Best Practices”

- *\$400,000 REDL to Iowa Electric Cooperative.*
- *Pass through loan to an LLC to assist financing of 40 mgy ethanol plant.*

Operational in April 2004.

Business and Industry (B&I) Guaranteed Loan Program

- *Eligibility: Individuals; corporations, cooperatives, partnerships, and other legal entities, public and private, organized and operated on a profit or nonprofit basis; and Federally recognized Indian tribal groups.*
- *Purposes: Loan proceeds may be used for working capital, machinery and equipment, buildings and real estate, and certain types of debt refinancing. The primary purpose is to create and maintain employment and improve the economic climate in rural communities.*

BEI “Best Practices”

- *\$10 million loan guarantee.*
- *Refinancing/expansion of Wisconsin ethanol plant to 30 mgy.*
- *Saved 35 jobs.*
- *Created 4 jobs.*
- *Increased market price of local corn – 20 cents/bushel.*

Definition of Rural Area

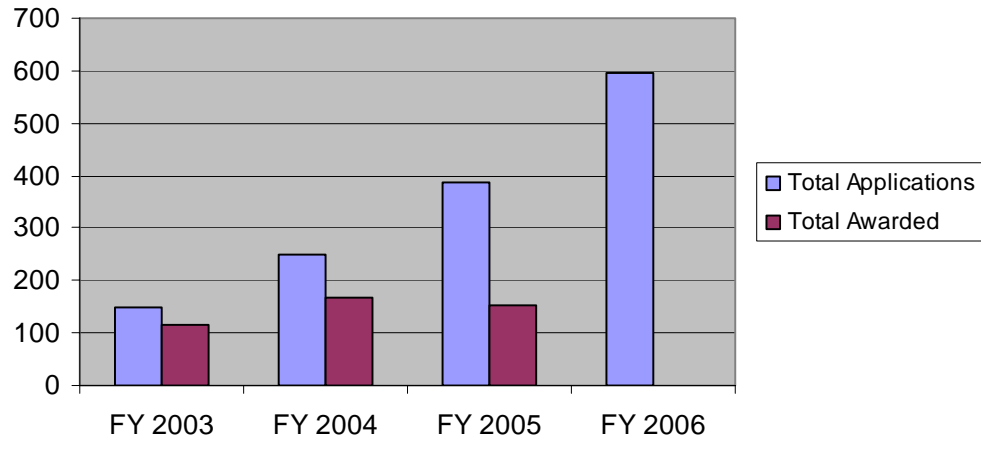
B&I, RBEG, RBOG

Any area other than a city or town that has a population of greater than 50,000 inhabitants and the urbanized area contiguous and adjacent to such city or town.

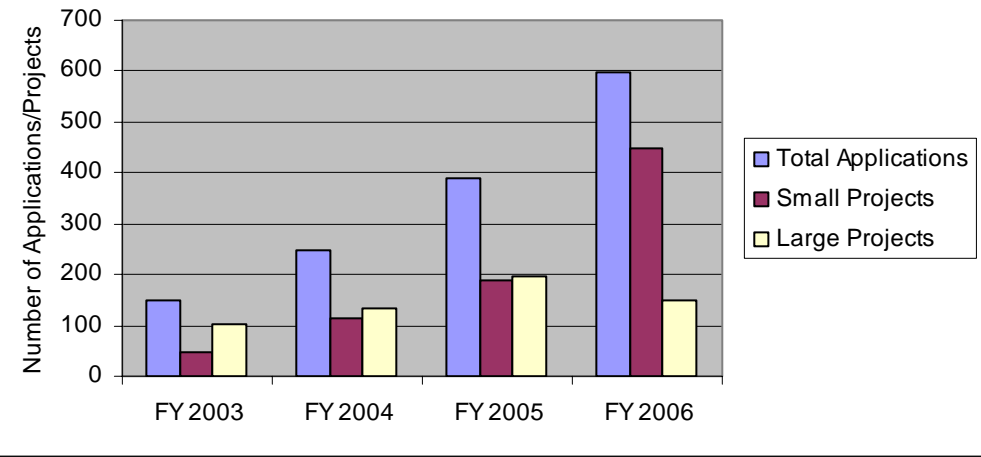
REDLG

Any area not included within boundaries of any urban area as defined by the Bureau of the Census.

Section 9006 Grant Applications, FY 03-06

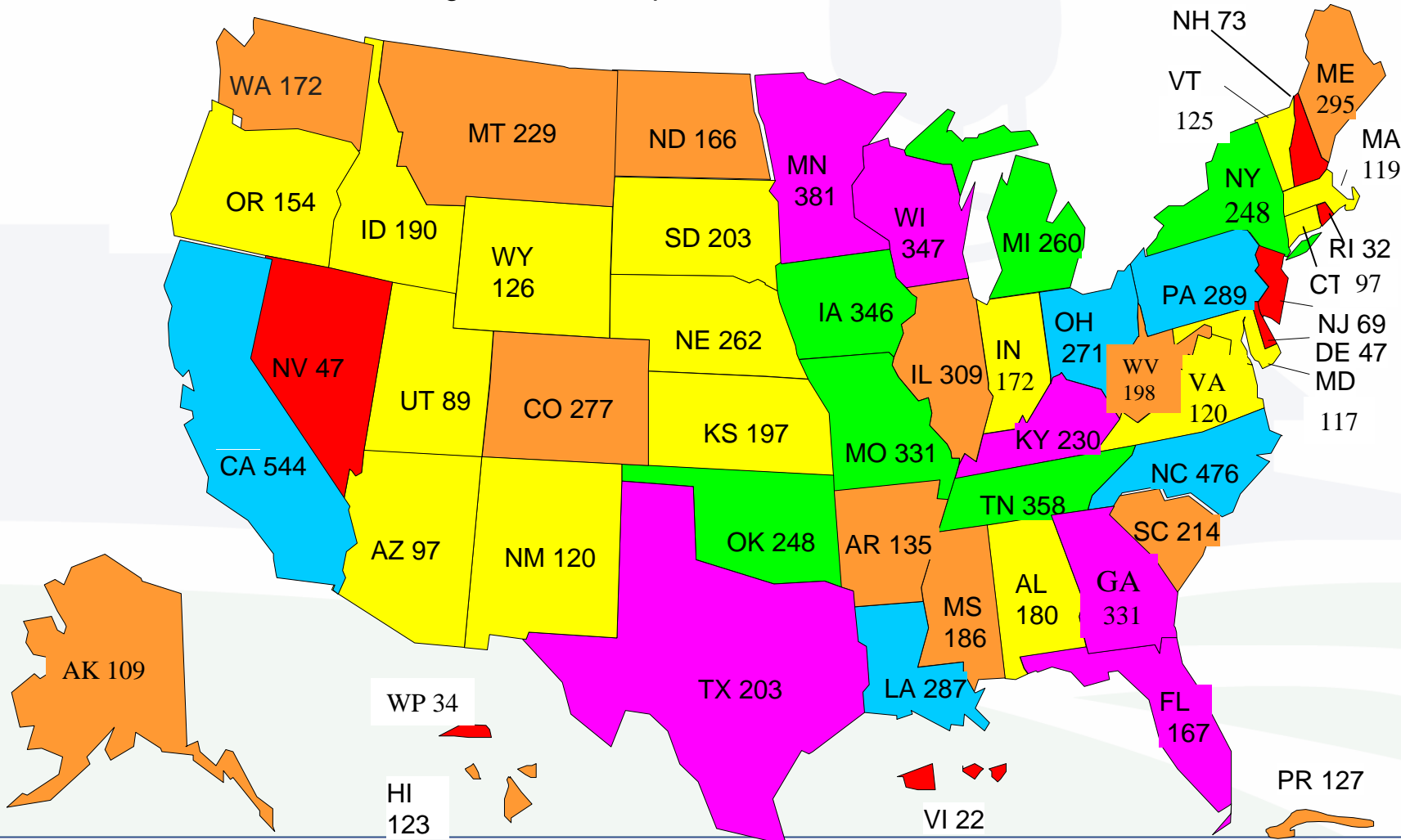


9006 Grant Applications: Small vs. Large Projects

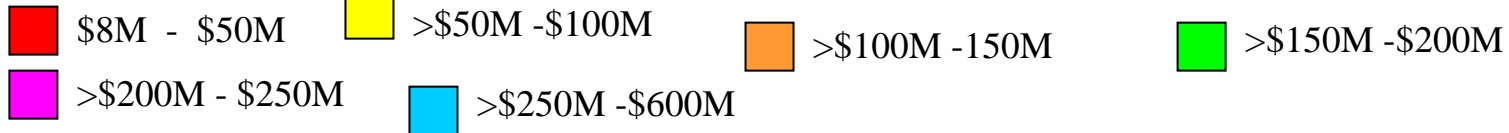


Business Programs Caseload

All Programs As of September 30, 2005



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Total Cases: 10,504

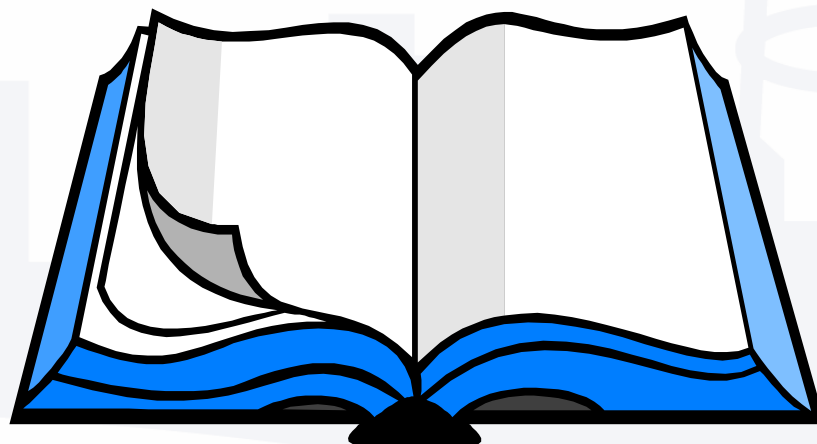
Total Funds: \$ 7,052,739,596

Program Delivery



- *National Office*
- *State Office*
- *Area / Local Offices*

How to Learn More About Business Programs



*State Office, or
www.rurdev.usda.gov/rbs/busp/bpdir.htm*

THE END