

Growing the Biobased Economy



Todd Campbell

USDA Rural Development

BRD TAC

NOV. 18, 2015

Ag Utilization Centers Mark 75 Years of Innovation

- The Center celebrate their 75th anniversaries during the remainder of 2015 and start of 2016:
 - [Western Regional Research Center](#) (WRRC) in Albany, CA
 - [Eastern Regional Research Center](#) (ERRC) in Wyndmoor, PA
 - [National Center for Agricultural Utilization Research](#) (NCAUR) in Peoria, IL
 - [Southern Regional Research Center](#) (SRRC) in New Orleans, LA
- The centers were established circa 1940 to create new, value-added uses for surpluses of region-specific crops and their byproducts
- Improved methods of ensuring product quality, detecting foodborne pathogens and creating biobased fuels are among technological innovations

National Institute for Food and Agriculture

- 53 awards totaling \$18 Million for 1890 Land-Grant Universities Research, Education and Extension Activities
 - Microbial Lipid Biotechnology, Biogas Production Teaching and Support, Renewable Biomass Food Packaging, [full list of awards here](#).
- \$4.9 Million awarded jointly from USDA/DOE for Bioenergy Research for fundamental investigations of biomass genomics, with the aim of harnessing non-food plant biomass for the production of fuels or renewable chemical feedstocks
 - Projects involving sorghum, switchgrass resistance genes, poplar defense hierarchy, shrub willow leaf rust, [Full list of awards here](#)

BioPreferred Program (9002)



- Strengthening markets for biobased products with ~2,200 products carrying BioPreferred label, Represents companies in over 40 countries on six continents; [Apply on BioPreferred.gov](https://www.biopreferred.gov)
- 97 designated product categories representing ~14,000 products included in mandatory federal purchasing initiative
- New paper published, commissioned by BioPreferred Program-
[*An Economic Impact Analysis of the U.S. Biobased Products Industry: A Report to the Congress of the United States of America*](#)
 - 4 million jobs and \$369 billion total added contribution to the U.S. Economy from the U.S. biobased products industry in 2013; direct, indirect, induced
 - Estimates that use of biobased products currently displaces about 300 million gallons of petroleum per year – equivalent to taking 200,000 cars off the road.

BioPreferred Program (9002)



- [An Economic Impact Analysis of the U.S. Biobased Products Industry: A Report to the Congress of the United States of America](#)
- Link to [one-page infographic](#)



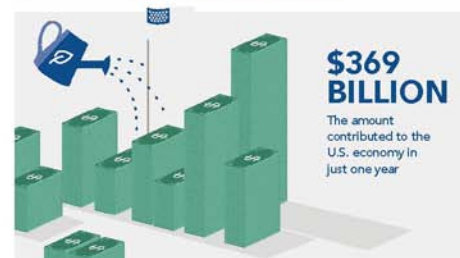
United States Department of Agriculture



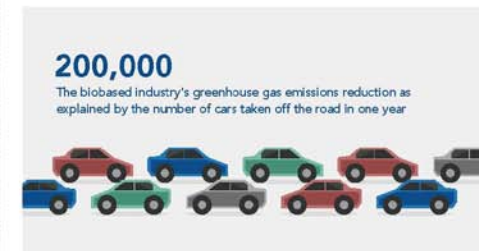
AMERICA'S BIOECONOMY GROWS OPPORTUNITIES

Thanks to the support of USDA's BioPreferred® program and the ingenuity of American manufacturers, the U.S. bioeconomy is thriving — supporting millions of jobs, driving economic growth, and expanding opportunities for biobased products from America's farms and forests.*

ECONOMIC IMPACT



COMMUNITY BENEFITS



“opportunity that can truly revolutionize ”

“We need to think more broadly, beyond (just) fuel and energy, that there is an amazing opportunity in chemicals, in enzymes, in bio-plastic materials, in forest products...It's the kind of opportunity that can truly revolutionize and change the American economy”

--Secretary Tom Vilsack, USDA

<http://www.reuters.com/article/2015/06/17/usa-usda-bioeconomy-idUSL1N0Z303L20150617/>



Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program (9003)

- This program provides loan guarantees for up to 80% of the total eligible project costs up to \$250 million.
- The [Updated Regulation](#) uses a 2-phase application process.
 - There are two application cycles each fiscal year. Applications may be submitted at any time.
 - Letter of Intent deadlines are September 1 and March 2.
 - Application deadlines are October 1 and April 1.
 - Applications will be evaluated for eligibility, technical and financial feasibility and sufficient project equity.
 - Applicants with the highest priority scoring may be invited to submit Phase 2.
- Phase 1 Applications Include: project summary, financial statements, financial model, feasibility study, business plan, etc.
- Phase 2 Applications Include: technical assessment/technical report, environmental assessment, lender's analysis/credit evaluation/supporting materials, etc.
- Current applications through new regulation are under review

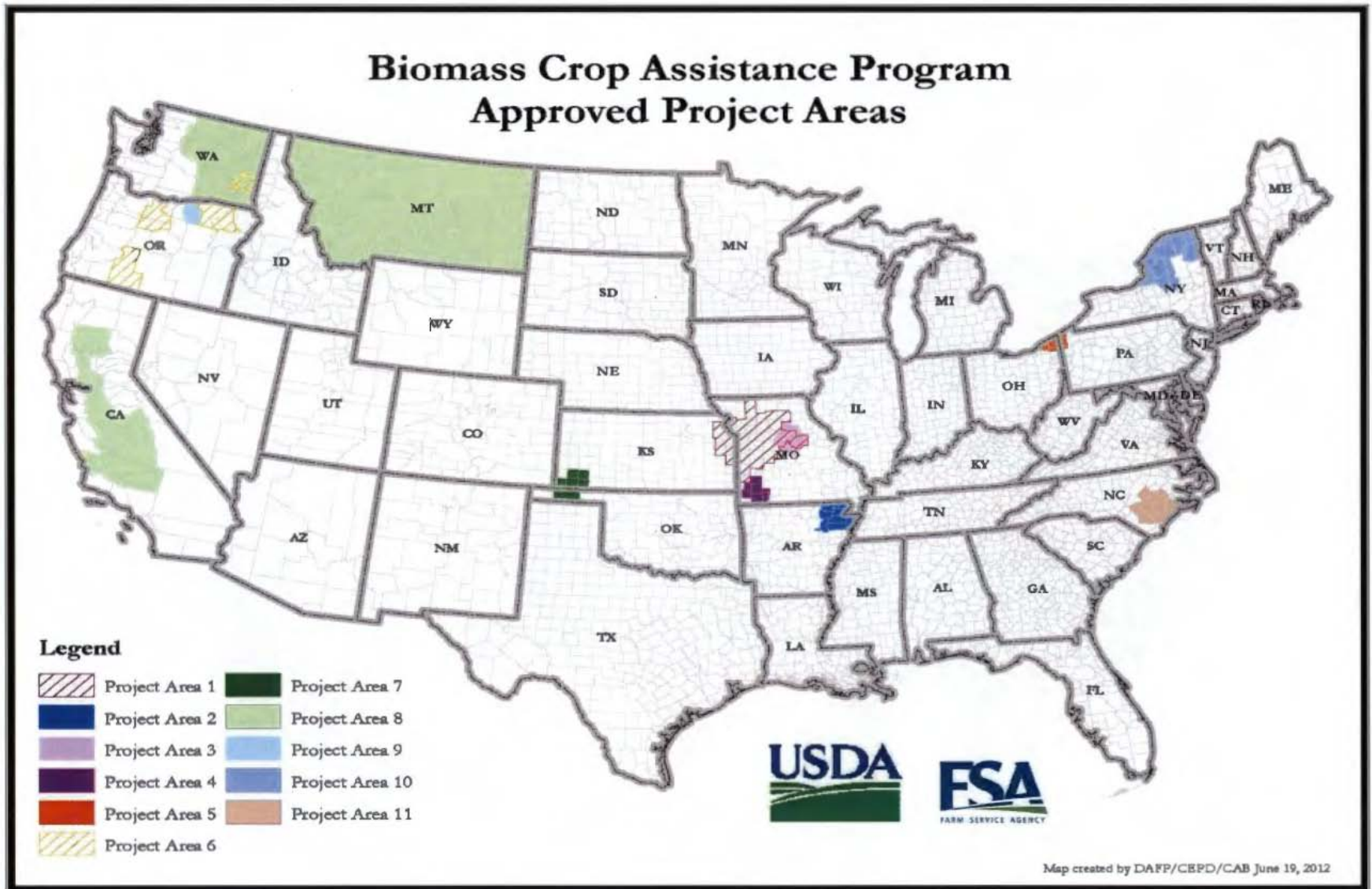
Biomass Crop Assistance Program (BCAP)

- **Matching payments (\$20/dry ton)** for delivery of eligible material to biomass conversion facilities.
 - \$10 million was obligated this summer for collection/harvest and delivery of up to 500,000 dry tons biomass materials to facilities through December 2015.
 - 52 Biomass Conversion Facilities were qualified to receive biomass deliveries.
Posted at www.fsa.usda.gov/bcap

Biomass Crop Assistance Program (BCAP)

- **Establishment and Annual Payments** to produce eligible biomass crops on contracts acres within BCAP Project areas.
- **NEW Project Area Request for Proposals (RFP):**
 - RFP for NEW Project Areas was posted August 19th on grants.gov, opportunity # CEPD-2016-22.
 - Longer submission period that runs through November 2015.
 - NEW crop establishment payment rate for perennial crops at \$500/acre or underserved farmers at \$750/acre.
- **Expansion of Existing Project Areas:**
 - Allocated \$7.6 million toward a project area producer signup expansion and enhancement in four EXISTING project in FY 2015.
 - BCAP's enrolled acres now total 49,000 acres located amongst 11 project areas in 12 States, covering 74 counties.

Biomass Crop Assistance Program (BCAP)

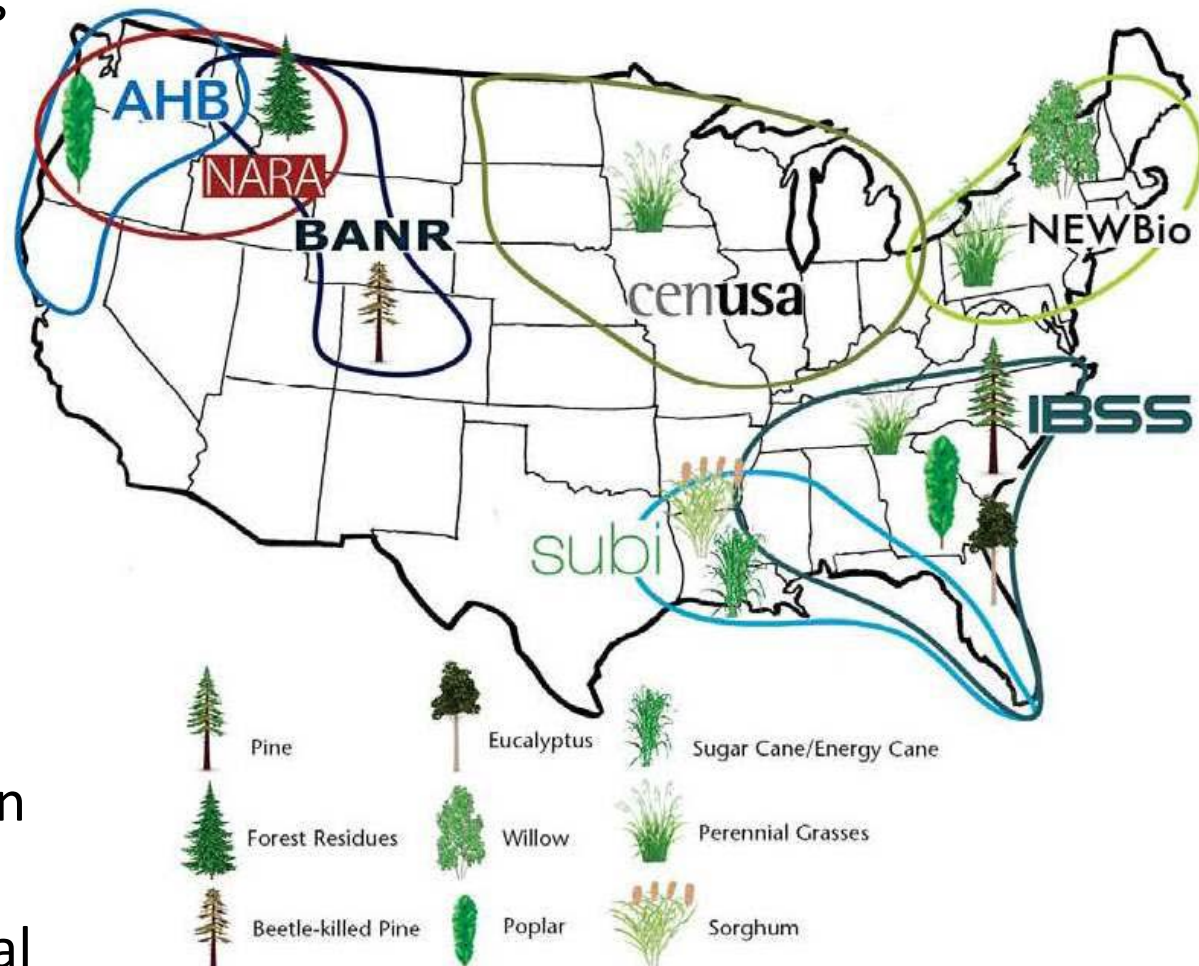


Other Title IX Programs

- To encourage advanced biofuel production, USDA has made payments through the [Advanced Biofuel Payment Program \(9005\)](#) to over 300 companies in 47 states; Yearly applications deadline is October 31
- Updated [Rural Energy for America Program \(REAP, 9007\)](#) Regulation in Dec 2014, made ~\$280 million available with Loan Guarantees up to \$25 million open year round; NOSA open for 2016 applications
 - 17 Biogas Systems funded in FY2015 for ~\$12.5M

AFRI Coordinated Agriculture Project Feedstocks & Locations

- 7 projects supporting research and development for regionally-based advanced biofuel industries.
- Projects address production, transportation logistics, conversion technologies, and associated impacts on agricultural and forestry markets, rural communities, and ecosystems



Biofuel Infrastructure Partnership (BIP)

- \$100M made available to boost infrastructure for renewable fuel use, seeking to double number of higher-blend renewable fuel retail pumps
 - More than 1:1 match investing a total of \$210 million to strengthen the rural economy
- 21 states participating, awarded available at: www.fsa.usda.gov/programs-and-services/energy-programs/bip/index
- Expected to expand infrastructure by nearly 5,000 pumps at over 1,400 stations

Biogas Opportunities Roadmap and Progress Report

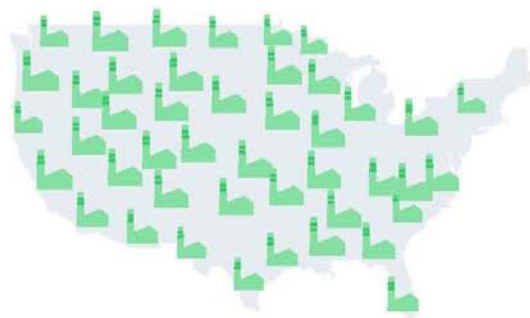
- Part of the *President's Climate Action Plan – Strategy to Reduce Methane Emissions*
- Deliverable in USDA's Partnership with the Innovation Center for U.S. Dairy supporting the dairy industry's goal of reducing GHG emissions 25 percent by 2020
- Working group members from USDA, USDOE, USEPA, dairy, biogas industry
- Useful links from the release in 2014:
 - [Biogas Opportunities Roadmap](#)
 - [Fact Sheet](#)
 - [Blog](#)
- Progress Report Due out in the near future

Biogas Opportunities Roadmap Findings

There are more than

2,000 sites

across the United States
that produce biogas,



and there is potential
for an additional

11,000

biogas systems.

If fully realized, these biogas systems
could produce enough energy
to power more than

3 million

American homes



and reduce methane emissions equivalent to up to

54 million

metric tons



of greenhouse gas emissions in **2030**,
the annual emissions of up to

11 million

passenger vehicles.

Progress Since the Biogas Opportunities Roadmap

- EPA published the proposed final rule for Renewable Fuel Standard Pathways II, which specifies that a certain portion of annual renewable fuel volume requirements must come from cellulosic advanced fuels, which can include biogas.
- DOE completed an update to the Resource Assessment on Renewable Hydrogen Potential from Biogas in the United States study, which includes total potential and net availability of methane in raw biogas from wastewater treatment plants; landfills; animal manure; and industrial, institutional, and commercial sources.
- USDA published the final rule for Rural Energy for America Program (REAP), developing a streamlined application and a new scoring criteria for energy generated or saved per REAP dollar requested, under which anaerobic digesters should score well.

Progress Since the Biogas Opportunities Roadmap

- DOE's Bioenergy Technologies Office Multi-Year Program Plan update expanded the definition of "biomass" to explicitly call out "wet waste" (e.g., biosolids), municipal solid waste, urban wood waste, and food waste, which are key resources in biogas Production.
- USDA Rural Utility Services updated its website announcing the availability of Federal Financing Bank loan guarantees to project developers of distributed generations projects that produce wholesale and retail electricity (with Power Purchase Agreements) to serve rural areas.
- The USDA published an interim final rule on 9003 Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program and a funding notice for the program to provide loan guarantees to eligible projects like commercial, municipal, and industrial biogas plant deployment.

Food Waste Reduction Goal

- USDA and EPA have joined with private sector, charitable organizations to set nation's first food waste reduction goals
 - Food loss and waste in the United States accounts for approximately 31 percent—or 133 billion pounds—of the overall food supply available to retailers and consumers and has far-reaching impacts on food security
 - An average family of four leaves more than two million calories, worth nearly \$1500, uneaten each year
 - Reduction Goal calls for a 50-percent reduction by 2030
 - More information at <http://www.usda.gov/oce/foodwaste/>

U.S. Tall Wood Building Prize Competition

- Announced the winners of the U.S. Tall Wood Building Prize Competition, in partnership with the Softwood Lumber Board and the Binational Softwood Lumber Council.
 - mass timber, composite wood technologies and innovative building techniques
 - The two winning development teams were granted a combined \$3 million in funding to support the development of tall wood demonstration projects in New York and Portland, Oregon.

USDA Institutes for BioManufacturing Innovation

- President's 2016 Budget included \$80 million for USDA public-private partnerships to establish two Innovation Institutes which engage industry, leverage funding, and facilitate tech transfer.

BioManufacturing

Building the scientific foundation, processes, and workforce capacity to move bioenergy and biobased product research from development to deployment and commercialization.

Nanocellulosics

Focused on utilization of cellulose to be turned into a renewable supply of industrial materials, ensuring that the United States is the leading global source of commercial cellulosic nanomaterials research, innovation, production, and commercialization.

- In line with the 2012 report by the President's Council of Advisors on Science and Technology, National Bioeconomy Blueprint
- Is there sufficient interest for inclusion in 2017?

A photograph of a dense bamboo forest. The bamboo stalks are tall, thin, and green, with some showing yellowish-brown nodes. They are arranged in a way that creates a natural corridor or path leading into the distance. The ground is covered with fallen bamboo leaves and some green undergrowth. The lighting is soft, suggesting a slightly overcast day or a shaded forest interior.

Thank you!

For more information on USDA Energy and
Bioeconomy Programs, visit:

www.usda.gov/energy
todd.campbell@osec.usda.gov