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Energy Provisions in the 2014 Farm Bill (P.L. 113-79): Status and Funding

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Summary

Title IX, the energy title of the 2014 farm bill (Agricultural Act of 2014; P.L. 113-79), contains authority for the energy programs administered by the U.S. Department of Agriculture (USDA). USDA energy programs have incentivized research, development, and adoption of renewable energy projects, including solar, wind, and anaerobic digesters. However, the primary focus of USDA energy programs has been to promote U.S. biofuels production and use—including corn starch-based ethanol (the predominant biofuel produced and consumed in the United States), cellulosic ethanol, and soybean-based biodiesel. The USDA energy programs via the farm bill are separate from the Renewable Fuel Standard (RFS) and tax incentives contained in separate energy and tax legislation.

Three farm bills have contained an energy title: the 2002 farm bill, the 2008 farm bill, and the 2014 farm bill. For all three farm bills, the major energy programs expire and lack baseline funding. The enacted 2014 farm bill extended most of the energy provisions of the 2008 farm bill with new funding authority, with the exception of the Rural Energy Self-Sufficiency Initiative, the Forest Biomass for Energy Program, the Biofuels Infrastructure Study, and the Renewable Fertilizer Study, which were either omitted or repealed. At issue for Congress is what oversight, programs, and initiatives, if any, an energy title under the forthcoming farm bill might support. The 2014 farm bill energy title provisions may be of interest during the upcoming farm bill debate, as Congress may decide to modify or reauthorize many of the programs.

The 2014 farm bill continued the attempt to refocus U.S. biofuels policy initiatives to favor non-corn feedstocks (e.g., cellulosic feedstocks). The most critical programs to this end are the Bioenergy Program for Advanced Biofuels, which pays producers for production of eligible advanced biofuels; the Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program (formerly Biorefinery Assistance Program), which assists in the development of new and emerging technologies for advanced biofuels; the Biomass Crop Assistance Program (BCAP), which assists farmers in developing nontraditional crops for use as feedstocks for the eventual production of cellulosic biofuels; and the Renewable Energy for America Program (REAP), which has funded a variety of biofuels-related projects. In addition, the 2014 farm bill included a new provision that precludes the use of REAP funding for any mechanism for dispensing energy at the retail level (e.g., blender pumps). Also, despite several amendments to the contrary, and its explicit exclusion from all financial support in the House-passed version of the 2014 farm bill (H.R. 2642), BCAP funding for the collection, harvest, storage, and transportation (CHST) component was retained in the 2014 farm bill. Finally, the 2014 farm bill added a new reporting requirement on energy use and efficiency at USDA facilities.

Over the five-year reauthorization period (FY2014-FY2018), the 2014 farm bill contained a total of $694 million in new mandatory funding and authorizes discretionary funding (i.e., subject to annual appropriations) of $765 million for the various farm bill renewable energy programs. This is a significant reduction from the 2008 farm bill, which had authorized slightly over $1 billion in mandatory funding over the five-year period of FY2008-FY2012, along with $1.7 billion in discretionary appropriations to Title IX energy programs. The mandatory funding has been the primary support for these programs, as appropriators have not provided funding for most of the discretionary authorizations.

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Overview and History

Agriculture-based renewable energy can take several forms, including biofuels such as corn-based ethanol or soy-based biodiesel, wind-driven turbines located on farmland or in rural areas, anaerobic digesters that convert animal waste into methane and electric power, or biomass harvested for burning as a processing fuel or to generate heat as part of an industrial activity.

Since the late 1970s, U.S. policymakers at both the federal and state levels have adopted a variety of incentives, regulations, and programs to encourage the production and use of agriculture-based renewable energy (mostly biofuels).[1] Over the years, the two most widely used biofuels—ethanol produced primarily from corn starch and biodiesel produced primarily from soybean oil—have received significant federal support in the form of tax incentives, loans and grants, and regulatory programs.[2] Many of these support programs originate in legislation outside of the farm bill. For instance, the Energy Tax Act of 1978 (P.L. 95-618) provided an exemption for ethanol from the excise tax on motor fuels. Congress subsequently provided a tax credit for blending ethanol with gasoline, which expired after 2011. By executive order[3] the Bioenergy Program was established in 1999 and in FY2001 began making payments from the U.S. Department of Agriculture's (USDA's) Commodity Credit Corporation (CCC)[4] to eligible producers of ethanol and biodiesel based on year-to-year production increases in these fuels. The Biomass Research and Development Act of 2000 (P.L. 106-224) directed USDA and the U.S. Department of Energy (DOE) to cooperate and coordinate research and development activities for biobased industrial products, including biofuels. The 2002 farm bill (P.L. 107-171) authorized several new biofuel programs and added an energy title, Title IX. The 2008 farm bill (P.L. 110-246) subsequently extended and expanded the programs promoting biofuels renewable energy, emphasizing particularly those utilizing biomass feedstock. Motivations cited for these legislative initiatives included energy security concerns, reduction of greenhouse gas emissions from traditional fossil fuels, and raising domestic demand for U.S.-produced farm products.

By FY2011, federal biofuels subsidies peaked at approximately $7.7 billion,[5] of which an estimated $5.7 billion was attributable to the Volumetric Ethanol Excise Tax Credit (VEETC) of $0.45/gallon. However, the VEETC expired at the end of FY2011, and federal subsidies fell to an estimated $1.3 billion in FY2012—consisting primarily of tax credits of approximately $1 billion for biodiesel producers. The remaining biofuels tax credits—for biodiesel and second generation (formerly cellulosic) biofuel, and including a tax credit for small producers are temporary incentives, currently scheduled to expire at the end of 2017. In recent years, these credits have since been extended several times, most recently in the Bipartisan Budget Act of 2018 (BBA; P.L. 115-123).[6] In addition to these types of tax incentives and the Renewable Fuel Standard (RFS)

[1] For a list of federal incentives in support of biofuels production, see CRS Report R42566, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*.

[2] See CRS Report R41282, *Agriculture-Based Biofuels: Overview and Emerging Issues*.

[3] The Bioenergy Program was initiated on August 12, 1999, by President Clinton's Executive Order 13134.

[4] The CCC is a U.S. government-owned and -operated corporation, created in 1933 with broad powers to support farm income and prices and to assist in the export of U.S. agricultural products. Toward this end, the CCC finances USDA's domestic farm commodity price and income support programs and certain export programs using its permanent authority to borrow up to $30 billion at any one time from the U.S. Treasury.

[5] CRS estimates based on ethanol production data, tax incentives, and congressional appropriations. These estimates do not account for the implicit subsidy inherent in biofuels import tariffs.

[6] For more information, see CRS Report R44990, *Energy Tax Provisions That Expired in 2017 ("Tax Extenders")*, by Molly F. Sherlock, Donald J. Marples, and Margot L. Crandall-Hollick, and CRS Report R44677, *Tax Provisions that Expired in 2016 ("Tax Extenders")*, by Molly F. Sherlock.

that mandates a minimum level of renewable fuel usage, the provisions of Title IX of the 2014 farm bill, the Agricultural Act of 2014 (P.L. 113-79), represents a significant source of federal support for biofuels production and use in the United States.

Title IX of the 2014 farm bill continued long-standing congressional support for the production of renewable energy from agriculturally sourced materials. This report focuses on those policies contained in the 2014 farm bill that support agriculture-based renewable energy, especially biofuels. The introductory sections of this report briefly describe how USDA bioenergy policies evolved and how they fit into the larger context of U.S. biofuels policy. Then, each of the bioenergy provisions of the 2014 farm bill are defined in terms of their function, goals, administration, funding, and implementation status.

In an appendix at the end of this report, **Table A-1** presents data on 2014 farm bill budgetary authority for energy provisions, while **Table A-2** presents the original budget authority for Title IX programs under the previous 2008 farm bill. A third table (**Table A-3**) provides a side-by-side comparison of Title IX energy-related provisions for current versus previous law.

Renewable energy production plays a key role not just in agricultural policy, but also in energy, tax, and environmental policy. As a result, many of the federal programs that support renewable energy production in general, and agriculture-based energy production in particular, are outside the purview of USDA and have origins outside of omnibus farm bill legislation. For example, the three principal federal biofuels policies of the past decade were all established outside of farm bills

- The Renewable Fuel Standard (RFS) mandates an increasing volume of biofuels use and has its origins in the Energy Policy Act of 2005 (P.L. 109-58). The RFS was expanded in the Energy Independence and Security Act of 2007 (EISA; P.L. 110-140) and divided into four distinct, but nested categories—total, advanced, cellulosic, and biodiesel—each with its own mandated volume.[7]
- The volumetric ethanol excise tax credit (VEETC), originally established in the American Jobs Creation Act of 2004 (P.L. 108-357), provided a tax credit that varied in value over the years, which amounted to $0.45 per gallon of pure ethanol blended with gasoline when it expired on December 31, 2011.[8]
- The ethanol import tariff (a most-favored-nation duty of $0.54 per gallon) was intended to offset the blending tax credit and was originally established by the Omnibus Reconciliation Act of 1980 (P.L. 96-499). The ethanol import tariff also expired on December 31, 2011.

In addition to the RFS, VEETC, and ethanol import tariff, several other tax credits that originated outside of farm bills were available for biodiesel production as well as for small producers (less than 60 million gallons per year per plant) of ethanol and biodiesel. A substantial number of federal programs also support renewable energy sources other than biofuels.[9] In addition to federal programs, many states offer additional support to biofuels producers, blenders, and consumers.[10]

[7] See CRS Report R43325, *The Renewable Fuel Standard (RFS): An Overview*, by Kelsi Bracmort.

[8] For more information, see CRS Report R41282, *Agriculture-Based Biofuels: Overview and Emerging Issues*.

[9] For a complete listing of federal programs that support all types of renewable energy, see CRS Report R40913, *Renewable Energy and Energy Efficiency Incentives: A Summary of Federal Programs*, by Lynn J. Cunningham.

[10] For information on state programs, see "Database of State Incentives for Renewables & Efficiency (DSIRE)," at http://www.dsireusa.org/.

An awareness of the non-USDA federal programs is important for appreciating the role envisioned for the energy title of the 2014 farm bill, which was designed to provide incentives for the research and development of new agriculture-based renewable fuels, especially second-generation biofuels (those based on non-food crop biomass such as cellulose and algae), and to expand their distribution and use. A summary of the evolution of these programs follows.

2002 Farm Bill—First Energy Title

The 2002 farm bill (Farm Security and Rural Investment Act of 2002; P.L. 107-171) was the first omnibus farm bill to explicitly include an energy title (Title IX). The energy title authorized grants, loans, and loan guarantees to foster research on agriculture-based renewable energy, to share development risk and to promote the adoption of renewable energy systems.[11] Since enactment of the 2002 farm bill, interest in renewable energy has grown rapidly, due in large part to periods of steep increases in domestic and international petroleum prices and a dramatic acceleration in domestic biofuels production (primarily corn-based ethanol).

2008 Farm Bill—Refocus on Non-Corn-Based Biofuels

Annual U.S. ethanol production expanded rapidly between 2002 and 2007, rising from approximately 2 billion gallons to over 6.5 billion gallons during that period.[12] Similarly, corn use for ethanol grew from an 11% share of the U.S. corn crop in 2002 to an estimated 23% share of the 2007 corn crop.[13] During the 2008 farm bill debate, projections had ethanol's corn-use share rising rapidly, sparking concerns about unintended consequences of the policy-driven expansion of U.S. corn ethanol production. Dedicating an increasing share of the U.S. corn harvest to ethanol production evoked fears of higher prices for all grains and oilseeds that compete for the same land, which could lead to higher livestock feed costs, higher food prices, and lower U.S. agricultural exports. In addition, several environmental concerns emerged regarding the expansion of corn production onto nontraditional lands, including native grass and prairie land. In response, policymakers sought to refocus biofuels policy initiatives in the 2008 farm bill (the Food, Conservation, and Energy Act of 2008; P.L. 110-246) in favor of non-corn starch feedstock, especially cellulosic-based feedstock, by introducing a number of programs aimed at facilitating the production and use of bioenergy from nonfood feedstock, mainly biomass.

Renewable energy policy in the 2008 farm bill became law six months after the enactment of the EISA. A key component of EISA was a significant expansion of the RFS, which in part mandates the increasing use of "advanced biofuels" (i.e., non-corn starch biofuels), whose minimum use was scheduled to increase from zero gallons in 2008 to 21 billion gallons by 2022.[14] The energy provisions of the 2008 farm– bill were intended to reinforce EISA's program goals via a further refocusing of federal incentives toward non-corn sources of renewable energy.

[11] For an overview of the 2002 farm bill's energy title, see CRS Report RL33037, *Previewing a 2007 Farm Bill*.

[12] U.S. Energy Information Administration, *Short-Term Energy Outlook*, 2017. For a discussion of the rapid growth of the U.S. biofuels sector, see CRS Report R41282, *Agriculture-Based Biofuels: Overview and Emerging Issues*.

[13] U.S. Department of Energy, *Maps and Data - U.S. Total Corn Production and Corn Used for Fuel Ethanol Production*, September 2016.

[14] 42 U.S.C. §7545(o).

2014 Farm Bill—Extends Most Programs with New Funding

All of the major energy programs from the 2008 farm bill expired at the end of FY2013 and lacked baseline funding going forward. The enacted 2014 farm bill (P.L. 113-79) extended most of the renewable energy provisions of the 2008 farm bill and provided new mandatory funding, with some notable exceptions. Again, most of these 2014 farm bill energy programs lack a mandatory funding baseline going forward beyond FY2018.[15] Key energy-related provisions in the 2014 farm bill include

- Section 9002, which extended the Biobased Markets Program that promotes biobased products through a federal purchasing requirement and a labeling initiative;
- Section 9003, which extended the Biorefinery Assistance Program with new funding and renamed as the Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program;
- Section 9004, which extended the Repowering Assistance Program with new funding;
- Section 9005, which extended the Bioenergy Program for Advanced Biofuels with new funding;
- Section 9006, which extended the Biodiesel Fuel Education Program with new funding;
- Section 9007, which extended the Renewable Energy for America Program (REAP)—which provides support for rural energy efficiency and self-sufficiency and biofuels marketing infrastructure—with new funding, but included a new provision which precludes the use of REAP funding for any mechanism for dispensing energy at the retail level (for example, blender pumps);
- Section 9008, which extended the Biomass Research and Development Initiative (BRDI) with new funding for biofuels research programs within USDA and DOE;
- Section 9009, which extended the sugar-to-ethanol Feedstock Flexibility Program;
- Section 9010, which extended the Biomass Crop Assistance Program (BCAP), including the collection, harvesting, storage, and transportation (CHST) component designed to incentivize the production of cellulosic ethanol feedstock;
- Section 9011, which repealed the Forest Biomass for Energy Program;
- Section 9012, which extended the Community Wood Energy Program with new funding;
- Section 9013, which repealed the Biofuels Infrastructure Study;
- Section 9014, which repealed the Renewable Fertilizer Study;
- Section 9015, which added a new reporting requirement on energy use and efficiency at USDA facilities;
- Section 7212, which repealed the Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative; and

[15] For more information, see CRS Report R44758, *Farm Bill Programs Without a Budget Baseline Beyond FY2018*, by Jim Monke.

- Section 7526, which reauthorized, with new funding, the Sun Grant Initiative programs that provide funding for competitive grants and coordinate research on advanced biofuels at land-grant universities and federally funded laboratories.

The 2014 farm bill excluded the Rural Energy Self-Sufficiency Initiative of the 2008 farm bill. Each of the above-cited programs is described in more detail in the section below entitled "Major Energy Provisions in the 2014 Farm Bill."

Funding for Agriculture-Based Energy Programs

In general, two types of funding are authorized by Congress in a farm bill—mandatory and discretionary. Some farm bill programs identified as receiving mandatory funds (including most of the bioenergy programs) are automatically funded at levels "authorized" in the farm bill unless Congress limits funding to a lower amount through the appropriations or legislative process.[16] For many of these programs, mandatory funding is provided through the borrowing authority of USDA's Commodity Credit Corporation (CCC).[17] The farm bill may also specify some discretionary funding as "authorized to be appropriated"—such discretionary funding is actually determined each year through the annual appropriations process and may or may not reflect the funding level suggested in the authorizing legislation.

Funding Under the 2008 Farm Bill

The 2008 farm bill authorized slightly over $1 billion in mandatory funding and $1.1 billion in discretionary appropriations to Title IX energy programs for FY2008-FY2012 (**Table A-2**). Mandatory authorizations included $320 million to the Biorefinery Assistance Program, $300 million to the Bioenergy Program for Advanced Biofuels, and $255 million to the Rural Energy for America Program (REAP). The Biomass Crop Assistance Program (BCAP) was authorized to receive such sums as necessary (i.e., funding is open-ended and depends on program participation); however, limits were later set on BCAP outlays under the annual appropriations process beginning in FY2010.[18]

The $1.1 billion of discretionary funding authorization included $600 million for the Biorefinery Assistance Program. Authorized discretionary appropriations included $100 million for both the Bioenergy Program for Advanced Biofuels and REAP. However, actual discretionary appropriations of $106 million through FY2012 to all Title IX energy programs were substantially below authorized levels.

As regards mandatory funding, all of the bioenergy provisions of Title IX—with the exception of Section 9010, the Feedstock Flexibility Program for Bioenergy Producers, which is authorized indefinitely—had mandatory funding only for the life of the 2008 farm bill, FY2008 through FY2012. As a result, all of the bioenergy provisions in Title IX of the 2008 farm bill, with the

[16] Mandatory funding remains subject to sequestration under the Budget Control Act of 2011 (P.L. 112-25). Mandatory funding may also be reduced by appropriation acts via Changes in Mandatory Program Spending (CHIMPS).

[17] The CCC is the funding mechanism for the mandatory payments that are administered by various agencies of USDA, including all of the farm commodity price and income support programs and selected conservation programs. For more information on the CCC, see CRS Report R44606, *The Commodity Credit Corporation: In Brief*, by Megan Stubbs. For more information on mandatory versus discretionary authorizations, CHIMPS, and sequestration, see CRS Report R44588, *Agriculture and Related Agencies: FY2017 Appropriations*, coordinated by Jim Monke.

[18] See CRS Report R41296, *Biomass Crop Assistance Program (BCAP): Status and Issues*, by Mark A. McMinimy.

exception of the Feedstock Flexibility Program for Bioenergy Producers (§9010), expired on September 30, 2012.[19]

Funding Under Continuing Resolutions for FY2013

The 112th Congress did not complete action on any of the regular FY2013 appropriations bills during 2012. Instead, a continuing resolution (CR) for the first half of FY2013 (P.L. 112-175) was signed into law on September 28, 2012.[20] This was followed by a second CR to provide appropriations for the second half of FY2013 (P.L. 113-6).[21] The Rural Energy for America Program was the sole Title IX bioenergy program that received an appropriation of discretionary funds ($3.4 million) in FY2013.

Funding Under ATRA—The 2008 Farm Bill Extension

Many of the 2008 farm bill programs were extended through September 30, 2013, by Section 701 of the American Taxpayer Relief Act of 2012 (ATRA; P.L. 112-240) signed into law by President Obama on January 2, 2013. Under ATRA, discretionary funding was authorized to be appropriated at the rate that programs were funded under the 2008 farm bill.

Funding Under the 2014 Farm Bill

The five-year reauthorization period (FY2014-FY2018) of the 2014 farm bill (P.L. 113-79) contained a total of $694 million in new mandatory funding and authorized $765 million to be appropriated for the various farm bill renewable energy programs (**Table A-1**). Details of the actual funding levels provided in FY2014-FY2016 appropriations bills are provided in the discussion of individual provisions below and are summarized in the appendix tables. Under the 2014 farm bill, Congress has acted through annual appropriations bills to lower the amount of mandatory funding available to four of these programs (§9003, §9004, §9005, and §9010) and has not appropriated discretionary funding for most of these programs.

Major Energy Provisions in the 2014 Farm Bill

What follows is a summary of the bioenergy-related authorities found in the 2014 farm bill, including (where applicable) a brief description of each program, funding levels, and the status of program implementation, including any noteworthy changes made by the 2014 farm bill.

Like the two preceding farm bills, the 2014 farm bill (P.L. 113-79) contained a distinct energy title (Title IX) that extends many of the previous bioenergy programs.[22] Four previous provisions are omitted or repealed, and a new provision, Section 9015, was added to require USDA to submit a report to the House and Senate Agriculture Committees on energy use and energy efficiency projects at USDA facilities. Two bioenergy-related provisions in the Research Title (Title VII)—one extended, one repealed—are also included in the following discussion.

[19] For more information, see CRS Report R42442, *Expiration and Extension of the 2008 Farm Bill*.

[20] See out-of-print CRS Report R42782, *FY2013 Continuing Resolutions: Analysis of Components and Congressional Action*, available upon request for congressional staff from the author.

[21] Consolidated and Further Continuing Appropriations Act, 2013, P.L. 113-6, March 26, 2013.

[22] For a side-by-side comparison of previous law with the energy provisions of the 2014 farm bill, see **Table A-3** at the end of this report.

Title IX—Energy Provisions

Section 9001: Definitions

The 2014 farm bill made four substantive modifications to bioenergy related definitions as follows (7 U.S.C. §8101):

1. **"biobased product"—**similar to prior law except for the explicit inclusion of forestry materials that meet biobased content requirements, notwithstanding the market share the product holds, the age of the product, or whether the market for the product is new or emerging;
2. **"forest product"**—defined as a product made from materials derived from the practice of forestry or the management of growing timber, including pulp, paper, paperboard, pellets, lumber, and wood products, and any recycled products derived from forest materials;
3. **"renewable chemical"—**defined as a monomer, polymer, plastic, formulated product, or chemical substance produced from renewable biomass; and
4. **"renewable energy system"—**defined as a system that produces energy from a renewable source, including distribution components necessary to move energy produced by such a system to the initial point of sale, but not any mechanism for dispensing energy at retail (e.g., a blender pump).

The first three modifications were designed to expand access to federal support for renewable energy to forestry products and renewable chemicals. The new definition for renewable energy systems was intended to prohibit REAP funds from being used for blender pumps.

Section 9002: Biobased Markets Program

Administered by: Assistant Secretary for Administration, USDA.[23]

Program Overview: The Biobased Markets Program was originally established under the 2002 farm bill as a federal procurement preference program that required federal agencies to purchase biobased products under certain conditions (7 U.S.C. §8102). The 2008 farm bill renamed the federal biobased procurements preference program as the Biobased Markets Program. USDA refers to the program as the BioPreferred® Program.[24] The BioPreferred® Program promotes biobased products—those derived from marine and forestry materials—through two initiatives: (1) a mandatory purchasing requirement for federal agencies and their contractors and (2) a voluntary labeling initiative for biobased products. Products that meet the minimum biobased content criteria may display the USDA Certified Biobased Product label.[25]

Under the Biobased Markets Program, federal agencies and their contractors are generally required to purchase biobased products from 97 categories of goods—among which are cleaners, carpets, lubricants, office supplies, and paints—when an agency procures $10,000 or more worth of an item within these categories during the course of a fiscal year, or where the quantity of such

[23] The official USDA biobased markets program website is at http://www.biopreferred.gov/.

[24] OEPNU, OCE, USDA, *Metrics to Support Informed Decision Making for Consumers of Biobased Products*, by Marvin Duncan, Barbara C. Lippiatt, Zia Haq, Michael Wang, and Roger Conway, AIB No. 803, October 2008.

[25] For policies and laws, see http://www.biopreferred.gov/BioPreferred/faces/pages/PoliciesAndLaws.xhtml.

items or of functionally equivalent items purchased during the preceding fiscal year was $10,000 or more.[26]

Changes in 2014 Farm Bill: The 2014 farm bill (P.L. 113-79) extended the Biobased Markets Program through FY2018 while adding several new implementation requirements, including reporting of quantities and types of biobased purchases by federal agencies with a focus on biobased content requirements (explicitly including forest products); mandating (within one year of enactment) designation of intermediate ingredients or feedstocks and assembled and finished biobased products according to guidelines; adding auditing and compliance activities to ensure proper use of biobased labeling; mandating a study and report by USDA to assess the economic impact of the biobased product industry (due 180 days after enactment); and encouraging expedited coordination, review, and approval (with appropriate technical assistance) of forest-related biobased products. USDA issued two final rules implementing these changes on June 15, 2015: 7 C.F.R. 3201 on designating biobased products for federal procurement and 7 C.F.R. 3202 on voluntary labeling for biobased products.

Funding: The 2014 farm bill authorized mandatory CCC funding of $3 million for each of FY2014-FY2018 for biobased products testing and labeling. Discretionary funding of $2 million was authorized to be appropriated for each of FY2014-FY2018. However, through FY2018 no discretionary funding has ever been appropriated for the Biobased Markets Program. This compares with mandatory funding authorized by the 2008 farm bill of $9 million—including $1 million for FY2008 and $2 million for each of FY2009-FY2012—for biobased products testing and labeling. In the 2008 farm bill, discretionary funding of $2 million was authorized to be appropriated for each of FY2009-FY2012. The program went unfunded in FY2013, as ATRA provided no mandatory funding for it. Discretionary funds of $2 million were authorized to be appropriated, but no appropriations were provided under either of the CRs for FY2013 (P.L. 112-175 or P.L. 113-6).

Section 9003: Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program

Administered by: Rural Business and Cooperative Service, Rural Development Agency (RD), USDA in consultation with DOE.

Program Overview: Originally called the Biorefinery Assistance Program (BAP) as authorized in the 2008 farm bill, this program assists in the development of new and emerging technologies for advanced biofuels.[27] Competitive grants and loan guarantees are available for construction and/or retrofitting of demonstration-scale biorefineries to demonstrate the commercial viability of one or more processes for converting renewable biomass to advanced biofuels. Biorefinery grants can provide for up to 30% of total project costs. Each loan guarantee is limited to $250 million or 80% of project cost (7 U.S.C. §8103). Mandatory funds are used for the loan guarantee portion of BAP, whereas discretionary appropriations are to be used to fund grants.[28] However, since Congress never appropriated any discretionary funds for BAP during the life of the 2008 farm

[26] For more detail and exceptions to this requirement, see http://www.ecfr.gov/cgi-bin/text-idx?SID=f511776b8ee3c0092343d0e8736f5224&mc=true&node=se7.15.3201_13&rgn=div8.

[27] For more program information, see Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program, Business and Cooperative Programs (BCP), Rural Development (RD), USDA, at https://www.rd.usda.gov/programs-services/biorefinery-renewable-chemical-and-biobased-product-manufacturing-assistance.

[28] Based on information received by CRS from Kelly Oehler, Branch Chief, Energy Division, RD, USDA.

bill, USDA has only moved forward with the loan guarantee portion of BAP. Rural Development administers the program under 7 C.F.R. 4279, Subpart C, and 7 C.F.R. 4287, Part D.

For loan guarantees, project lenders (not prospective borrowers) must submit the application.[29] Each loan guarantee application undergoes at least three rounds of review within USDA, including review by the Rural Development Agency, USDA; the National Renewable Energy Laboratory (NREL), DOE; and the Office of the Chief Economist (OCE), USDA.

Changes in 2014 Farm Bill: Renamed the Biorefinery Assistance Program as the Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program. Funding for grants is eliminated. The program assists in the development of new and emerging technologies for advanced biofuels, renewable chemicals, and biobased products. The lender or borrower may submit a letter of intent to apply for the loan guarantee. Also, P.L. 113-79 directs USDA to ensure diversity in the types of projects approved and caps the funds used for loan guarantees to promote biobased product manufacturing at 15% of the total available mandatory funds.

Funding: Under the 2014 farm bill, mandatory CCC funding of $100 million in FY2014 and $50 million each for FY2015 and FY2016 (to remain available until expended) was authorized to support making loan guarantees. Thus, there is no new baseline funding after FY2016 except for any carryover. The FY2014 appropriations act (P.L. 113-76) rescinded $40.7 million of funds available, while the FY2015, FY2016, and FY2017 appropriations acts (P.L. 113-235, P.L. 114-113, and P.L. 115-31) limited funding to $30 million, $27 million, and $151 million, respectively.[30] Discretionary funding of $75 million annually is authorized for FY2014-FY2018, but no discretionary funds have been appropriated through FY2018. Under the 2008 farm bill, mandatory CCC funding amounted to $75 million for FY2009, $245 million for FY2010 (to remain available until expended), and $0 for FY2011 and FY2012, with any mandatory funding unspent from the FY2010 allocation of $245 million to remain available through FY2013. Discretionary funding of $150 million annually was authorized for FY2009-FY2013 for grants under the 2008 farm bill and the ATRA extension. However, no discretionary funding was appropriated for BAP through FY2013.

Section 9004: Repowering Assistance Program (RAP)

Administered by: Rural Business and Cooperative Service, RD, USDA.

Program Overview: The Repowering Assistance Program (RAP) was originally established under the 2002 farm bill as a grant program to help finance the cost of developing and constructing bio-refineries and biofuels production plants to carry out projects to demonstrate the commercial viability of converting biomass to fuels or chemicals. The 2008 farm bill altered RAP's orientation to focus on converting fossil fuel-burning plants to biomass or some other renewable fuel source for processing energy.

RAP makes payments to eligible biorefineries (i.e., those in existence on the date of enactment of the 2008 farm bill, June 18, 2008) to encourage the use of renewable biomass as a replacement for fossil fuels used to provide heat for processing or power in the operation of these eligible biorefineries.[31] Not more than 5% of the funds shall be made available to eligible producers with

[29] More information on the BAP loan guarantee applications is available at https://www.ecfr.gov/cgi-bin/text-idx?SID=053b4252b720dd2ab341a62759c8032c&pitd=20150624&node=20150624y1.19.

[30] §9003 was subject to changes in mandatory spending (CHIMPS) of $20 million for FY2017.

[31] For more program information, see "Section 9004: Repowering Assistance Program," BCP, RD, USDA, at https://www.rd.usda.gov/programs-services/repowering-assistance-program.

a refining capacity exceeding 150 million gallons of advanced biofuel per year.[32] Individual project awards are limited to $5 million or 50% of total eligible project costs, whichever is less (7 C.F.R., Part 4288, Subpart A).

Changes in 2014 Farm Bill: RAP was extended without changes to program implementation other than new funding levels.

Funding: The 2014 farm bill authorized mandatory CCC funding of $12 million for FY2014 to remain available until expended (i.e., no new baseline funding after FY2014). The FY2015 appropriations act reduced available funds by $8 million. Discretionary funding of $10 million annually for FY2014-FY2018 was authorized to be appropriated, but through FY2018 no discretionary funding had been appropriated. The 2008 farm bill authorized mandatory CCC funding of $35 million for FY2009 to remain available until expended. Discretionary funding of $15 million annually for FY2009-FY2013 was authorized to be appropriated under the 2008 farm bill and the ATRA extension; however, during this period the only appropriation was $15 million in FY2010. No new mandatory funding was included for RAP under the ATRA farm bill extension; however, any mandatory funding unspent from the FY2009 allocation of $35 million remained available through FY2013.

Section 9005: Bioenergy Program for Advanced Biofuels

Administered by: Rural Business and Cooperative Service, RD, USDA.

Program Overview: Originally created by a 1999 executive order during the Clinton Administration, the bioenergy program provided mandatory CCC incentive payments to biofuels producers based on year-to-year increases in the quantity of biofuel produced. The 2002 farm bill provided mandatory funding for the program of $150 million annually for FY2002 through FY2006, but the program lapsed without funding in FY2007. The 2008 farm bill established a new Bioenergy Program for Advanced Biofuels to support and expand production of advanced biofuels—that is, fuel derived from renewable biomass other than corn kernel starch—under which USDA would enter into contracts with advanced biofuel producers to pay them for production of eligible advanced biofuels.[33] The policy goal is to create long-term, sustained increases in advanced biofuels production (7 U.S.C. §8105). Payments are of two types: one based on actual production, and a second based on incremental production increases. Not more than 5% of the funds in any year can go to facilities with total refining capacity exceeding 150 million gallons per year (7 C.F.R. Part 4288, Subpart B).

Changes in 2014 Farm Bill: Extended the Bioenergy Program for Advanced Biofuels through FY2018 without changes to program implementation other than new funding levels.

Funding: The 2014 farm bill authorized mandatory CCC funding of $15 million for each of FY2014-FY2018 to remain available until expended. The FY2014 appropriations act reduced funds available by $8 million in that year. Discretionary funding of $20 million annually for FY2014-FY2018 was authorized to be appropriated under the 2014 farm bill. However, no discretionary funding has been appropriated for the Bioenergy Program for Advanced Biofuels program through FY2018. The 2008 farm bill authorized mandatory CCC funding of $55 million for 2009, $55 million for FY2010, $85 million for FY2011, and $105 million for FY2012 to remain available until expended. Subsequently, the final FY2012 agriculture appropriations act (P.L. 112-55) limited mandatory spending to $65 million. Discretionary funding of $25 million

[32] 7 C.F.R. §4288.131.

[33] For more program information, see the "Advanced Biofuel Payment Program," RD, USDA at https://www.rd.usda.gov/programs-services/advanced-biofuel-payment-program.

annually for FY2009-FY2013 was authorized to be appropriated under the 2008 farm bill and the ATRA extension.

Section 9006: Biodiesel Fuel Education Program

Administered by: National Institute of Food and Agriculture (NIFA) and Office of Energy Policy and New Uses (OEPNU), OCE, USDA.

Program Overview: Originally established under the 2002 farm bill, the Biodiesel Fuel Education Program was extended by both the 2008 and 2014 farm bills (7 U.S.C. §8106). The Biodiesel Fuel Education Program awards competitive grants to nonprofit organizations that educate governmental and private entities that operate vehicle fleets, and educates the public about the benefits of biodiesel fuel use. The program is implemented by USDA through continuation grants.[34] The final rule for the program was published on September 30, 2003 (68 *Federal Register* 56137).

Changes in 2014 Farm Bill: Extended the Biodiesel Fuel Education Program from FY2014 through FY2018 without changes to program implementation other than new funding levels.

Funding: Under the 2014 farm bill, mandatory CCC funds of $1 million were provided annually for FY2014-FY2018. Discretionary funds of $1 million each for FY2014-FY2018 were authorized to be appropriated, but through FY2018 no discretionary funding has been provided. Under the 2008 farm bill, mandatory CCC funds of $1 million were provided annually for FY2008-FY2012.

Section 9007: Rural Energy for America Program (REAP)

Administered by: REAP is administered by the Rural Business and Cooperative Service, Rural Development, USDA.

Program Overview: The 2008 farm bill combined elements of two existing programs from the 2002 farm bill—the Energy Audit and Renewable Energy Development Program and the RES and EEI Program—into a single program renamed the Rural Energy for America Program (REAP), (7 U.S.C. §8107).

REAP provides various types of financial assistance under a cost-share arrangement for the following purposes:

- grants, guaranteed loans, and combined grants and guaranteed loans for the development and construction of renewable energy systems (RES) and for energy efficiency improvement (EEI) projects (eligible entities include rural small businesses and agricultural producers);
- grants for conducting energy audits and for conducting renewable energy development assistance (eligible entities include state, tribe, or local governments; land-grant colleges and universities; rural electric cooperatives; and public power entities); and

[34] USDA reports that a new continuation grant is an award for a successful project application that has not been previously submitted, and by which the Department agrees to support a specified level of effort for a predetermined project period with a statement of intention to provide additional support at a future date, contingent upon the availability of appropriated funds and the satisfactory progress of this project, and the determination that continued support would be in the best interest of the federal government and the public. U.S. Department of Agriculture, *Biodiesel Fuel Education Program, Fiscal Year 2014 Request for Applications*, June 27, 2014.

- grants for conducting renewable energy systems (RES) feasibility studies (eligible entities include rural small businesses and agricultural producers).

The cost share feature of REAP limits the government's contribution to no more than 75% of eligible project costs for RES systems and energy efficiency improvement funding for guaranteed loan-only requests and for combination guaranteed loan and grant requests, while government's share of the grant portion may not exceed 25% of the total project costs whether the grant is grant-only or part of a combination request. Under energy audit and renewable energy development assistance grants, a grantee must pay a minimum of 25% of the cost of the energy audit. RES systems include those that generate energy from bioenergy (but excluding any mechanism for dispensing energy at retail—e.g., a blender pump), anaerobic digesters, geothermal, hydrogen, solar, wind, and hydropower. Energy-efficiency improvement (EEI) projects typically involve installing or upgrading equipment to significantly reduce energy use. REAP operates under regulations published under 7 C.F.R. Part 4280, subpart B.

Changes in 2014 Farm Bill: Extended REAP through FY2018, plus added new funding and a three-tiered application process with separate application processes for grants and loan guarantees for RES and EEI projects based on the project cost: tier-1 for projects < $80,000; tier-2 for projects > $80,000 but < $200,000; and tier-3 for projects > $200,000. In addition, a renewable energy system (RES) was redefined to exclude any mechanism for dispensing energy at retail—most notably blender pumps.

Funding: Under the 2014 farm bill, mandatory CCC funds of $50 million were authorized for FY2014 and each fiscal year thereafter (thus, unlike other farm bill renewable energy programs, REAP's mandatory funding authority does not expire with the 2014 farm bill). Mandatory funds are to remain available until expended. Discretionary funding of $20 million annually was authorized to be appropriated for FY2014-FY2018; of this amount, $3.5 million was appropriated for FY2014, $1.35 million in FY2015, $0.5 million for FY2016, $352,000 in FY2017, and $293,000 in FY2018 under annual appropriations acts. Under the 2008 farm bill, mandatory CCC funds of $55 million in FY2009, $60 million in FY2010, $70 million in FY2011, and $70 million in FY2012 were authorized, to remain available until expended. Discretionary funding of $25 million annually was authorized to be appropriated for FY2009-FY2012. Actual discretionary appropriations were $5 million in FY2009, $39.3 million in FY2010, $5 million in FY2011, and $3.4 million in FY2012 and in FY2013. The FY2011 appropriations act (Department of Defense and Full-Year Continuing Appropriations Act, 2011; P.L. 112-10) reduced REAP discretionary funds from $25 million to $5 million, but left REAP's mandatory funding of $70 million intact. The FY2012 Agriculture Appropriations Act (P.L. 112-55) limited REAP mandatory spending to $22 million, while $3.4 million in discretionary funds was appropriated, to be divided evenly between grants and loan guarantees. Under ATRA, no new mandatory funding was included for REAP; however, discretionary funding of $25 million was authorized to be appropriated for FY2013.

Section 9008: Biomass Research and Development Initiative (BRDI)

Administered by: National Institute of Food and Agriculture (NIFA), USDA, and DOE, jointly.

Program Overview: BRDI—created originally under the Biomass Research and Development Act of 2000 (BRDA; P.L. 106-224)—seeks to foster significant commercial production of biofuels, biobased energy innovations, development of biobased feedstocks, and biobased products and processes, including cost-competitive cellulosic ethanol. To this end, the program provides competitive funding in the form of grants, contracts, and financial assistance for research, development, and demonstration of technologies and processes. Eligibility is limited to

institutions of higher learning, national laboratories, federal or state research agencies, private-sector entities, and nonprofit organizations.

BRDI provides for coordination of biomass research and development, including life-cycle analysis of biofuels, between USDA and DOE by creating the Biomass Research and Development Board to coordinate government activities in biomass research, and the Biomass Research and Development Technical Advisory Committee to advise on proposal direction and evaluation.[35] The 2008 farm bill moved BRDA in statute to Title IX of the 2008 farm bill and expanded the BRDI technical advisory committee (7 U.S.C. §8108).

Since 2002 USDA and DOE jointly have announced annual solicitations and awards of funding allocations under BRDI.[36] Pursuant to the 2008 farm bill, applicants seeking BRDI funding must propose projects that integrate science and engineering research in the following three technical areas that are critical to the broader success of alternative biofuels production: feedstock development, biofuels and biobased products development, and biofuels development analysis. A minimum of 15% of funding must go to each area.[37] The minimum cost-share requirement for demonstration projects was increased to 50%, and for research projects to 20%.

Changes in 2014 Farm Bill: Extended BRDI through FY2018 without changes to program implementation other than new funding levels.

Funding: The 2014 farm bill authorized mandatory funding (to remain available until expended) of $3 million for four fiscal years—FY2014-FY2017—with baseline funding authority expiring after FY2017. Discretionary funding of $20 million was authorized to be appropriated annually for FY2014-FY2018. However, no discretionary funding from USDA has been appropriated for BRDI through FY2018. A DOE funding match of up to $3 million annually of discretionary funding is subject to annual appropriations.[38] DOE reports it contributed up to $3 million for FY2017, and that it will not contribute funding for FY2018.[39] The 2008 farm bill authorized mandatory funding (to remain available until expended) of $20 million for FY2009, $28 million for FY2010, $30 million for FY2011, and $40 million for FY2012. Discretionary funding of $35 million was authorized to be appropriated annually for FY2009-FY2012. Under ATRA, no new mandatory funding was included for BRDI; however, discretionary funding of $35 million was authorized to be appropriated for FY2013.

Section 9009: Feedstock Flexibility Program (FFP) for Bioenergy Producers

Administered by: Farm Service Agency (FSA), USDA.

Program Overview: Under the 2008 farm bill, the Feedstock Flexibility Program required that USDA establish and administer a sugar-for-ethanol program using sugar intended for food use but

[35] For more information on the Biomass Research and Development Board, the Technical Advisory Committee, and project selection, https://biomassboard.gov/.

[36] For BRDI current and historical (FY2003-FY2015) solicitations and awards, visit https://nifa.usda.gov/funding-opportunity/biomass-research-and-development-initiative-brdi and https://biomassboard.gov/initiative/past_solicitations.html.

[37] For details on BRDI technical areas, see https://biomassboard.gov/initiative/initiative.html.

[38] U.S. Department of Energy in Partnership with U.S. Department of Agriculture, *Financial Assistance Funding Opportunity Announcement Fiscal Year 2017 Biomass Research and Development Request for Applications,* DE-FOA-0001637, June 5, 2017.

[39] Emails from DOE on September 5, 2017, and April 17, 2018. DOE reports it provides funding for this program every other year.

deemed to be in surplus. USDA would subsidize the use of sugar for ethanol production through federal purchases of surplus sugar for resale to ethanol producers. USDA would implement the program only in those years where purchases are determined to be necessary to ensure that the sugar program operates at no cost to the federal government (7 U.S.C. §8110).

The intent of the FFP is to provide the CCC a tool for avoiding sugar forfeitures. Under the sugar program, domestic sugar beet or sugarcane processors may borrow from the CCC, pledging their sugar production as collateral for any such loan, and then satisfy their loans either by repaying the loan on or before loan maturity, or by transferring the title for the collateral to the CCC immediately following loan maturity, also known as "forfeiture" of collateral (as specified in 7 C.F.R. 1435). The CCC is required to operate the sugar program, to the maximum extent practicable at no cost to the federal government, by avoiding forfeitures to CCC. If domestic sugar market conditions are such that market rates are less than forfeiture level (i.e., forfeitures appear likely), current law requires CCC to use FFP to purchase sugar and sell such sugar to bioenergy producers to avoid forfeitures.

The FFP became effective upon publication of the final rule by USDA in the *Federal Register* on July 29, 2013.[40] By late July 2013, U.S. sugar prices were below effective federal support levels, compelling USDA to activate FFP on August 15, 2013, and use an estimated $148 million of CCC funds to avoid possible sugar forfeitures.[41]

Changes in 2014 Farm Bill: Extended the Feedstock Flexibility Program through FY2018 with no changes to program implementation.

Funding: Under the 2014 farm bill, mandatory funding authority of such sums as necessary was extended through FY2018 by the 2014 farm bill. Under the 2008 farm bill, mandatory CCC funds of such sums as necessary also were made available. Funding authority was extended through FY2013 by ATRA.

Section 9010: Biomass Crop Assistance Program (BCAP)

Administered by: Farm Service Agency (FSA), USDA.

Program Overview: The Biomass Crop Assistance Program (BCAP) provides financial assistance to owners and operators of agricultural land and nonindustrial private forest land who wish to establish, produce, and deliver biomass feedstocks to eligible processing plants.[42] BCAP provides two categories of assistance[43]

1. **establishment and annual payments**, including a one-time payment of up to 50% of the cost of establishment for perennial crops, and annual payments (i.e., rental rates based on a set of criteria) of up to five years for nonwoody and 15 years for woody perennial biomass crops; and

[40] "Sugar Program: Feedstock Flexibility Program for Bioenergy Producers," *Federal Register*, Vol. 78, No. 145, July 29, 2013.

[41] For more information see USDA, Economic Research Service (ERS), *Sugar and Sweeteners Outlook*, SSS-M-305, January 16, 2014.

[42] For more information, see CRS Report R41296, *Biomass Crop Assistance Program (BCAP): Status and Issues*, by Mark A. McMinimy, and U.S. Department of Agriculture, "Biomass Crop Assistance Program," 80 *Federal Register*, February 27, 2015.

[43] Farm Service Agency, USDA, "Biomass Crop Assistance Program for Fiscal Year 2017, Fact Sheet," at https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/2016/bcap_fact_sheet_nov2016.pdf.

2. **matching payments**, at a rate of $1 for each $1 per ton provided, up to $20 per ton, for a period of two years, which may be available to help eligible material owners with collection, harvest, storage, and transportation (CHST) of eligible material for use in a qualified biomass conversion facility.

Establishment and annual payments are available to certain producers who enter into contracts with USDA to produce eligible biomass crops on contract acres within designated BCAP project areas.[44] Eligible land for BCAP project area contracts includes agricultural land and nonindustrial private forestland, but does not include federal or state-owned land, land that is native sod. Lands enrolled in existing land retirement programs for conservation purposes—the Conservation Reserve Program (CRP) or the Agricultural Conservation Easement Program (ACEP)—also become eligible during the fiscal year that their land retirement contract expires. Generally, crops that receive payments under Title I (the commodity title) of the farm bill (e.g., corn, wheat, rice, and soybeans) and noxious weeds or invasive species are not eligible for annual payments.

Matching payments are available to eligible material owners who deliver eligible material to qualified biomass conversion facilities. Eligible material must be harvested directly from the land and separate from a higher-value product (e.g., Title I crops). Invasive and noxious species are considered eligible material, and land ownership (private, state, federal, etc.) is not a limiting factor to receive matching payments (7 U.S.C. §8111).

Changes in 2014 Farm Bill: Extended BCAP through FY2018. Changes enrolled land eligibility by including land under expiring CRP or ACEP easement contracts; included residue from crops receiving Title I payments as eligible material, but extended exclusion to any whole grain from a Title I crop, as well as bagasse and algae. One-time establishment payments are limited to no more than 50% of cost of establishment from 75% previously, not to exceed $500 per acre ($750 per acre for socially disadvantaged farmers or ranchers). CHST matching payments may not exceed $20 per dry ton (down from $45 per dry ton) and are available for a two-year period. CHST funding shall be available for technical assistance. Not less than 10% or more than 50% of funding may be used for CHST. Not later than four years after enactment of the 2014 farm bill, USDA shall submit to the House and Senate Agriculture Committees a report on best practices from participants receiving assistance under BCAP.

Funding: Under the 2014 farm bill, mandatory funding of $25 million was authorized for each of FY2014-FY2018. No discretionary funding was authorized. The FY2015, FY2016, and FY2017 appropriations acts (P.L. 113-235, P.L. 114-113, and P.L. 115-31, respectively) limited mandatory funds to $23 million in FY2015, $3 million in FY2016, and $3 million in FY2017.[45] The FY2018 appropriations act provides no mandatory funding for BCAP. Under the 2008 farm bill, BCAP was meant to facilitate a broadening of the feedstock supply base for biofuel production beyond food crops by helping to establish a reliable supply of biomass for cellulosic biofuel production. Thus, under the 2008 farm bill, mandatory CCC funds of such sums as necessary were made available for each of FY2008-FY2012, with outlays to be determined by the number of BCAP participants. Actual outlays during FY2008-FY2012 were $290 million. Congress began to place limitations on the scope of BCAP funding with the 2010 Supplemental Appropriations Act (P.L. 111-212), which limited BCAP funding to $552 million in FY2010 and $432 million in FY2011. The Department of Defense and Full-Year Continuing Appropriations Act, 2011 (P.L. 112-10), further reduced BCAP funding for FY2011 to $112 million. The FY2012 Agriculture Appropriations Act (P.L. 112-55) limited BCAP mandatory spending to $17 million. Under

[44] See FSA, USDA, "BCAP Project Area Information," at https://www.fsa.usda.gov/programs-and-services/energy-programs/BCAP/bcap-project-area/index.

[45] §9010 was subject to changes in mandatory spending (CHIMPS) of $20 million for FY2017.

ATRA, no new mandatory funding was included for BCAP for FY2013; however, discretionary funding of $20 million was authorized to be appropriated. Actual outlays for FY2013 were $9 million.

Section 9011: Forest Biomass for Energy (Repealed)

Administered by: Forest Service, USDA.

Program Overview: The 2008 farm bill authorized the Forest Biomass for Energy program to function as a research and development program to encourage use of forest biomass for energy. The Forest Service, other federal agencies, state and local governments, Indian tribes, land-grant colleges and universities, and private entities were to be eligible to compete for program funds. Priority was to be given to projects that use low-value forest byproduct biomass for the production of energy; develop processes to integrate bioenergy from forest biomass into existing manufacturing streams; develop new transportation fuels; and improve the growth and yield of trees for renewable energy (7 U.S.C. §8112). In the end, the Forest Service never announced any regulations for this program.

Changes in 2014 Farm Bill: The Forest Biomass for Energy program was repealed.

Funding: Under the 2008 farm bill, discretionary funding of $15 million annually was authorized to be appropriated for FY2009-FY2012. Under ATRA, discretionary funding of $15 million was authorized to be appropriated for FY2013; however, no funding was appropriated through FY2013, and funding authority for the program expired after FY2013.

Section 9012: Community Wood Energy Program

Administered by: Forest Service, USDA.

Program Overview: The 2008 farm bill authorized the Community Wood Energy Program to provide matching grants—up to $50,000 and subject to a match of at least 50%—to state and local governments to acquire community wood energy systems for public buildings. Participants must also implement a community wood energy plan to meet energy needs with reduced carbon intensity through conservation, reduced costs, utilizing low-value wood sources, and increased awareness of energy consumption (7 U.S.C. §8113).

Changes in 2014 Farm Bill: Extended the Community Wood Energy Program through FY2018; defined a Biomass Consumer Cooperative and authorizes grants of up to $50,000 to be made to establish or expand biomass consumer cooperatives that will provide consumers with services or discounts relating to the purchase of biomass heating systems or products (including their delivery and storage); and required that any biomass consumer cooperative that receives a grant must match at least the equivalent of 50% of the funds toward the establishment or expansion of a biomass consumer cooperative.

Funding: Under the 2014 farm bill, no mandatory funding was provided. Discretionary funding of $5 million annually was authorized to be appropriated for FY2014-FY2018, but no funds have been appropriated through FY2018. Under the 2008 farm bill, discretionary funding of $5 million annually was authorized to be appropriated for FY2009-FY2012. ATRA subsequently extended authority for the program through FY2013, but no funds were appropriated through FY2013.

Section 9013: Biofuels Infrastructure Study (Repealed)

Program Overview: Section 9002 of the 2008 farm bill requested that USDA, DOE, EPA, and the Department of Transportation (DOT) jointly report on the infrastructure needs, requirements, and development approaches for expanding the domestic production, transportation, and distribution of biofuels given current and likely future market trends. A report including the study results was to be submitted to various related committees in Congress. No deadline was specified, and the report was never undertaken.

Changes in 2014 Farm Bill: The Biofuels Infrastructure Study requirement was repealed.

Funding: Program funding authority expired after FY2013. Under the 2008 farm bill, no specific funding was announced for this study, and no funding was ever authorized. In addition, no new funding authority was included in ATRA.

Section 9014: Renewable Fertilizer Study (Repealed)

Program Overview: Section 9003 of the 2008 farm bill required that a report be submitted to the House and Senate Agriculture Committees within one year of receipt of the appropriations to carry out the study on the production of fertilizer from renewable energy sources in rural areas. The report was to be based on a study of the challenges to commercialization of rural fertilizer production from renewable sources, potential processes and technologies, and the potential impacts of renewable fertilizer on fossil fuel use and the environment. The study was never undertaken.

Changes in 2014 Farm Bill: The Renewable Fertilizer Study requirement was repealed.

Funding: Program funding authority expired after FY2013. Under the 2008 farm bill, discretionary funding of $1 million was authorized to be appropriated for FY2009; however, no discretionary funding was ever authorized, and no new funding authority was included in ATRA.

Section 9015: Energy Efficiency Report for USDA Facilities

Program Overview: Under the 2014 farm bill, USDA was directed to submit a report to the House and Senate Agriculture Committees on energy use and energy efficiency projects at USDA facilities. USDA transmitted the report to the House and Senate Agriculture Committees on October 8, 2014.

Funding: No specific funding was authorized for this study.

No Provision: Rural Energy Self-Sufficiency Initiative

Administered by: Rural Business and Cooperative Service, RD, USDA.

Program Overview: The 2008 farm bill authorized the Rural Energy Self-Sufficiency Initiative to assist rural communities with community-wide energy systems that reduce conventional energy use and increase the use of energy from renewable sources. Grants were to be made available to assess energy use in a rural community, evaluate ideas for reducing energy use, and develop and install integrated renewable energy systems. Grants were not to exceed 50% of the total cost of the activity (7 U.S.C. §8109). No funding was ever appropriated, and regulations were never announced for this program.

Changes in 2014 Farm Bill: No provision was included in the 2014 farm bill for the Rural Energy Self-Sufficiency Initiative, with the result that program funding authority expired after FY2013.

Funding: Program funding authority expired after FY2013. Under the 2008 farm bill and the ATRA extension, discretionary funding of $5 million annually was authorized to be appropriated for FY2009-FY2013; however, no funding was ever appropriated.

Title VII—Energy-Related Agricultural Research and Extension Provisions

Three provisions from the Research title (Title VII) of the 2014 farm bill relate directly to renewable energy initiatives, which are described below.

Section 7210: Nutrient Management Research and Extension Program (Repealed)

Administered by: USDA.

Program Overview: This program provided research and extension grants for the purpose of finding innovative methods and technologies to allow agricultural operators to make use of animal waste, such as fertilizer, methane digestion, composting, and other useful by-products (7 U.S.C. §5925a).

Changes in 2014 Farm Bill: The 2014 farm bill repealed the Nutrient Management Research and Extension Program.

Section 7212: Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative (Repealed)

Function: Established for the purpose of using competitive grants to support research and extension activities that enhance the production of biomass energy crops and the energy efficiency of agricultural operations (7 U.S.C. §5925e).

Administered by: USDA.

Changes in 2014 Farm Bill: The 2014 farm bill repealed the Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative.

Section 7516: Sun Grant Program

Administered by: NIFA, USDA. Each regional Sun Grant center manages the programs and activities within its region, although a process based on peer and merit review is used to administer grants.

Program Overview: Under the 2008 farm bill, the Sun Grant Initiative (SGI) is a national network of land-grant universities and federally funded laboratories—coordinated through regional Sun Grant centers—working together to further establish a biobased economy.[46] Competitive grants are available to land-grant schools within each region to be used toward

[46] See "Sun Grant Initiative," at http://www.sungrant.org/.

integrated, multistate research, extension, and education programs on technology development and implementation. Sun Grant centers are also charged with reviving America's farming communities by placing an emphasis on rural economic development through the production of biobased renewable energy feedstocks.

A provision creating the Sun Grant Program was added subsequent to the 2002 farm bill under the Sun Grant Research Initiative Act of 2003 (§778, Consolidated Appropriations Act, 2004; P.L. 108-199). The initiative was originally established with five national Sun Grant research centers based at land-grant universities, each covering a different national region, to enhance coordination and collaboration among USDA, DOE, and land-grant universities in the development, distribution, and implementation of biobased energy technologies. The 2008 farm bill established the Sun Grant Program and added a sixth regional center (7 U.S.C. §8114). NIFA administers the program under 7 C.F.R. part 3430.

Changes in 2014 Farm Bill: The 2014 farm bill extended the Sun Grant Program with its discretionary funding authority (i.e., subject to appropriations) of $75 million annually through FY2018. It also consolidates and amends the Sun Grant Program to expand input from other appropriate federal agencies and replace authority for gasification research with bioproducts research and makes the program competitive by removing designation of certain universities as regional centers.

Funding: Under the 2014 farm bill, discretionary funding of $75 million annually was authorized to be appropriated for FY2014-FY2018. Of this amount, $2.5 million was appropriated for FY2014-FY2016, and $3 million for FY2017 and FY2018.[47] Under the 2008 farm bill, discretionary funding of $75 million annually was authorized to be appropriated for FY2008-FY2012, but actual appropriations amounted to $2.25 million for FY2010 and $2.2 million for FY2012. ATRA contained no new funding authority for FY2013.

[47] Funding amounts provided in USDA budget explanatory notes and the bill explanatory statement.

Appendix. Supplementary Tables

Table A-1. Authorized Funding for 2014 Farm Bill Title IX Energy Provisions, FY2014-FY2018

(budget authority in $ millions)

Section	Provision Name	Type[a]	FY2014	FY2015	FY2016	FY2017	FY2018	Total FY2014-FY2018
Section 9002	Federal Biobased Markets Program	M	3	3	3	3	3	15
		D[b]	2	2	2	2	2	10
Section 9003	Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program (formerly BAP)	M[c]	100[d]	50[e]	50[f]	0[g]	0	200
		D[b]	75	75	75	75	75	375
Section 9004	Repowering Assistance Program	M[c]	12	0[h]	0	0	0	12
		D[b]	10	10	10	10	10	50
Section 9005	Bioenergy Program for Adv. Biofuels	M[c]	15[i]	15	15	15	15	75
		D[b]	20	20	20	20	20	100
Section 9006	Biodiesel Fuel Education Program	M	1	1	1	1	1	5
		D[b]	1	1	1	1	1	5
Section 9007	Rural Energy for America Program (REAP)	M[c]	50	50	50	50	50	250
		D[b]	20	20	20	20	20	100
Section 9008	Biomass Research and Dev. Act (BRDA)	M[c]	3	3	3	3	0	12
		D[b]	20	20	20	20	20	100
Section 9009	Feedstock Flexibility Program for Bioenergy Production[j]	M	SSAN[k]	SSAN	SSAN	SSAN	SSAN	SSAN
Section 9010	Biomass Crop Assistance Program (BCAP)	M	25	25[l]	25[m]	25[n]	25	125
		D	0	0	0	0	0	0
Section 9012	Community Wood Energy Program	D[b]	5	5	5	5	5	25
Section 9015	Energy Efficiency Report for USDA facilities	Unfunded						

Section	Provision Name	Type[a]	FY2014	FY2015	FY2016	FY2017	FY2018	Total FY2014-FY2018
Total Mandatory Funding Authorized			**209**	**147**	**147**	**97**	**94**	**694**
Total Discretionary Funding Authorized			**153**	**153**	**153**	**153**	**153**	**765**

Source: P.L. 113-79 (Agricultural Act of 2014).

Notes: The following Title IX sections are unfunded repeals of programs from the 2008 farm bill: Section 9011, Forest Biomass for Energy; Section 9013, Biofuels Infrastructure Study; Section 9014, Renewable Fertilizer Study. The previous Rural Energy Self-Sufficiency Initiative was repealed by omission. In addition, three energy-related provisions from Title VII (Research, Extension, and Related Matters) were dealt with as follows: the Nutrient Management Research and Extension program was repealed by Section 7210, the Biofeedstock and Energy Efficiency Research and Extension Program was repealed by Section 7212, and the Sun Grant Program was extended (§7516) with authorization for discretionary funding of $75 million for each of FY2014-FY2018.

a. **M** = mandatory funding; **D** = discretionary funding.

b. In the past, many of the discretionary programs have never received any funding or received lesser amounts in the annual appropriations process than originally authorized in the farm bill.

c. Mandatory funding is to remain available until expended for Title IX programs under the following provisions: Section 9003, Section 9004, Section 9005, Section 9007, and Section 9008.

d. The FY2014 appropriations act (P.L. 113-76) rescinded $40.7 million of funds available.

e. The FY2015 appropriations act (P.L. 113-235) limited funding to $30 million.

f. The FY2016 appropriations act (P.L. 114-113) limited funding to $27 million.

g. The FY2017 appropriations act (P.L. 115-31) limited funding to $151 million in carryover funding.

h. The FY2015 appropriations act reduced available funds for FY2015 by $8 million.

i. The FY2014 appropriations act reduced funds available by $8 million.

j. This program is triggered when a sugar surplus exists.

k. **SSAN** = Such sums as necessary.

l. The FY2015 appropriations act limited funding to $23 million.

m. The FY2016 appropriations act limited funding to $3 million.

n. The FY2017 appropriations act limited funding to $3 million.

Table A-2. Authorized Funding for 2008 Farm Bill Title IX Energy Provisions, FY2008-FY2012

(budget authority in $ millions)

Section[a]	Provision Name	Type	FY2008	FY2009	FY2010	FY2011	FY2012	Total
Section 9002[a]	Federal Biobased Markets Program	Mand.	1	2	2	2	2	9
		Discr.[b]	0	2	2	2	2	8
Section 9003[a]	Biorefinery Assistance Program (BAP)	Mand.	0	75	245	0	0	320
		Discr.[b]	0	150	150	150	150	600
Section 9004[a]	Repowering Assistance Program	Mand.	0	35	0	0	0	35
		Discr.[b]	0	15	15	15	15	60
Section 9005[a]	Bioenergy Program for Adv. Biofuels	Mand.	0	55	55	85	105[c]	300
		Discr.[b]	0	25	25	25	25	100
Section 9006[a]	Biodiesel Fuel Education Program	Mand.	1	1	1	1	1	5
Section 9007[a]	Rural Energy for America Prog. (REAP)	Mand.	0	55	60	70	70[d]	255
		Discr.[b]	0	25	25	25	25	100
Section 9008[a]	Biomass Research and Dev. Act (BRDA)	Mand.	0	20	28	30	40	118
		Discr.[b]	0	35	35	35	35	140
Section 9009[a]	Rural Energy Self-Sufficiency Initiative	Discr.[b]	0	5	5	5	5	20
Section 9010[a]	Feedstock Flex. Prog. for Bioenergy Prod.	Mand.	SSAN	SSAN	SSAN	SSAN	SSAN	SSAN
Section 9011[a]	Biomass Crop Assistance Prog. (BCAP)	Mand.	SSAN	SSAN	SSAN[e]	SSAN[e]	SSAN[e]	SSAN
Section 9012[a]	Forest Biomass for Energy	Discr.[b]	0	15	15	15	15	60

Section[a]	Provision Name	Type	FY2008	FY2009	FY2010	FY2011	FY2012	Total
Section 9013[a]	Community Wood Energy Program	Discr.[b]	0	5	5	5	5	20
Section 9002	Biofuels Infrastructure Study	None	0	0	0	0	0	0
Section 9003	Renewable Fertilizer Study	Discr.[b]	0	1	0	0	0	1
Total Discretionary Funding Authorized[b]			**0**	**278**	**277**	**277**	**277**	**1,109**
Total Mandatory Funding Authorized			**2**	**243**	**391**	**188**	**218**	**1,042**

Source: P.L. 110-246 (Food, Conservation, and Energy Act of 2008) and P.L. 113-6 (Consolidated and Further Continuing Appropriations Act, 2013).

Notes: All mandatory funding authority expired at the end of FY2012, with the exception of the Feedstock Flexibility Program. Authority for discretionary funding was extended under the Continuing Resolution (P.L. 112-175), for the first half of FY2013 effective October 1, 2012, through March 27, 2013; the American Taxpayer Relief Act of 2012 (ATRA; P.L. 112-240, §701), and P.L. 113-6 (Consolidated and Further Continuing Appropriations Act, 2013) which appropriated funds for the second half of FY2013.

Abbreviations: "SSAN" = such sums as necessary.

a. Section 9001 of the 2008 farm bill (P.L. 110-246) amends Title IX of the 2002 farm bill (P.L. 107-171). Sections 9001 through 9013 of the table are the amended section numbers.

b. Many of the discretionary programs never received any funding or received lesser amounts through the annual appropriations process than originally authorized in the farm bill.

c. The FY2012 Agriculture Appropriations Act (P.L. 112-55) limited funding to $65 million.

d. The FY2012 Agriculture Appropriations Act limited funding to $22 million.

e. The authority for funding under BCAP was reduced to $552 million in FY2010 and $432 million in FY2011 under the Supplemental Appropriations Act of 2010 (P.L. 111-212). BCAP funding for FY2011 was reduced a second time to $112 million under the Department of Defense and Full-Year Continuing Appropriations Act, 2011 (P.L. 112-10). Finally, the FY2012 Agriculture Appropriations Act reduced BCAP funding to $17 million for FY2012.

Table A-3. Title IX- Energy: Comparison of 2014 Farm Bill With Prior Law

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
Definitions	
Advanced Biofuel. Fuel derived from renewable biomass other than corn kernel starch. Includes biofuel derived from sugar and starch other than corn kernel starch, renewable biodiesel, biogas produced from organic matter, as well as other fuels (e.g., home heating fuels, and aviation and jet fuels) from cellulosic biomass (including organic waste material). ***[7 U.S.C. 8101(3)]***	Same as prior law. ***[§9001]***
Biobased Product. A commercial or industrial product—i.e., intermediate, feedstock, or end product (other than food or feed)—composed in whole or in part of biological products including renewable agricultural and forestry materials. ***[7 U.S.C. 8101(4)]***	Same as prior law. ***[§9001]***
Biofuel. A fuel derived from renewable biomass. ***[7 U.S.C. 8101(5)]***	Same as prior law. ***[§9001]***
Biomass Conversion Facility. A facility that converts renewable biomass into heat, power, biobased products, or advanced biofuels. ***[7 U.S.C. 8101(6)]***	Same as prior law. ***[§9001]***
Biorefinery. A facility (including equipment and processes) that converts renewable biomass into biofuels and biobased products, and may produce electricity. ***[7 U.S.C. 8101(7)]***	Same as prior law. ***[§9001]***
No comparable provision.	**Forest Product.** A product made from materials derived from the practice of forestry or the management of growing timber including pulp, paper, paperboard, pellets, lumber, and wood products, and any recycled products derived from forest materials. ***[§9001]***
Renewable Biomass. Includes (1) materials, precommercial thinnings, or invasive species from National Forest System land and public lands that are: byproducts of designated preventive treatments (removed to reduce hazardous fuels, to reduce or to contain disease or insect infestation, or to restore ecosystem health), not used for higher value products, and harvested in accordance with applicable law and land management plans and requirements for old-growth maintenance, restoration, and management and large-tree retention, or (2) any organic matter available on a recurring basis from nonfederal or Indian land including: renewable plant material (including agricultural commodities, plants and trees, and algae) and waste material (including crop residue, vegetative waste, wood waste and residues, animal waste and byproducts, and food and yard waste). ***[7 U.S.C. 8101(12)]***	Same as prior law. ***[§9001]***
No comparable definition.	**Renewable Chemical.** A monomer, polymer, plastic, formulated product, or chemical substance produced from renewable biomass. ***[§9001]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
Renewable Energy. Energy derived from a wind, solar, renewable biomass, ocean (including tidal, wave, current, and thermal), geothermal, or hydroelectric source. ***[7 U.S.C. 8101(13)]***	Same as prior law. ***[§9001]***
No comparable definition.	**Renewable Energy System.** A system that produces energy from a renewable source including distribution components necessary to move energy produced by such a system to the initial point of sale, but not any mechanism for dispensing energy at retail (e.g., a blender pump). ***[§9001]***
Authorized Programs	
Biobased Markets Program. Requires federal agencies to purchase products with maximum biobased content subject to availability and flexibility and performance standards. Minimum biobased content standards applied to federal contracts on case-by-case basis. Continued voluntary labeling. Authorized mandatory funding of $1 million for FY2008 and $2 million annually for FY2009-FY2012; no mandatory funding was authorized for FY2013. Authorized to be appropriated $2 million annually for FY2009-FY2013 for testing and labeling. ***[7 U.S.C. 8102]***	Extends the Biobased Markets Program through FY2018 including, in addition to preference for biobased products, establish a targeted biobased-only procurement requirement for federal agencies. Limits reporting on the availability, relative price, performance and environmental and public health benefits of biobased materials subject to the availability of data. Adds reporting requirements of quantities and types of biobased products purchased by procuring federal agencies and a focus on biobased content requirements (explicitly including forest products). Mandates (within one year of enactment) designation of intermediate ingredients or feedstocks and assembled and finished biobased products according to guidelines. Adds auditing and compliance activities to ensure proper use of biobased labeling. Mandates study (and report) by USDA to assess economic impact of biobased product industry, due within one year of enactment. Encourages expedited coordination, review and approval (with appropriate technical assistance) of forest-related biobased products. Authorizes mandatory funding of $3 million annually for FY2014-FY2018. Authorizes to be appropriated $2 million annually for FY2014-FY2018. ***[§9002]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
Biorefinery Assistance Program. Assists in development of new and emerging technologies for advanced biofuels by providing competitive grants (up to 30% of total project costs) and loan guarantees (limited to $250 million or 80% of project cost) for construction and/or retrofitting of demonstration-scale biorefineries to demonstrate the commercial viability of one or more processes for converting renewable biomass to advanced biofuels. Provided mandatory funding of $75 million in FY2009 and $245 million in FY2010, available until expended, for loan guarantees. Authorized to be appropriated $150 million annually for FY2009-13 for grants. ***[7 U.S.C. 8103]***	Renamed as the **Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program.** Extends and expands the program to include renewable chemical (as defined above in §9001) and biobased product manufacturing (defined as development, construction, and retrofitting of technologically new commercial-scale processing and manufacturing equipment and required facilities used to convert renewable chemicals and other biobased outputs into commercial-scale end products). Extends loan guarantee availability to the development and construction of renewable chemical and biobased product manufacturing facilities, directs USDA to ensure diversity in types of projects approved, and caps the funds used for loan guarantees to promote biobased product manufacturing at 15% of the total available mandatory funds. Eliminates grant funding. Authorizes mandatory funding of $100 million for FY2014 and $50 million each for FY2015-FY2016 to remain available until expended, plus it authorizes to be appropriated $75 million for each of FY2014-FY2018. ***[§9003]***
Repowering Assistance Program. Provides funds to reduce or eliminate the use of fossil fuels for processing or power in biorefineries in existence at enactment. Not more than 5% of funds are available to eligible producers with a refining capacity exceeding 150 million gallons of advanced biofuel per year. Provided mandatory CCC funding of $35 million for FY2009, available until expended. Authorized to be appropriated $15 million annually for FY2009-FY2013. ***[7 U.S.C. 8104]***	Extends prior law through FY2018. Authorizes mandatory funding of $12 million for FY2014, available until expended. Authorizes to be appropriated $10 million annually for FY2014-FY2018. ***[§9004]***
Bioenergy Program for Advanced Biofuels. Provides payments to producers to support and expand production of advanced biofuels by entering into contracts to pay producers for production of eligible advanced biofuels. Provided mandatory funding of $55 million (FY2009), $55 million (FY2010), $85 million (FY2011), and $105 million (FY2012), available until expended. Authorized to be appropriated $25 million annually (FY2009-13) ***[7 U.S.C. 8105]***	Extends the Bioenergy Program for Advanced Biofuels Program through FY2018. Authorizes mandatory funding of $15 million for each of FY2014-FY2018, available until expended. Authorizes to be appropriated $20 million annually for FY2014-FY2018. ***[§9005]***
Biodiesel Fuel Education Program. Awards competitive grants to nonprofit organizations that educate fleet operators and the public on biodiesel benefits. Provided mandatory CCC funding of $1 million annually (FY2008-FY2012). Authorized to be appropriated $1 million for FY2013. ***[7 U.S.C. 8106]***	Extends the Biodiesel Fuel Education Program through FY2018. Authorizes mandatory funding of $1 million annually for FY2014-FY2018. Authorizes to be appropriated $1 million annually for FY2014-FY2018. ***[§9006]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
Rural Energy for America Program (REAP). Provides financial assistance of grants, guaranteed loans, and combined grants and guaranteed loans for the development and construction of renewable energy systems (RES) and for energy efficiency improvement (EEI) projects (eligible entities include rural small businesses and agricultural producers); grants for conducting energy audits and for conducting renewable energy development assistance (eligible entities include state, tribe, or local governments, land-grant colleges and universities, rural electric cooperatives, and public power entities); and grants for conducting RES feasibility studies (eligible entities include rural small businesses and agricultural producers). Grants are limited to $500,000 for RES and $250,000 for EEI activities up to 25% of the cost of the RES or EEI activity. Loan guarantees are limited to a max of $25 million and a min of $5,000 up to 75% of the cost of a funded activity. Provides mandatory funds: $55 million (FY2009), $60 million (FY2010), $70 million (FY2011), and $70 million (FY2012), available until expended. Authorizes $25 million annually, subject to appropriations (FY2009-FY2013). ***[7 U.S.C. 8107]***	Extends REAP through FY2018. Adds a council (as defined in Section 1528 of the Agriculture and Food Act of 1981) as an eligible entity. Adds a 3-tiered application process with separate application processes for grants and loan guarantees for RES and EEI projects based on the project cost: tier-1 for projects ≤ $80,000; tier-2 for $80,000 < projects < $200,000; and tier-3 for projects > $200,000. Mandatory funding of $50 million is authorized for FY2014 and each fiscal year thereafter, to remain available until expended. Authorizes to be appropriated $20 million annually for FY2014-FY2018. ***[§9007]***
Biomass Research & Development Initiative (BRDI). Provides competitive funding as grants, contracts, and financial assistance for research, development, and demonstration of technologies and processes leading to commercial production of biofuels and biobased products. Provides for coordination between USDA and DOE work related to biofuels and biobased products research and development programs through the Biomass Research and Development Board. Provides mandatory funding: $20 million (FY2009), $28 million (FY2010), $30 million (FY1022), and $40 million (FY2012). Authorizes to be appropriated $35 million annually (FY2009-FY2013). ***[7 U.S.C. 8108]***	Extends BRDI through FY2018. Authorizes mandatory funding of $3 million annually for four fiscal years, FY2014-FY2017, to remain available until expended. Authorizes to be appropriated $20 million annually for FY2014-FY2018. ***[§9008]***
Rural Energy Self-Sufficiency Initiative. Provides cost-share grants (up to 50%) for rural communities to assess energy systems and make improvements. Authorizes to be appropriated $5 million annually (FY2009-FY2013); however, no funds were ever appropriated and no rules were ever promulgated. ***[7 U.S.C. 8109]***	No provision. Hence, program funding authority expired after FY2013.
Feedstock Flexibility Program. Authorizes use of CCC funds (such sums as necessary) to purchase sugar (intended for food use but deemed to be in surplus) for resale as a biomass feedstock to produce bioenergy. USDA would implement the program only in those years where purchases are determined to be necessary to ensure that the sugar program operates at no cost to the federal government. ***[7 U.S.C. 8110]***	Extends the Feedstock Flexibility Program through FY2018. ***[§9009]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
Biomass Crop Assistance Program (BCAP). Provides financial assistance to owners and operators of agricultural land and nonindustrial private forest land who wish to establish, produce, and deliver biomass feedstocks under two categories of assistance: (1) establishment and annual payments provided under contract between USDA and participating producers, including a one-time payment of up to 75% of cost of establishment for perennial crops, and annual payments (rental rates based on a set of criteria) of up to 5 years for non-woody and 15 years for woody perennial biomass crops, and (2) matching payments at a rate of $1 for each $1 per ton provided, up to $45 per ton, for a period of 2 years to help eligible material owners with collection, harvest, storage, and transportation (CHST) of eligible material for use in a qualified biomass conversion facility. Eligible material excludes Title I crops, animal waste and byproducts, food and yard waste, and algae. Provides mandatory CCC funding of such sums as necessary annually for FY2008-FY2012. Authorized to be appropriated $20 million for FY2013. ***[7 U.S.C. 8111]***	Extends BCAP through FY2018. Changes enrolled land eligibility; includes residue from crops receiving Title I payments as eligible material, but extends exclusion to any whole grain from a Title I crop, as well as bagasse and algae. One-time establishment payments are limited to no more than 50% of cost of establishment, not to exceed $500 per acre ($750 per acre for socially disadvantaged farmers or ranchers). CHST matching payments may not exceed $20 per dry ton but are available for a 2-year period. Not later than 4 years after enactment, USDA shall submit a report on best practice data and information gathered from participants. Also, it provides that funding under the subsection shall be available for technical assistance. Mandatory funding of $25 million is authorized for each of FY2014-FY2018. Not less than 10% or more than 50% of funding may be used for CHST. ***[§9010]***
Forest Biomass for Energy Program. Requires the Forest Service to conduct a competitive research and development program to encourage use of forest biomass for energy. Authorized to be appropriated $15 million annually (FY2009-FY2013). ***[7 U.S.C. 8112]***	Repeals the Forest Biomass for Energy Program. ***[§9011]***
Community Wood Energy Program. Provides grants of up to $50,000 for up to 50% of the cost for communities to plan and install wood energy systems in public buildings. The energy system acquired with grant funds shall not exceed an output of 50,000,000 Btu per hour for heating and 2 megawatts for electric power production. Authorized to be appropriated $5 million annually (FY2009-FY13). ***[7 U.S.C. 8113]***	Extends the Community Wood Energy Program through FY2018. Defines Biomass Consumer Cooperative. Authorizes grants of up to $50,000 to be made to establish or expand biomass consumer cooperatives that will provide consumers with services or discounts relating to the purchase of biomass heating systems or products (including their delivery and storage). Any biomass consumer cooperative that receives a grant must match at least the equivalent of 50% of the funds toward the establishment of expansion of a biomass consumer cooperative. Authorizes to be appropriated $5 million annually for FY2014-FY2018. ***[§9012]***
Biofuels Infrastructure Study. Required USDA to conduct a study (and report) to assess the infrastructure needs for expanding the domestic production, transport, and distribution of biofuels given current and likely future market trends with recommendations for such infrastructure through 2025 based on needs, costs, and other factors. No specific time frame or funding was provided. ***[§9002 of* P.L. 110-246*]***	Repeals the requirement to conduct the study (and report). ***[§9013]***
Renewable Fertilizer Study. Required USDA to conduct a study to assess the current state of knowledge on the potential for the production of fertilizer from renewable energy sources in rural areas. Study was to be completed within one year of receiving an appropriation. Authorized to be appropriated $1 million for FY2009. ***[§9003 of* P.L. 110-246*]***	Requirement to conduct the study is repealed. ***[§9014]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
No comparable provision.	**Energy Efficiency Report for USDA Facilities.** Within 180 days after enactment, USDA is required to submit a report to the House and Senate Agriculture Committees on energy use and energy efficiency projects at USDA facilities. ***[§9015]***

Source: Title IX- Energy, Agricultural Act of 2014; P.L. 113-79.

Notes: For a comparison of prior and enacted law with the provisions in the House and Senate versions of the 2014 farm bill (i.e., the Senate-passed S. 954 and the House-passed H.R. 2642), see CRS Report R43076, *The 2014 Farm Bill (P.L. 113-79): Summary and Side-by-Side*.

Author Information

Kelsi Bracmort
Specialist in Natural Resources and Energy Policy

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