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Energy Provisions in the 2014 Farm Bill (P.L. 113-79)

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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 bioenergy programs administered by the U.S. Department of Agriculture (USDA). USDA renewable energy programs have incentivized research, development, and adoption of renewable energy projects, including solar, wind, and anaerobic digesters. However, the primary focus of USDA renewable energy programs has been to promote U.S. biofuels production and use—including corn starch-based ethanol, cellulosic ethanol, and soybean-based biodiesel.

Corn starch-based ethanol dominates the U.S. biofuels industry. The previous 2008 farm bill (P.L. 110-246) had attempted to refocus U.S. biofuels policy initiatives in favor of non-corn feedstocks, especially the development of the cellulosic biofuels industry. 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 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, including the installation of blender pumps to help circumvent the emerging "blend wall" that has effectively circumscribed domestic ethanol consumption near current levels of about 13 billion gallons annually.

All of the major farm bill energy programs expired at the end of FY2013 and lacked baseline funding going forward. The enacted 2014 farm bill extends most of the renewable 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for Energy Program, the Biofuels Infrastructure Study, and the Renewable Fertilizer Study, which are either omitted or repealed. In addition, P.L. 113-79 includes a new provision which 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 farm bill (H.R. 2642), BCAP funding for the Collection, Harvest, Storage, and Transportation (CHST) component is retained in P.L. 113-79. Elimination of CHST support would likely have severely limited BCAP's potential effectiveness as an incentive to produce cellulosic feedstocks. Finally, P.L. 113-79 adds a new reporting requirement on energy use and efficiency at USDA facilities.

Over the five-year reauthorization period (FY2014-FY2018), the 2014 farm bill contains 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 contrasts with the previous 2008 farm bill, which had authorized slightly over $1 billion in mandatory funding for a five-year period (FY2008-FY2012) and $1.7 billion in discretionary appropriations to Title IX energy programs.

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Overview

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. policy makers 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] In particular, 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. 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 FY2007 total direct federal biofuels subsidies had grown to over $4 billion per year.[3] By FY2011, federal biofuels subsidies had reached approximately $7.7 billion, 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 biodiesel producer tax credits of approximately $1 billion. The remaining biofuels tax credits—for biodiesel and cellulosic biofuel, and including a small producers tax credit—expired at the end of FY2013. In their absence, the funding afforded under the provisions of Title IX of the 2014 farm bill represents the principal source of federal support for biofuels production and use in the United States.

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-5** presents data on 2014 farm bill budgetary authority for energy provisions, while **Table A-6** presents the original budget authority for Title IX programs under the previous 2008 farm bill. A third table (**Table A-7**) provides a side-by-side comparison of Title IX energy-related provisions for current versus previous law. Additional CRS side-by-side comparisons of historical farm-bill energy-related provisions are available for:

- farm bill versions as originating out of the House (H.R. 2642) and Senate (S. 954) of the 113th Congress with both previous and the new law, in CRS Report R43076, *The 2014 Farm Bill (P.L. 113-79): Summary and Side-by-Side*;

[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] 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.

- the 2008 farm bill (the Food, Conservation, and Energy Act of 2008; P.L. 110-246) with those of the 2002 farm bill (the Farm Security and Rural Investment Act of 2002; P.L. 107-171), in CRS Report RL34130, *Renewable Energy Programs in the 2008 Farm Bill*; and
- the 2008 farm bill with those of the 2007 energy bill (Energy Independence and Security Act of 2007, P.L. 110-140), in CRS Report RL34239, *Biofuels Provisions in the 2007 Energy Bill and the 2008 Farm Bill: A Side-by-Side Comparison*.

Origins of Federal Biofuels Policy

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 as follows.

- 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—biodiesel, cellulosic, advanced, and total—each with its own mandated volume.[4]
- 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, but was last at $0.45 per gallon of pure ethanol blended with gasoline when it expired on December 31, 2011.[5]
- 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.[6]

In addition to the RFS, VEETC, and 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.[7] A substantial number of federal programs also support renewable energy sources other than biofuels.[8] In addition to federal programs, many states offer additional support to biofuels producers, blenders, and consumers.[9]

[4] See CRS Report R40155, *Renewable Fuel Standard (RFS): Overview and Issues*.

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

[6] For the origins and history of the import duty, see CRS Report R42566, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*; for a discussion of exemptions from the import duty, see CRS Report RS21930, *Ethanol Imports and the Caribbean Basin Initiative (CBI)*.

[7] Most of these tax credits have expired. See CRS Report R42566, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*, by Lynn J. Cunningham et al.

[8] For a complete listing of federal programs that support all types of renewable energy, see footnote 7.

[9] For information on state programs, see "Database of State Incentives for Renewables & Efficiency (DSIRE)," at
(continued...)

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 is designed to provide incentives for the research and development of new agriculture-based renewable fuels, especially second-generation biofuels (based on non-food crop biomass such as cellulose and algae), and to expand their distribution and use.

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.[10] Since enactment of the 2002 farm bill, interest in renewable energy has grown rapidly, due in large part to a strong rise 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 2001 and 2011, rising from under 2 billion gallons to nearly 14 billion gallons during that period.[11] Similarly, corn use for ethanol grew from a 7% share of the U.S. corn crop in 2001, to an estimated 40% share of the 2011 corn crop.[12] In 2007 (during the 2008 farm bill debate), about 23% of the U.S. corn crop was used for ethanol and 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, higher livestock feed costs, higher food costs, and lower U.S. agricultural exports. In addition, several environmental concerns emerged regarding the expansion of corn production onto non-traditional lands, including native grass and prairie land. As a result of these concerns, policy makers 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 feedstock, especially cellulosic-based feedstock.

Renewable energy policy in the 2008 farm bill became law six months after the enactment of the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140). A key component of EISA was a significant expansion of the renewable fuels standard (RFS), which mandates the increasing use of "advanced biofuels" (i.e., non-corn starch biofuels), whose minimum use must grow from zero in 2008 to 21 million gallons by 2022.[13] 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.

(...continued)

http://www.dsireusa.org/index.cfm.

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

[11] For a discussion of the rapid growth of the U.S. biofuels sector, see CRS Report R41282, *Agriculture-Based Biofuels: Overview and Emerging Issues*, *Agriculture-Based Biofuels: Overview and Emerging Issues*.

[12] USDA, *World Agricultural Supply and Demand Estimates (WASDE) Report*, February 10, 2014.

[13] See CRS Report R40155, *Renewable Fuel Standard (RFS): Overview and Issues*.

2014 Farm Bill—Extends Most Programs with New Funding

All of the major farm bill 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) extends most of the renewable energy provisions of the 2008 farm bill, with some notable exceptions. Key biofuels-related provisions in the enacted 2014 farm bill include

- §9002, which extends the bio-based marketing and federal bio-products certification programs to encourage federal procurement of bio-based products;
- §9003, which extends the Biorefinery Assistance Program with new funding;
- §9004, which extends the Repowering Assistance Program with new funding;
- §9005, which extends the Bioenergy Program for Advanced Biofuels with new funding;
- §9006, which extends the Biodiesel Fuel Education Program with new funding;
- §9007, which extends 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 includes a new provision which precludes the use of REAP funding for any mechanism for dispensing energy at the retail level—for example, blender pumps;
- §9008, which extends the Biomass Research and Development Initiative (BRDI) with new funding for biofuels research programs within USDA and the Department of Energy (DOE);
- §9009, which extends the Feedstock Flexibility Program;
- §9010, which extends the Biomass Crop Assistance Program (BCAP), including the Collection, Harvesting, Storage, and Transportation (CHST) component designed to incentivize the production of cellulosic ethanol feedstock;
- §9011, which repeals the Forest Biomass for Energy Program;
- §9012, which extends the Community Wood Energy Program with new funding;
- §9013, which repeals the Biofuels Infrastructure Study;
- §9014, which repeals the Renewable Fertilizer Study;
- §9015, which adds a new reporting requirement on energy use and efficiency at USDA facilities;
- §7212, which repeals the Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative; and
- §7526, which reauthorizes, 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 excludes the Rural Energy Self-Sufficiency Initiative of the 2008 farm bill by omission. Each of the above-cited programs is described in 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. For many of these programs, mandatory funding is provided through the borrowing authority of USDA's Commodity Credit Corporation (CCC).[14] 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-6**). 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 in FY2010, FY2011, and FY2012.[15]

The $1.1 billion of discretionary funding included $600 million for the Biorefinery Assistance Program. 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 exception of the Feedstock Flexibility Program for Bioenergy Producers (Section 9010), expired on September 30, 2012.[16]

Funding Under Continuing Resolutions for FY2013

The 112th Congress was unable to complete action on any of the regular FY2013 appropriations bills during 2012. Instead, a continuing resolution for the first half of FY2013 (CR, P.L. 112-175) was signed into law on September 28, 2012.[17] This was followed by a second CR to provide

[14] 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 mandatory versus discretionary authorizations, see CRS Report R43110, *Agriculture and Related Agencies: FY2014 Appropriations*.

[15] See CRS Report *Biomass Crop Assistance Program (BCAP): Status and Issues*.

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

[17] See CRS Report R42782, *FY2013 Continuing Resolutions: Analysis of Components and Congressional Action*.

appropriations for the second half of FY2013 (P.L. 113-6).[18] 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.[19] 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) contains a total of $694 million in new mandatory funding and authorizes $765 million to be appropriated for the various farm bill renewable energy programs (**Table A-5**). Details are provided in the discussion of individual provisions below.

Major Energy Provisions in the 2014 Farm Bill

The following 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) contains a distinct energy title (Title IX) that extends many of the previous bioenergy programs.[20] Four previous provisions are omitted or repealed, and a new provision, Section 9015, is 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.

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):

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

[19] A crop year refers to the year in which a commodity is harvested, and extends until the start of the succeeding year's harvest.

[20] For a side-by-side comparison of previous law with the energy provisions of the 2008 farm bill, see **Table A-7** at the end of this report.

- **"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;
- **"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;
- **"renewable chemical"—**defined as a monomer, polymer, plastic, formulated product, or chemical substance produced from renewable biomass; and
- **"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).

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

Function: The 2008 farm bill renamed the federal biobased procurements preference program as the Biobased Markets Program. It requires federal agencies to establish a program with specifications for procuring biobased products including a national registry of biobased testing centers, and authorized a voluntary labeling program under which producers of biobased products may use the label "USDA Certified Biobased Product." (7 U.S.C. §8102)

Under the Biobased Markets Program, federal agencies and their contractors are required to purchase biobased products when the cumulative purchase price of procurement is more than $10,000 or when the quantities of functionally equivalent items purchased over the preceding fiscal year equaled $10,000 or more. Each federal agency and contractor must procure biobased products at the highest content levels within each product category unless the agency determines that the items are not reasonably available, fail to meet applicable performance standards, or are available only at an unreasonable price.

Administered by: Office of Energy Policy and New Uses (OEPNU), Office of the Chief Economist (OCE), USDA.[21]

Program History: 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. USDA refers to the program as the BioPreferred® Program.[22] The final guidelines for the federal preferred procurement program were published on

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

[22] 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.

January 11, 2005 (70 *Fed. Reg.* 1792).[23] In addition to program guidelines, through June 11, 2013, USDA has promulgated 10 rounds of regulations for the BioPreferred® Program, designating 127 categories, with over 10,000 products qualifying for preferred federal procurement.[24]

The final rule for the voluntary labeling program for biobased products was published on January 20, 2011 (76 *Fed. Reg.* 3790).

Changes in 2014 Farm Bill: The 2014 farm bill (P.L. 113-79) extends 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); 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 a study and report by USDA to assess economic impact of biobased product industry (due 180 days after enactment); and encourages expedited coordination, review, and approval (with appropriate technical assistance) of forest-related biobased products.

Funding: Under the 2014 farm bill, mandatory Commodity Credit Corporation (CCC) funding of $3 million for each of FY2014-FY2018 was authorized for biobased products testing and labeling. Discretionary funding of $2 million was authorized to be appropriated for each of FY2014-FY2018. However, no discretionary funding has ever been appropriated for the Biobased Markets Program through FY2013.

Under the 2008 farm bill, mandatory Commodity Credit Corporation (CCC) funding of $9 million was authorized—including $1 million for FY2008 and $2 million for each of FY2009-FY2012—for biobased products testing and labeling. Discretionary funding of $2 million was authorized to be appropriated for each of FY2009-FY2012.

Under ATRA, no new mandatory funding was included for the Biobased Markets Program, while discretionary funding of $2 million was authorized to be appropriated for FY2013. However, no appropriations were made to this program 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

Function: Originally called the Biorefinery Assistance Program, this program assists in the development of new and emerging technologies for advanced biofuels.[25] 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

[23] This is an abridged citation for *Federal Register,* vol. 70, no. 7, pp. 1792-1812. This abridged format will be used throughout this report.

[24] Available at http://www.biopreferred.gov/ProductCategories.aspx.

[25] For more program information, see "Biorefinery Assistance Program," Business and Cooperative Programs (BCP), Rural Development (RD), USDA, at http://www.rurdev.usda.gov/BCP_Biorefinery.html.

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)

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

Program History: BAP was newly established under the 2008 farm bill. Mandatory funds are used for the loan guarantee portion of BAP, whereas discretionary appropriations are to be used to fund grants.[26] However, since Congress never appropriated any discretionary funds for BAP during the life of the 2008 farm bill, USDA has only moved forward with the loan guarantee portion of BAP.[27] The final rule for the BAP's guaranteed loans was published on February 14, 2011 (76 *Fed. Reg.* 8404). A correction was published on January 24, 2012 (77 *Fed. Reg.* 3379).

For loan guarantees, project lenders (not prospective borrowers) must submit the application.[28] 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). Average processing time per application is about nine months. Application fees include both a guarantee fee and an annual renewal fee.

Changes in 2014 Farm Bill: Renames the Biorefinery Assistance Program as the Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program. Funding for grants is eliminated. Also, P.L. 113-79 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.

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 for loan guarantees. Thus, there is no new baseline funding after FY2016. Discretionary funding of $75 million annually was authorized for FY2014-FY2018.

Under the 2008 farm bill, mandatory CCC funding of $75 million in FY2009 and $245 million in FY2010 (to remain available until expended) was authorized for loan guarantees. 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 ever appropriated for BAP through FY2013. Any mandatory funding unspent from the FY2010 allocation of $245 million remained available through FY2013.

Section 9004: Repowering Assistance Program (RAP)

Function: The Repowering Assistance Program (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

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

[27] See **Table A-1** for a list of USDA BAP funding notices.

[28] More information on the BAP loan guarantee applications is available at http://www.rurdev.usda.gov/SupportDocuments/BCP_9003_ApplicationGuide0311.doc.

processing or power in the operation of these eligible biorefineries.[29] Not more than 5% of the funds shall be made available to eligible producers with a refining capacity exceeding 150 million gallons of advanced biofuel per year. (7 U.S.C. §8104)

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

Implementation Status: 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.[30] 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.

The proposed rule for the Repowering Assistance Program was published on April 16, 2010 (75 *Fed. Reg.* 20073). After a comment period and subsequent modifications, an interim rule was published on February 11, 2011 (76 *Fed. Reg.* 7916). Individual project awards are limited to $5 million or 50% of total eligible project costs, whichever is less.

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

Funding: Under the 2014 farm bill, mandatory CCC funding of $12 million for FY2014 was authorized under the 2014 farm bill, to remain available until expended (i.e., no new baseline funding after FY2014). Discretionary funding of $10 million annually for FY2014-FY2018 was authorized to be appropriated.

Under the 2008 farm bill, mandatory CCC funding of $35 million for FY2009 was authorized, 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, only $15 million in FY2010 was appropriated through FY2013. 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

Function: 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—by entering into contracts with advanced biofuel producers to pay them for production of eligible advanced biofuels.[31] The policy goal is to create long-term, sustained increases in advanced biofuels production. (7 U.S.C. §8105)

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

[29] For more program information, see "Section 9004: Repowering Assistance Program," BCP, RD, USDA, at http://www.rurdev.usda.gov/BCP_RepoweringAssistance.html.

[30] See **Table A-2** for a list of USDA RAP funding notices.

[31] For more program information, see "Section 9005: Bioenergy Program for Advanced Biofuels," BCP, RD, USDA, at http://www.rurdev.usda.gov/BCP_Biofuels.html.

Program History: 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. Under the 2002 farm bill, mandatory CCC funding of $150 million was available for each of FY2002 through FY2006; however, no funding was authorized for FY2007, effectively terminating the program.

The 2008 farm bill's Section 9005 revived the bioenergy program but refocused its funding to non-corn-starch biomass sources. Producers of advanced biofuels enter into contracts with USDA to receive payments based on the quantity and duration of production of advanced biofuels, the net renewable energy content of the biofuel, and other factors. Only one producer per refinery is eligible to apply. The interim rule for the Bioenergy Program for Advanced Biofuels was published on February 11, 2011 (76 *Fed. Reg.* 7936).

Producers must submit records to document their production of advanced biofuels. Payments will be made in two tiers. The first tier is based on actual production, while the second tier is based on incremental increases in production as an incentive to expand annual production on a sustained basis. Program funding is to be distributed according to the two tiers: in FY2010 the first tier received 80% of available funds and the second tier receives 20%; in FY2011 the first tier received 70%, the second tier 30%; in FY2012 the first tier received 60%, the second tier 40%; in FY2013 and beyond, each tier receives 50%. Payments are capped per recipient to ensure equitable distribution. Not more than 5% of the funds in any year can go to facilities with total refining capacity exceeding 150 million gallons per year. Solid advanced biofuels produced from forest biomass are ineligible for the second tier incremental payment and may not receive more than 5% of annual program funds.

Since the program's inception, more than $211 million in assistance payments have been provided to over 290 advanced biofuel producers in 47 states.[32]

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

Funding: Under the 2014 farm bill, mandatory CCC funding of $15 million for each of FY2014-FY2018 was authorized to remain available until expended. Discretionary funding of $20 million annually for FY2014-FY2018 was authorized to be appropriated under the 2014 farm bill. However, no discretionary funding has ever been appropriated for the Bioenergy Program for Advanced Biofuels program through FY2013.

Under the 2008 farm bill, mandatory CCC funding of $55 million for 2009, $55 million for FY2010, $85 million for FY2011, and $105 million for FY2012 was authorized to remain available until expended. Discretionary funding of $25 million annually for FY2009-FY2013 was authorized to be appropriated under the 2008 farm bill and the ATRA extension; however, no discretionary funding was appropriated through FY2013. In the final FY2012 Agriculture appropriations act (P.L. 112-55), mandatory spending was limited to $65 million.

[32] "USDA Announces Support for Producers of Advanced Biofuel," USDA News Release No. 0177.13, Sept. 12, 2013.

Section 9006: Biodiesel Fuel Education Program

Function: The Biodiesel Fuel Education Program awards competitive grants to nonprofit organizations that educate governmental and private entities which operate vehicle fleets, and educates the public about the benefits of biodiesel fuel use. (7 U.S.C. §8106)

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

Program History: Originally established under the 2002 farm bill, the Biodiesel Fuel Education Program was extended by both the 2008 and 2014 farm bills. The program is implemented by USDA through continuation grants. The final rule for the program was published on September 30, 2003 (68 *Fed. Reg.* 56137).

On July 15, 2003, USDA published a request for applications for the Biodiesel Fuel Education Program for FY2003 (68 *Fed. Reg.* 41770). USDA awarded the original program grants to two entities: the National Biodiesel Board and the University of Idaho. Under the 2008 farm bill, NIFA obligated its funding to the same two entities for an initial period of one year, but has agreed to support their efforts through FY2012 contingent on the satisfactory progress of this project. The program is monitored by the USDA Biodiesel Education Oversight Committee, which includes a DOE representative.

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

Funding: Under the 2014 farm bill, mandatory CCC funds of $1 million are provided annually for FY2014-FY2018; discretionary funds of $1 million each for FY2014-FY2018 are authorized for appropriation under the 2014 farm bill.

Under the 2008 farm bill, mandatory CCC funds of $1 million were provided annually for FY2008-FY2013 under the 2008 farm bill and the ATRA extension.

Section 9007: Rural Energy for America Program (REAP)

Function: REAP provides financial assistance for:

- 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).

Renewable energy systems (RES) 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 (7 U.S.C. §8107).

REAP is administered by the Rural Business and Cooperative Service, RD, USDA.[33]

Program History

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). Certain provisions of REAP have been operating since 2005 under 7 C.F.R. part 4280, subpart B. Regulations for operating grants and loan guarantees under the 2002 farm bill's RES and EEI Program were published on July 18, 2005 (70 *Fed. Reg.* 41264). A series of *Federal Register* notices (cited below) were used to implement the REAP provisions in the 2008 farm bill (i.e., RES feasibility studies, energy audits, and renewable energy development assistance) until new regulations were implemented. On April 14, 2011, an interim rule for REAP was published (76 *Fed. Reg.* 21110) to consolidate the various REAP programs by including each part of the program in a single subpart based on USDA experience under the 2002 farm bill energy programs. The interim REAP rule includes several changes to previous implementation methods: both U.S. citizenship and the rural area location requirements were removed, and flexible fuel ("blender") pumps that dispense variable blends of petroleum and biofuels were included as viable renewable energy development projects. On April 12, 2013, USDA published a proposed rule for administering the grants and guaranteed loans program.[34]

During deliberations on the FY2012 Agriculture Appropriations Act (P.L. 112-55), the House had agreed, by a recorded vote of 283 to 128, to an amendment (H.Amdt. 475) to its version of the FY2012 appropriations act, H.R. 2112, that would have prohibited the use of funds for the construction of ethanol blender pumps or ethanol storage facilities. On June 16, 2011, the Senate considered a similar amendment (S.Amdt. 411) to separate, unrelated legislation (S. 782) that would have prohibited the use of REAP funds for the construction of ethanol blender pumps or ethanol storage facilities. However, the amendment was not agreed to in the full Senate by a 41-59 vote. Furthermore, the House prohibition on use of REAP funds for blender pumps or ethanol storage facilities was not included in the final FY2012 Agriculture Appropriations Act (P.L. 112-55). However, by modifying the definition of a qualifying renewable energy system, the 2014 farm bill excludes blender pumps and any other mechanism for dispensing energy at retail from access to REAP funding.

According to USDA, more than 8,000 awards were made under REAP programs (and their predecessor) from FY2003 through FY2011, spanning all agricultural sectors in all states including more than $339 million in grants and $262 million in loan guarantees. During that period, REAP funds have helped more than 13,000 rural small businesses and agricultural

[33] See http://www.rurdev.usda.gov/BCP_Reap.html.

[34] USDA, "Rural Energy for America Program—Grants and Guaranteed Loans; Proposed Rule," *Federal Register,* Vol. 78, No. 71, April 12, 2013.

producers and funded more than 1,000 solar projects and more than 560 wind projects.[35] See **Table A-4** for a list of USDA REAP funding notices.

Changes in 2014 Farm Bill: Extends REAP through FY2018, plus, adds 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 are authorized for FY2014 and each fiscal year thereafter (thus 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.

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, $40 million in FY2010, $5 million in FY2011, and $3.4 million in FY2012.

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 discretionary funding was authorized at $3.4 million, split 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)

Function: BRDI—created originally under the Biomass Research and Development Act of 2000 (BRDA, P.L. 106-224)—provides competitive funding in the form of grants, contracts, and financial assistance for research, development, and demonstration of technologies and processes leading to significant commercial production of biofuels, biobased energy innovations, development of biobased feedstocks, biobased products, and other such related processes, including development of cost-competitive cellulosic ethanol. 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

[35] USDA News Release No. 0099.12, March 20, 2012.

evaluation.[36] 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)

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

Program History: Since 2002 USDA and DOE jointly have announced annual solicitations and awards of funding allocations under BRDI.[37] Under 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.[38] The minimum cost-share requirement for demonstration projects was increased to 50%, and for research projects to 20%.

From FY2002 through FY2010, more than $202 million was awarded to 110 projects, including $91.5 million from USDA and $111.1 million from DOE. During the FY2011 to FY2013 period, USDA announced another $103 million in awards to 17 additional projects.[39]

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

Funding: The 2014 farm bill authorizes mandatory funding (to remain available until expended) of $3 million for four fiscal years—FY2014-FY2017—that is, baseline funding authority expires after FY2017. Discretionary funding of $20 million is authorized to be appropriated annually for FY2014-FY2018. However, no discretionary funding has ever been appropriated for BRDI through FY2013.

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. The FY2012 Agriculture appropriations act (P.L. 112-55) did not make any cuts to the $40 million in mandatory funding for BRDI.

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

Function: The Feedstock Flexibility Program required that USDA establish (in FY2008) and administer a sugar-for-ethanol program using sugar intended for food use but deemed to be in

[36] For more information on the Biomass Research and Development Board, the Technical Advisory Committee, and project selection, visit http://www.usbiomassboard.gov/.

[37] For BRDI current FY2011 and historical (FY2002-FY2010) solicitations and awards visit http://www.usbiomassboard.gov/initiative/past_solicitations.html.

[38] For details on BRDI technical areas see http://www.nifa.usda.gov/nea/plants/in_focus/biobased_if_brdi.html.

[39] See USDA News Releases on Biomass Research and Development Grants dated: January 11, 2013; July 25, 2012, and May 5, 2011.

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 CFR 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.

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

Program History: The FFP was implemented 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: Extends 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 were to be made available. Funding authority was extended through FY2013 by ATRA.

Section 9010: Biomass Crop Assistance Program (BCAP)

Function: The Biomass Crop Assistance Program (BCAP) provides financial assistance to owners and operators of agricultural land and non-industrial 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 75% of the cost of establishment for perennial crops, and annual payments (i.e.,

[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, and CRS Report R42535, *Sugar Program: The Basics.*

[42] For more information, see CRS Report R41296, *Biomass Crop Assistance Program (BCAP): Status and Issues*.

[43] Farm Service Agency, USDA, "Biomass Crop Assistance Program (BCAP), "Fact Sheet," at http://www.fsa.usda.gov/Internet/FSA_File/bcap_update_may2011.pdf.

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 $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 non-industrial 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)

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

Program History: On May 5, 2009, President Barack Obama issued a directive addressing a variety of advanced biofuel priorities including the implementation of matching payments for CHST of eligible materials for biomass conversion. On June 11, 2009, USDA published a NOFA (74 *Fed. Reg.* 27767) to implement the CHST matching payments component of BCAP. The NOFA was terminated on February 3, 2010, and, on February 8, 2010, USDA published a proposed rule for BCAP (75 *Fed. Reg.* 6264). The final rule was published on October 27, 2010 (74 *Fed. Reg.* 27767), and implements the full BCAP program, including the annual and establishment payment. USDA, as required by the 2008 farm bill, submitted a report to the House and Senate Agriculture Committees in February 2013 on the dissemination of the best practice data and information gathered from participants receiving assistance under BCAP.[45]

No BCAP payments were made in FY2008; however, through FY2012, nearly $900 million had been paid out to projects in 31 states.[46] As of June 2012, USDA had selected 11 BCAP project areas and continued to enroll producers for annual and establishment payments. However, due to the reduced funding availability imposed by limitations on the availability of mandatory funding through the annual appropriations process (see above discussion), USDA published an interim

[44] See FSA, USDA, "BCAP Project Area Information," at http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap-pjt.

[45] FSA, USDA, *BCAP: Biomass Crop Assistance Program: Energy Feedstocks From Farmers & Foresters*," February 2013; available at https://www.fsa.usda.gov/Internet/FSA_File/bcap_documentation.pdf

[46] For funding and other program details, see CRS Report R41296, *Biomass Crop Assistance Program (BCAP): Status and Issues*.

rule on September 15, 2011 (76 *Fed. Reg.* 56949), amending the BCAP regulation to provide specifically for prioritizing limited program funds in favor of the ''project area'' portion of BCAP. The limited funding available for BCAP means that not all BCAP requests can be funded. The interim rule explicitly provides a priority for funding establishment and annual payments for project area activities because "such activities will produce the greatest long term good in BCAP by providing an ongoing supply of new biomass."[47] Under the interim rule, matching payments for CHST would be funded only if resources are available after funding all eligible project area applications. The interim rule also enables prioritization among project area proposals if eligible requests exceed available funding.

Changes in 2014 Farm Bill: Extends BCAP through FY2018. Changes enrolled land eligibility by including land under expiring CRP or ACEP easement contracts; 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/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 another 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. Under the 2008 farm bill, mandatory CCC funds of such sums as necessary were made available for each of FY2008-FY2012. Outlays were to depend on the number of participants. The 2010 Supplemental Appropriations Act (P.L. 111-212) 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.

With respect to FY2012 funding, the President's FY2012 budget proposed to limit funding for CHST to $70 million. The remaining annual and establishment payment portion of BCAP would remain at such sums as necessary (SSAN). On June 16, 2011, the House passed an FY2012 appropriations bill (H.R. 2112) that would have eliminated funding for BCAP for FY2012. In contrast, the Senate FY2012 spending bill left BCAP mandatory spending untouched. In the final FY2012 Agriculture Appropriations Act (P.L. 112-55), BCAP mandatory spending was limited to $17 million.

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

Section 9011: Forest Biomass for Energy (Repealed)

Function: The Forest Biomass for Energy program is 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 are

[47] *Federal Register*, Vol. 76, No. 179, Thursday, September 15, 2011, p. 56949.

eligible to compete for program funds. Priority is 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)

Administered by: Forest Service, USDA.

Program History: The Forest Service never announced any regulations for this program. The President's FY2011 and FY2012 budget proposed to fund both the Forest Biomass for Energy Program and the Community Wood Energy Program using funds from the Hazardous Fuels Program (Wildland Fire Management) within the Forest Service.

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

Funding: Program funding authority expired after FY2013. 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 ever appropriated through FY2013.

Section 9012: Community Wood Energy Program

Function: The Community Wood Energy Program provides matching grants 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)

Administered by: Forest Service, USDA.

Program History: The Forest Service has pursued the implementation of this program using funding from their overall State & Private appropriation.[48] An agency working group is developing the work plan for the Community Wood Energy Program, coordinating with Rural Development (RD) to ensure the new program is complementary with other biomass energy programs administered by RD. The President's FY2011 budget proposed to fund both the Forest Biomass for Energy Program and the Community Wood Energy Program using funds from the Hazardous Fuels Program (Wildland Fire Management) within the Forest Service. The President's FY2012 budget proposal included a similar request to fund both programs using the Hazardous Fuels Program—$15 million was requested for the Forest Biomass for Energy Program and $3.75 million for the Community Wood Energy Program.

Changes in 2014 Farm Bill: Extends the Community Wood Energy Program through FY2018; defines 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 requires that any biomass consumer cooperative that receives a grant

[48] Farm Bill Working Group, Office of Budget and Program Analysis, USDA, "Highlights: Title IX-Energy," October 26, 2009.

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, discretionary funding of $5 million annually was authorized to be appropriated for FY2014-FY2018. No mandatory funding was included.

Under the 2008 farm bill, discretionary funding of $5 million annually was authorized to be appropriated for FY2009-FY2013. ATRA extended the program through FY2013 but no funding has been appropriated to date. However, the Forest Service awarded $49 million in funding from the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) for wood-to-energy projects, and the appropriations committee reports in FY2010 and FY2011 directed the use of $5 million in Hazardous Fuels funds for biomass energy projects.

Section 9013: Biofuels Infrastructure Study (Repealed)

Function: 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.

Program History: No funding was ever appropriated for this activity.

Changes in 2014 Farm Bill: The Biofuels Infrastructure Study requirement is 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)

Function: 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.

Program History: This report was never undertaken.

Changes in 2014 Farm Bill: The Renewable Fertilizer Study requirement is 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

Function: Within 180 days after enactment, USDA must submit a report to the House and Senate Agriculture Committees on energy use and energy efficiency projects at USDA facilities.

New Provision in 2014 Farm Bill: Requires a new report by USDA on energy use and energy efficiency projects at USDA facilities.

Funding: No specific funding was authorized for this study by the 2014 farm bill.

No Provision: Rural Energy Self-Sufficiency Initiative

Function: The Rural Energy Self-Sufficiency Initiative was designed to assist rural communities with community-wide energy systems that reduce conventional energy use and increase the use of energy from renewable sources. Grants are available to assess energy use in a rural community, evaluate ideas for reducing energy use, and develop and install integrated renewable energy systems. Grants are not to exceed 50% of the total cost of the activity. (7 U.S.C. §8109)

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

Program History: 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; hence 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 and are described here.

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

Function: 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 use as fertilizer, methane digestion, composting, and other useful byproducts. (7 U.S.C. §5925a)

Administered by: USDA.

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

2014 Farm Bill Funding: No new funding since the program is repealed.

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 repeals the Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative.

2014 Farm Bill Funding: No new funding since the program is repealed.

Section 7516: Sun Grant Program

Function: 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.[49] Competitive grants are available to land-grant schools within each region to be used towards 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 (Section 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 (a north-central center at South Dakota State University; a southeastern center at the University of Tennessee; a south-central center at Oklahoma State University; a western center at Oregon State University; and a northeastern center at Cornell University), 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 a sixth regional center—a Western Insular Pacific Sub-Center at the University of Hawaii. The designation of specific universities as regional centers is removed by the 2014 farm bill. (7 U.S.C. §8114)

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.

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

Program History: As of October 2011, SGI had more than 130 field studies on biomass feedstocks currently underway with locations in more than 90% of the states.

Since NIFA has been assigned the authority to administer the program, awards made under the Sun Grant Program are subject to NIFA's assistance regulations at 7 C.F.R. part 3430 as announced on November 18, 2010 (Competitive and Noncompetitive Nonformula Federal Assistance Programs—Administrative Provisions for the Sun Grant Program, 75 *Fed. Reg.* 70578).

Changes in 2014 Farm Bill: The 2014 farm bill extends the Sun Grant Program with its current 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. Under the 2008 farm bill, discretionary funding of $75 million annually was authorized to be appropriated for FY2008-FY2012. However, only $2.25 million for FY2010 and $2.2 million for FY2012 were appropriated. No new funding authority was included in ATRA.

Appendix. Supplementary Tables

Table A-1. Biorefinery Assistance Program: Notice of Funds Available (NOFA)

Fiscal Year	Federal Register	Date Announced	Amount	# of Projects Selected	Guaranteed Loan Value
2009	75 *Fed. Reg. 70544*	Nov. 20, 2008	$75 million	2[a]	$139 million
2010	75 *Fed. Reg. 25076*	May 6, 2010	$150 million	4[b]	$255 million
2011	76 *Fed. Reg. 13351*[c]	Mar. 11, 2011	$129 million	NA[d]	NA
2012	77 *Fed. Reg.* 4276	Jan. 27, 2012	$0	—	—
2013	78 *Fed. Reg.* 60822	Oct. 2, 2013	$76 million[e]	NA[f]	$181 million

Source: *Federal Register*.

Notes: Funding is for guaranteed loans. NA = not available.

a. Initially three projects were selected; however, one was dropped due to ineligibility (a biodiesel retrofit project in Minnesota).

b. Of the six current projects, four are cellulosic biofuel plants, one is an anaerobic digester, and one is an algae-to-diesel or jet fuel project.

c. On June 6, 2011, an extension of the NOFA applications deadline to July 6, 2011, was published (76 *Fed. Reg.* 32355).

d. As of the closing date for applications (July 6, 2011), USDA had received 13 applications valued at $1.3 billion in requested funding.

e. Carry-over budget authority.

f. Applications-for-funding deadline was January 30, 2014.

Table A-2. Repowering Assistance Program: Notice of Funds Available (NOFA)

Fiscal Year	Federal Register	Date Announced	Amount
2009	74 *Fed. Reg. 28009*	June 12, 2009	$20 million
2010	75 *Fed. Reg. 24873*	May 6, 2010	$8 million
2011	76 *Fed. Reg. 13349*	Mar. 11, 2011	$25 million
2012	77 *Fed. Reg. 5232*	Feb. 2, 2012	$25 million
2013	None	—	—

Source: *Federal Register*.

Notes: Funding is for guaranteed loans. NA = not available.

Table A-3. Bioenergy Program for Advanced Biofuels: Notice of Contract Proposals

Fiscal Year	Federal Register	Date Announced	Amount
2009	74 *Fed. Reg.* 27998 75 *Fed. Reg.* 11836	June 12, 2009 Mar. 10, 2010	$30 million
2010	75 *Fed. Reg.* 24865 76 *Fed. Reg.* 7966	May 6, 2010 Feb. 11, 2011	$80 million[a]
2011	76 *Fed. Reg.* 13345	Mar. 11, 2011	$85 million
2012	77 *Fed. Reg.* 5229	Feb. 2, 2012	$25 million[b]
2013	78 *Fed. Reg.* 34975	June 11, 2013	$98.6 million[c]

Source: *Federal Register*.

Notes: Contract proposals (NOCPs) and awards to biorefineries for the production of advanced biofuels

a. The initial FY2010 NOCP was for $40 million; however, this was was cancelled due to rural location and citizenship requirements. These requirements were removed in the interim rule of Feb. 11, 2011, and replaced with a new NOCP for $80 million.

b. USDA announced that, although the 2008 farm bill provided $105 million in mandatory funding to support payments for advanced biofuels projects in FY2012, the FY2012 Appropriations Act imposed a limitation of $65 million that can be used for this program in FY2012. As a result, approximately $40 million of mandatory funding would be used to pay producers for FY2011 fourth quarter and other incremental payments.

c. This amount includes FY2013 awards of $68.6 million and $30 million for production from prior fiscal years.

Table A-4. Rural Energy for America Program (REAP): NOSA & NOFA Announcements

Fiscal Year	Federal Register			Amount ($ millions)		
	Type	#	Date	Total	Grant	Loan Guarantee
2009	NOSA	74 *Fed. Reg.* 10533	Mar. 11, 2009	$2.4	$2.4	$0
	NOSA	74 *Fed. Reg.* 24769	May 26, 2009	$60	$60	$0
2010	NOSA	75 *Fed. Reg.* 21584	Apr. 26, 2010	$88	Unspecified	Unspecified
	NOFA	75 *Fed. Reg.* 29706	May 27, 2010	$2.4	$2.4	$0
	NOFA	75 *Fed. Reg.* 47525	Aug. 6, 2010	$3	$3	$0
2011	NOFA	76 *Fed. Reg.* 20943	Apr. 14, 2011	$70	at least $42	remainder
2012	NOFA	77 *Fed. Reg.* 2948	Jan. 20, 2012	$25.4	at least $12.5	remainder
2013	NOFA	78 *Fed. Reg.* 19183	Mar. 29, 2013	$20.8	at least $10.4	remainder

Source: *Federal Register*.

Notes: NOSA = Notice of Solicitation of Applications; NOFA = Notice of Funds Available; NA

Table A-5. 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 FY14-FY18
§9002	Federal Biobased Markets Program	M	3	3	3	3	3	15
		D[b]	2	2	2	2	2	10
§9003	Biorefinery Assistance Program	M[c]	100	50	50	0	0	200
		D[b]	75	75	75	75	75	375
§9004	Repowering Assistance Program	M[c]	12	0	0	0	0	12
		D[b]	10	10	10	10	10	50
§9005	Bioenergy Program for Adv. Biofuels	M[c]	15	15	15	15	15	75
		D[b]	20	20	20	20	20	100
§9006	Biodiesel Fuel Education Program	M	1	1	1	1	1	5
		D[b]	1	1	1	1	1	5
§9007	Rural Energy for America Prog. (REAP)	M[c]	50	50	50	50	50	250
		D[b]	20	20	20	20	20	100
§9008	Biomass Research and Dev. Act (BRDA)	M[c]	3	3	3	3	0	12
		D[b]	20	20	20	20	20	100
§9009	Feedstock Flexibility Prog. for Bioenergy Production[d]	M	SSAN[e]	SSAN	SSAN	SSAN	SSAN	SSAN
§9010	Biomass Crop Assistance Prog. (BCAP)	M	25	25	25	25	25	125
		D	0	0	0	0	0	0
§9012	Community Wood Energy Program	D[b]	5	5	5	5	5	25
§9015	Energy Efficiency Report for USDA facilities	Unfunded						
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: §9011, Forest Biomass for Energy; §9013, Biofuels Infrastructure Study; §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 §7210, the Biofeedstock and Energy Efficiency Research and Extension Program was repealed by §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: §9003, §9004, §9005, §9007, and §9008.

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

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

Table A-6. Authorized Funding for 2008 Farm Bill Title IX Energy Provisions, FY2008-FY2012[b]

(budget authority in $ millions)

Section[a]	Provision Name	Type	FY08	FY09	FY10	FY11	FY12	Total
§9002[a]	Federal Biobased Markets Program	Mand.	1	2	2	2	2	9
		Discr.[c]	0	2	2	2	2	8
§9003[a]	Biorefinery Assistance Program	Mand.	0	75	245	0	0	320
		Discr.[c]	0	150	150	150	150	600
§9004[a]	Repowering Assistance Program	Mand.	0	35	0	0	0	35
		Discr.[c]	0	15	15	15	15	60
§9005[a]	Bioenergy Program for Adv. Biofuels	Mand.	0	55	55	85	105	300
		Discr.[c]	0	25	25	25	25	100
§9006[a]	Biodiesel Fuel Education Program	Mand.	1	1	1	1	1	5
§9007[a]	Rural Energy for America Prog. (REAP)	Mand.	0	55	60	70	70	255
		Discr.[c]	0	25	25	25	25	100
§9008[a]	Biomass Research and Dev. Act (BRDA)	Mand.	0	20	28	30	40	118
		Discr.[c]	0	35	35	35	35	140
§9009[a]	Rural Energy Self-Sufficiency Initiative	Discr.[c]	0	5	5	5	5	20
§9010[a]	Feedstock Flex. Prog. for Bioenergy Prod.	Mand.	SSAN	SSAN	SSAN	SSAN	SSAN	SSAN
§9011[a]	Biomass Crop Assistance Prog. (BCAP)	Mand.	SSAN	SSAN	SSAN[d]	SSAN[d]	SSAN[d]	SSAN
§9012[a]	Forest Biomass for Energy	Discr.[c]	0	15	15	15	15	60
§9013[a]	Community Wood Energy Program	Discr.[c]	0	5	5	5	5	20
§9002	Biofuels Infrastructure Study	None	0	0	0	0	0	0
§9003	Renewable Fertilizer Study	Discr.[c]	0	1	0	0	0	1
Total Discretionary Funding Authorized[c]			**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: "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. 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 1st 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 2nd half of FY2013.

c. 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.

d. 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 (P.L. 112-55) reduced BCAP funding to 17 million for FY2012.

Table A-7. 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. ***[Sec. 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. ***[Sec. 9001]***
Biofuel. A fuel derived from renewable biomass. ***[7 U.S.C. 8101(5)]***	Same as prior law. ***[Sec. 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. ***[Sec. 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. ***[Sec. 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. ***[Sec. 9001]***
Renewable Biomass. Includes- (A) materials, pre-commercial 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 (B) any organic matter available on a recurring basis from non-federal 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. ***[Sec. 9001]***
No comparable definition.	**Renewable Chemical.** A monomer, polymer, plastic, formulated product, or chemical substance produced from renewable biomass. ***[Sec. 9001]***
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. ***[Sec. 9001]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
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). ***[Sec. 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 1 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. ***[Sec. 9002]***
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 Sec. 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. ***[Sec. 9003]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
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. ***[Sec. 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. ***[Sec. 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. ***[Sec. 9006]***
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. ***[Sec. 9007]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
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. ***[Sec. 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 would expire 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. ***[Sec. 9009]***
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: (A) 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 (B) 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/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. ***[Sec. 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. ***[Sec. 9011]***

Prior Law/Policy—Energy	Enacted 2014 Farm Bill (P.L. 113-79)
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. ***[Sec. 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. ***[Sec. 9002 of P.L. 110-246]***	Repeals the requirement to conduct the study (and report). ***[Sec. 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. ***[Sec. 9003 of P.L. 110-246]***	Requirement to conduct the study is repealed. ***[Sec. 9014]***
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. ***[Sec. 9015]***

Source: Title IX- Energy, The 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.*

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