

CRS Report for Congress

Biofuels Provisions in the 2007 Energy Bill and the 2008 Farm Bill: A Side-by-Side Comparison

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Prepared for Members and
Committees of Congress

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Summary

The Energy Independence and Security Act of 2007 (EISA, P.L. 110-140), also known as the 2007 energy bill, significantly expands existing programs to promote biofuels. The Food, Conservation, and Energy Act of 2008 (P.L. 110-246), also known as the 2008 farm bill, contains a distinct energy title (Title IX) that covers a wide range of energy and agricultural topics with extensive attention to biofuels, including corn-starch based ethanol, cellulosic ethanol, and biodiesel. Research provisions relating to renewable energy are found in Title VII and tax provisions are found in Title XV of the farm bill.

Key biofuels-related provisions of EISA and the 2008 farm bill include:

- a major expansion of the renewable fuel standard (RFS) established in the Energy Policy Act of 2005 (P.L. 109-58) [EISA];
- expansion and/or modification of tax credits for ethanol [farm bill];
- grants and loan guarantees for biofuels (especially cellulosic) research, development, deployment, and production [EISA, farm bill];
- studies of the potential for ethanol pipeline transportation, expanded biofuel use, market and environmental impacts of increased biofuel use, and the effects of biodiesel on engines [EISA, farm bill];
- expansion of biofuel feedstock availability [farm bill];
- reauthorization of biofuels research and development at the U.S. Department of Energy [EISA] and the U.S. Department of Agriculture and Environmental Protection Agency [farm bill]; and
- reduction of the blender tax credit for corn-based ethanol, a new production tax credit for cellulosic ethanol, and continuation of the import duty on ethanol [farm bill].

This report includes information from CRS Report RL34130, *Renewable Energy Policy in the 2007 Farm Bill*, by Randy Schnepf and Tom Capehart, and CRS Report RL34136, *Biofuels Provisions in the Energy Independence and Security Act of 2007 (P.L. 110-140), H.R. 3221, and H.R. 6: A Side-by-Side Comparison*, by Brent D. Yacobucci.

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Introduction

Recent high energy prices, concerns over energy security, and the desire to promote rural business and to reduce air pollutant and greenhouse gas emissions have sparked congressional interest in promoting greater use of alternatives to petroleum fuels. Biofuels — transportation fuels produced from plant and animal materials — have attracted particular interest. Ethanol and biodiesel, the two most widely used biofuels, receive significant federal support in the form of tax incentives, loan and grant programs, and regulatory programs.¹

The Energy Policy Act of 2005 (EPAct, P.L. 109-58) established a renewable fuel standard (RFS). This initial RFS required the increasing use of renewable fuel in gasoline, starting at 4.0 billion gallons in 2006 and increasing to 7.5 billion gallons in 2012. However, the RFS was significantly expanded on December 19, 2007, when President Bush signed the Energy Independence and Security Act of 2007 (EISA). Instead of requiring 5.4 billion gallons of renewable fuel in 2008, the new law requires 9.0 billion gallons. Further, the 2007 law requires that the RFS be expanded to 36 billion gallons of renewable fuel by 2022, as compared to an estimated 8.6 billion gallons under EPAct. Although this is not an explicit ethanol mandate, it is expected that much of this requirement will be met using corn-based ethanol.² The U.S. ethanol industry expanded rapidly in response to EPAct, outpacing the required growth in the earlier RFS and leading some proponents of corn-based ethanol to support an increase in the mandated levels of the RFS.

The Food, Conservation, and Energy Act of 2008 (2008 farm bill, P.L. 110-246) promotes the development of cellulosic ethanol production through new blender tax credits, reduces slightly the production tax credit for corn-derived ethanol when production reaches 7.5 billion gallons, and continues the tariff on imported ethanol. It also expands research on agricultural renewable energy and encourages infrastructure development needed for cellulosic ethanol production.

During the final months of the farm bill debate, both food and fuel prices increased dramatically, and the role of corn-based ethanol in food price inflation

¹ For more information on federal biofuels incentives, see CRS Report RL33572, *Biofuels Incentives: A Summary of Federal Programs*, by Brent D. Yacobucci.

² For more information on ethanol, see CRS Report RL33290, *Fuel Ethanol: Background and Public Policy Issues*, by Brent D. Yacobucci.

became a subject of intense debate. Because of the rapid expansion of U.S. corn ethanol capacity — as of May 28, 2008, existing capacity was an estimated at 8.7 billion gallons per year, while an additional 4.9 billion gallons was under construction³ — some are concerned that the United States will soon reach the limit of ethanol that can be produced from corn. Critics of corn-based ethanol argue that the industry does not need continued government support, and that current corn demand for ethanol is putting a strain on corn and other grain markets, leading to increases in other commodity prices, such as livestock feed, which then leads to higher dairy and meat prices.⁴ Critics also argue that the environmental costs of corn-based ethanol may outweigh the benefits. Proponents of corn-based ethanol production assert that increased acreage and upward-trending yields will enable corn producers to satisfy the demand for corn for feed, fuel, and exports.

Advanced biofuels based on non-food feedstocks are generating much interest. Feedstocks that could be grown on marginal land with reduced inputs compared with corn would solve the food versus fuel issue, it has been argued. However, biofuels that rely on other sources of biomass, including agricultural wastes, municipal solid waste, and dedicated non-food energy crops such as perennial grasses, fast-growing trees, and algae are still years from commercial production. Nonetheless, this interest has led to proposals to support and/or mandate biofuels produced from feedstocks other than corn starch through explicit requirements, research, development and extension funding, and/or tax incentives.⁵ Non-corn biofuels could include fuels produced from cellulosic material (such as perennial grasses), ethanol produced from sugarcane or beets, and biodiesel or renewable diesel produced from vegetable or animal oils.⁶ Under EISA, eligible corn-based ethanol production is capped at 15 billion gallons by 2015. Starting in 2009, the RFS will require that an increasing amount of the mandate be met through the use of “advanced biofuels” — biofuels produced from feedstocks other than corn starch.

Key Elements of EISA and the 2008 Farm Bill

The following table provides a side-by-side comparison of biofuels-related provisions in EISA with the enacted farm bill — the Food, Conservation, and Energy Act of 2008. President Bush signed EISA on December 19, 2007, and the Food, Conservation, and Energy Act of 2008 became law on June 18, 2008, after President

³ Renewable Fuels Association, [<http://www.ethanolrfa.org/industry/locations>].

⁴ For more information on the issues surrounding rapid ethanol expansion, see CRS Report RL33928, *Ethanol and Biofuels: Agriculture, Infrastructure, and Market Constraints Related to Expanded Production*, by Brent D. Yacobucci and Randy Schnepf.

⁵ Non-corn-starch feedstocks include other parts of the corn plant, such as the husks and the stalks, which are high in cellulose.

⁶ For more information on biodiesel, see CRS Report RL32712, *Agriculture-Based Renewable Energy Production*, by Randy Schnepf.

Bush's veto was overridden by both the Senate and the House.⁷ Both bills cover a wide range of energy and agricultural topics in addition to biofuels.

The table is organized in the same order as EISA, followed by provisions that are exclusively in the enacted farm bill.

Key biofuels-related provisions of EISA and the 2008 farm bill include:

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- grants and loan guarantees for biofuels (especially cellulosic) research, development, deployment, and production [EISA, farm bill];
- studies of the potential for ethanol pipeline transportation, expanded biofuel use, market and environmental impacts of increased biofuel use, and the effects of biodiesel on engines [EISA, farm bill];
- expansion of biofuel feedstock availability [farm bill];
- reauthorization of biofuels research and development at the U.S. Department of Energy [EISA] and the U.S. Department of Agriculture and Environmental Protection Agency [farm bill]; and
- reduction of the blender tax credit for corn-based ethanol, a new production tax credit for cellulosic ethanol, and continuation of the import duty on ethanol [farm bill].

⁷ The conference agreement on the 2008 farm bill was originally approved by the House and the Senate as H.R. 2419 and vetoed by the President in May 2008. Both chambers overrode the veto, making the bill law (P.L. 110-234). However, the trade title was inadvertently excluded from the enrolled bill. To remedy the situation, both chambers repassed the farm bill conference agreement (including the trade title) as H.R. 6124. The President vetoed the measure in June 2008 and both chambers again overrode the veto, which made H.R. 6124 law (P.L. 110-246), and repealed P.L. 110-234.

Table 1. Comparison of Current or Prior Law with Biofuels Provisions in EISA and the Enacted Farm Bill

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
P.L. 110-140, Title I — Energy Security Through Improved Fuel Economy			
Consumer Information	No prior provision.	The Dept. of Transportation is required to carry out an educational program to inform consumers about the fuel savings and emissions benefits of new vehicles, including the benefits from the use of alternative fuels. [Sec. 105]	No comparable provision.
Fuel Tank Labeling Requirement	No prior provision.	Requires the Dept. of Transportation to issue a final rule by June 2011 requiring automakers to clearly label the fuel compartment of alternative fuel vehicles with the form of alternative fuel stated on the label. [Sec. 105]	No comparable provision.
Extension of Flexible Fuel Vehicle Credit Program / Biodiesel as Alternative fuel for CAFE Purposes	Under the Corporate Average Fuel Economy (CAFE) program, automakers may generate credits toward their compliance for the production and sale of alternative fuel vehicles, as defined in law. Currently, B20 (a blend of 20% biodiesel and 80% petroleum diesel) vehicles are not considered alternative fuel vehicles. [49 U.S.C. 32901 et seq.]	Amends the CAFE program to extend alternative fuel vehicle credits through model year 2019, at a declining rate. Also allows vehicles capable of operating on B20 to be treated as vehicles eligible for CAFE credits. Expanding the definition of alternative fuel vehicle to include B20 could make all diesel passenger cars and light trucks eligible for credits under CAFE. Currently, some diesel passenger vehicles are warranted to run on B5, but few technical barriers exist to make new diesel vehicles B20-capable. [Sec. 109]	No comparable provision.
P.L. 110-140, Title II — Energy Security Through Increased Production of Biofuels			
Renewable Fuel Standard	The Energy Policy Act of 2005 established a Renewable Fuel Standard (RFS) which requires the use of an	Amends the RFS to include all transportation fuels (except for fuels used in ocean-going vessels). Expands the existing requirement to 9.0	No comparable provision.

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
	<p>increasing amount of renewable fuels in gasoline. The mandate increases from 4.0 billion gallons in 2006 to 7.5 billion gallons in 2012. Starting in 2013, the proportion of renewable fuel to gasoline must equal or exceed the proportion in 2012. Starting in 2013, of the amount mandated above, at least 250 million gallons must be fuel derived from cellulosic material. [P.L. 109-58, Sec. 1501], [42 U.S.C. 7545]</p>	<p>billion gallons in 2008, increasing to 36 billion gallons in 2022. Requires renewable fuels produced at new facilities to have at least 20% lower lifecycle greenhouse gas (GHG) emissions than petroleum fuels. Starting in 2009, requires that an increasing amount of the above mandate be met using “advanced biofuels,” defined as biofuels derived from feedstocks other than corn starch with 50% lower lifecycle GHG emissions. By 2022, requires 21 billion gallons of advanced biofuel. Of the advanced biofuel mandate, specific carve-outs are made for cellulosic fuels and biomass-derived diesel substitutes. [Sec. 202]</p>	
<p>Study of Impact of Increased Renewable Fuel Use</p>	<p>By August 2009, EPA must publish a draft analysis of the effects of the fuels provisions in P.L. 109-58 on air pollutant emissions and air quality. [P.L. 109-58, Sec. 1505], [42 U.S.C. 7545(b)]</p> <p>EPA is required to conduct a survey to determine the market share of gasoline containing ethanol and other renewable fuels. [P.L. 109-58, Sec. 1501(c)], [42 U.S.C. 7545]</p> <p>DOE is required to collect and publish monthly survey data on the production, blending, importing, demand, and price of renewable fuels, both on a national and regional basis. [P.L. 109-58, Sec. 1508], [42 U.S.C. 7135]</p>	<p>DOE, in consultation with USDA and EPA, is required to enter into an agreement with the National Academy of Sciences (NAS) to study the impacts of the RFS on industries related to feed grains, livestock, food, forest products, and energy. The NAS study must assess the likely effects on domestic animal agriculture and policy options to alleviate negative effects; identify agricultural conditions that would warrant a waiver of the RFS requirements; and make recommendations to limit adverse economic impacts from the RFS. [Sec. 203]</p>	<p>Comprehensive Study of Biofuels — The Dept. of Treasury, with DOE, USDA, and EPA shall have the National Academy of Sciences analyze scientific findings on current and future biofuels production, impacts, trends, and policies. [Sec. 15322]</p>

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
Environmental and Resource Conservation Impacts	No prior provision.	EPA, in consultation with the USDA and DOE, must study the impacts of the RFS on environmental issues, resource conservation issues, and invasive or noxious species. [Sec. 204]	No comparable provision.
Biomass Based Diesel and Biodiesel Labeling	No prior provision.	The Federal Trade Commission is required to promulgate rules requiring diesel retailers to label their pumps with the percentage of biomass-based diesel or biodiesel that is offered for sale. [Sec. 205]	No comparable provision.
Study of Credits for Use of Renewable Electricity in Electric Vehicles / Production of Renewable Fuel Using Renewable Energy	Under the original RFS, cellulosic biofuels are eligible for additional credits under the mandate. A gallon of cellulosic biofuel is considered equal to 2.5 gallons of ethanol. For this section, “cellulosic biofuels” includes both biofuels produced from cellulose and biofuels produced from sugars or starches (e.g., corn ethanol) if biomass is used to displace fossil energy in the refining of the fuel. [P.L. 109-58, Sec. 1501], [42 U.S.C. 7545]	EPA is required to study the feasibility of issuing credits under the RFS for electric vehicles powered by electricity from renewable resources. Within 180 days of enactment, EPA must report to Congress on the findings of the study. [Sec. 206]	No comparable provision.
Grants for Production of Advanced Biofuels	The DOE may provide grants for the construction of facilities to produce renewable fuels (including ethanol) from cellulosic biomass, agricultural byproducts, agricultural waste, and municipal solid waste. Discretionary appropriations of \$100 million for FY2006, \$250 million for FY2007, and \$400 million for FY2008 are authorized.	Requires DOE to establish a grant program for the production of advanced biofuels that have at least an 80% reduction in lifecycle greenhouse gas emissions relative to current fuels. Authorizes discretionary appropriation of a total of \$500 million for FY2008-FY2015. [Sec. 207]	Biorefinery Assistance. New section 9003. Provides competitive grants and loan guarantees for construction and retrofitting of biorefineries for the production of advanced biofuels. Biorefinery grants up to 30% of total cost. Loan guarantees limited to \$250 million or 80% of project cost. Mandatory funding of \$75 million in FY2009 and \$245 million in FY2010,

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
	<p>[P.L. 109-58, Sec. 1512] An existing grant program finances the development and construction of biorefineries and biofuel production plants and implements projects to demonstrate the commercial viability of converting biomass to fuels or chemicals. No funds have been appropriated for the program. [P.L. 107-171, Sec. 9003], [7 USC 8103]</p>		<p>available until expended for loan guarantees. Discretionary funding of \$150 million annually is authorized for FY2009-12. [Sec. 9001]</p> <p>Repowering Assistance. New section 9004. Provides USDA funds for repowering assistance to reduce or eliminate their use of fossil fuels for biorefineries in existence at enactment. Mandatory Commodity Credit Corporation (CCC) funding of \$35 million for FY2009, available until expended. Authorizes discretionary funding of \$15 million annually for FY2009-12. [Sec. 9001]</p>
Integrated Consideration of Water Quality in Determinations on Fuels and Fuel Additives	<p>Section 211(c) of the Clean Air Act allows EPA to control or prohibit the production and/or sale of any engine, vehicle, fuel, or fuel additive that causes or contributes to air pollution “that may be reasonably anticipated to endanger the public health or welfare.” [42 U.S.C. 7545(c)]</p>	<p>Expands EPA’s authority to control engines, vehicles, fuels, and fuel additives under Sec. 211(c) of the Clean Air Act to include effects on water pollution. [Sec. 208]</p>	<p>No comparable provision.</p>
Anti-Backsliding	<p>No provision.</p>	<p>Requires EPA to study the potential adverse effects to air quality from the expanded RFS, and to promulgate regulations to mitigate those effects. [Sec. 209]</p>	<p>No comparable provision.</p>
Effective Date, Savings Provision, and Transition Rules	<p>No provision.</p>	<p>For 2008 and 2009, any ethanol plant powered by natural gas, biomass, or a combination of the two is treated as having a 20% reduction in lifecycle greenhouse gas emissions (See Sec. 202). For</p>	<p>No comparable provision.</p>

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		2008, all current EPA regulations on the RFS are unchanged, except for the increase in the volume mandated by Sec. 202. [Sec. 210]	
Biodiesel Report	No provision.	Requires the DOE to report to Congress on the R&D challenges to expanding biodiesel use (to an unspecified level) [Sec. 221]	No comparable provision.
Biogas Report	No provision.	Requires the DOE to report to Congress on the R&D challenges to expanding biogas and biogas/natural gas blends (to an unspecified level). [Sec. 222]	No comparable provision.
Grants for Biofuel Production and R&D in Certain States	DOE is authorized to receive \$25 million annually for FY2006-FY2010 for R&D and implementation of renewable fuel production technologies in states with low rates of ethanol production that are under the federal reformulated gasoline (RFG) program. [P.L. 109-58, Sec. 1511(d)], [42 U.S.C. 7411]	Discretionary appropriations of \$25 million authorized annually for FY2008-FY2010 for R&D and commercial application of biofuel production in states with low rates of ethanol and cellulosic ethanol production (this could in effect apply to all states). [Sec. 223]	No comparable provision.
Biorefinery Energy Efficiency	The DOE is directed to conduct research on commercial applications of biomass and bioenergy. [P.L. 109-58, Sec. 932], [42 U.S.C. 16232]	Amends Sec. 932 of P.L. 109-58 to include research on energy efficiency at biorefineries and on technology to convert existing corn-based ethanol plants to process cellulosic materials. [Sec. 224]	No comparable provision.
Study of Optimization of Flexible Fueled Vehicles to use E-85 Fuel	No provision.	DOE is directed to study whether optimizing flexible fuel vehicles (FFVs) to run on E85 would increase their fuel efficiency. Current FFVs are optimized to run on gasoline, since that tends to be their primary fuel. [Sec. 225]	No comparable provision.

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
Study of Engine Durability and Performance Associated with the Use of Biodiesel	No current provision.	DOE, in consultation with EPA, is directed to study the effects of various biodiesel/diesel blends on engine performance and durability. [Sec. 226]	No comparable provision.
Study of Optimization of Biogas Used in Natural Gas Vehicles	No prior provision.	DOE is directed to study the potential for optimizing natural gas vehicles to run on biogas (methane produced from biological feedstocks). [Sec. 227]	No comparable provision.
Algal Biomass	Various statutes promote biofuels R&D, including the development of biofuels from algae, at the Department of Energy. [42 U.S.C. 16232]	DOE is required to report to Congress on progress toward developing algae as a feedstock for biofuel production. [Sec. 228]	No comparable provision.
Biofuels and Biorefinery Information Center	No prior provision.	Directs DOE to establish a technology transfer center to provide information on biofuels and biorefineries. [Sec. 229]	No comparable provision.
Cellulosic Ethanol and Biofuels Research	No prior provision.	Authorizes the DOE to provide biofuels R&D grants to 10 institutions from land-grant colleges, Historically Black Colleges or Universities, tribal serving institutions, or Hispanic serving institutions. \$50 million for FY2008 is authorized to be appropriated, to be available until expended. [Sec. 230]	No comparable provision.
Bioenergy R&D - Authorization of Appropriation	DOE is directed to conduct R&D on biomass, bioenergy, and bioproducts. Discretionary appropriations of \$213 million are authorized for FY2007, \$251 million for FY2008, and \$274 million for FY2009. [P.L. 109-58, Sec. 931(c)], [42 U.S.C. 16232]	Amends Sec. 931 of P.L. 109-58 to authorize a total of \$1.2 billion in discretionary appropriations for FY2008-FY2010 for R&D on biomass, bioenergy, and bioproducts. [Sec. 231]	No comparable provision.

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
Environmental Research and Development	DOE is required to establish a program of research, development, and demonstration in microbial and plant systems biology, protein science, and computational biology. Biomedical research and research related to humans are not permitted as part of the program. [P.L. 109-58, Sec. 977], [42 U.S.C. 16232]	DOE is required to expand the biological R&D program established in Sec. 977 of P.L. 109-58 to include environmental effects, potential for greenhouse gas reductions, and the potential for more sustainable agriculture. See also Sec. 233 of EISA (below). [Sec. 232(a)]	No comparable provision.
Lifecycle Analysis Tools for Evaluating the Energy Consumption and Greenhouse Gas Emissions from Biofuels	No prior provision.	DOE is required to study and develop tools for evaluating the lifecycle energy consumption and the potential for greenhouse gas emissions from biofuels. [Sec. 232(b)]	Requires USDA to support research on making a farm or ranch energy-neutral. [Sec. 7207]
Small-Scale Production and Use of Biofuels	No prior provision.	Amends the Biofuels Research and Development Act of 2000 to require the Secretary of Agriculture to establish a R&D program to facilitate small-scale production and local and on-farm use of biofuels. [Sec. 232(c)]	Requires USDA support of on-farm energy conservation and renewable energy production. [Sec 7207]
Bioenergy Research Centers	DOE is required to establish a program of R&D and demonstration of microbial and plant systems biology, protein science, and computational biology. Biomedical research and research related to humans are not permitted as part of the program. [Energy Policy Act of 2005, P.L. 109-58, Sec. 977], [42 U.S.C. 16232]	Requires the establishment of at least seven research centers that focus on bioenergy to be included in the R&D program established in Sec. 977 of P.L. 109-58. [Sec. 233]	No comparable provision.

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Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
University Based Research and Development Grant Program	No prior provision.	Requires DOE to establish a program of competitive grants to institutions of higher education for research on renewable energy technologies. Each grant may not exceed \$2 million. A total of \$25 million in discretionary appropriations is authorized for the program. [Sec. 234]	No comparable provision.
Prohibition on Franchise Agreement Restrictions Related to Renewable Fuel Infrastructure	No prior provision.	Amends the Petroleum Marketing Practices Act (15 U.S.C. 2801 et seq.) to make it unlawful for a franchiser to prohibit a franchisee from installing E85 or B20 tanks and pumps within the franchise agreement. [Sec. 241]	No comparable provision.
Renewable Fuel Dispenser Requirements — Report to Congress	No prior provision.	DOE is required to report to Congress on the market penetration of flexible fuel vehicles and on the feasibility of requiring fuel retailers to install E85 infrastructure. [Sec. 242]	No comparable provision.
Ethanol Pipeline Feasibility Study	No prior provision.	DOE, in consultation with DOT, is required to report on the feasibility of constructing dedicated ethanol pipelines. \$1 million in discretionary funds is authorized annually for FY2008 and FY2009, to remain available until expended. [Sec. 243]	No comparable provision..
Renewable Fuel Infrastructure Development	No prior provision.	Directs DOE to provide grants for conversion assistance, technical and marketing assistance, and pilot programs to expand infrastructure for ethanol/gasoline blends of between 11% and 84% ethanol, and renewable fuel/diesel fuel blends of at least 10% renewable diesel. Discretionary funds of \$200 million is authorized annually for	No comparable provision.

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Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
		FY2008-FY2014. [Sec. 244]	
Study of the Adequacy of Transportation of Domestically-Produced Renewable Fuel by Railroads and Other Modes of Transportation	No prior provision.	DOE, jointly with DOT, are required to report on the adequacy of railroads and modes for transportation of domestically produced renewable fuel. [Sec. 245]	No comparable provision.
Federal Fleet Refueling Centers	No prior provision.	Requires the head of each federal agency to install at least one renewable fuel pump at each federal fleet refueling center by January 1, 2010. Further, the Administration is required to report each October 31 on progress toward meeting this requirement. The requirement does not apply to Department of Defense fueling centers with less than 100,000 gallons in annual fuel turnover. [Sec. 246]	No comparable provision.
Standard Specifications for Biodiesel	No prior provision.	If ASTM International (originally the American Society for Testing and Materials) has not adopted standards for B5 and B20 within one year of enactment, the EPA Administrator is required to do so. No new funding is authorized. [Sec. 247]	No comparable provision.
Biofuels Infrastructure	No prior provision.	Directs DOE to conduct an R&D program on the effects of biofuels on existing transportation fuel distribution systems. [Sec. 248]	Requires joint USDA, DOE, EPA study on the infrastructure needs associated with significant expansion in biofuels production and use. [Sec. 9002]
Waiver for Fuel or Fuel Additives	Under Sec. 211(f) of the Clean Air Act, no new fuels or fuel additives may be introduced into commerce unless granted a waiver by EPA. If EPA has	Prohibits the introduction of new renewable fuels or renewable fuel additives unless EPA explicitly grants a waiver under Sec. 211(f) of the Clean Air Act. EPA is required to take final action	No comparable provision.

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	not acted within 180 days of receipt of a waiver request, the waiver is treated as granted. [42 U.S.C. 7545(f)]	within 270 days of receipt of the waiver request. Before the passage of EISA, inaction or failure to complete review of an additive by EPA allowed a fuel to receive the waiver. Under EISA, no waiver would be granted without <i>explicit</i> approval by EPA. [Sec. 251]	
P.L. 110-140, Title V — Energy Savings in Government and Public Institutions			
Capitol Complex E-85 Refueling Station	No prior provision.	The Architect of the Capitol is authorized to install an E85 tank and pumping system on or near the Capitol Grounds Fuel Station. \$640,000 in discretionary funds is authorized for FY2008. [Sec. 502]	No comparable provision.
Procurement and Acquisition of Alternative Fuels	No prior provision.	Federal agencies are prohibited from procuring alternative or synthetic transportation fuels if the lifecycle emissions exceed those of petroleum-based fuels. [Sec. 526]	No comparable provision.
P.L. 110-140, Title VIII — Improved Management of Energy Policy			
Sense of Congress Relating to the Use of Renewable Resources to Generate Energy	No prior provision.	Expresses the Sense of the Congress that renewable resources from agriculture and forestry should provide at least 25% of all U.S. energy needs by 2025. [Sec. 806]	No comparable provision.
P.L. 110-246, Title VII 2008 Farm Bill — Energy Provisions (excluding those cited in above sections)			
Bioenergy Research	Provides for research and development appropriations for bioenergy. [7 U.S.C. 3154]		Section 1419 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3154) is repealed. Funding for related biomass research

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
			through USDA is contained in Title VII Sec. 7207 of the farm bill. [Sec. 7110]
Biochar Research, Development and Demonstration	No current provision.	No comparable provision.	Research on biochar (biomass charcoal) production and sequestration is included as a high-priority research and extension area the Research Title. [Sec. 7204]
Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative	The Biomass Research and Development Act of 2000 (reauthorized by the 2002 farm bill) provides competitive funding for R&D and demonstration projects on biofuels and bio-based chemicals and products, administered jointly by USDA and DOE. Specified mandatory CCC funding of \$5 million in FY2002 and \$14 million annually for FY2003-FY2007 to remain available until expended. Also authorized appropriations of \$200 million for each of FY2006-FY2015. [P.L. 107-171, Sec. 9008], [7 U.S.C. 5925]	No comparable provision.	Establishes the Agricultural Bioenergy Feedstock and Energy Efficiency Research and Extension Initiative in Title VII (Research) to improve biomass, production, biomass conversion in biorefineries, and biomass use. Provides grants of up to 50% of cost for energy efficient research and extension projects. Establishes a best practices database of biomass crops. Authorized appropriations of \$50 million annually for FY2008-12. [Sec. 7207]
Research, Extension, and Educational Programs on Biobased Energy Technologies and Products	The “Sun Grant” program established 5 national sun grant research centers based at land-grant universities and each covering a different region. The purpose is to enhance coordination and collaboration between USDA, DOE, and land-grant universities in the development, distribution, and implementation of biobased energy technologies. Authorized appropriations	No comparable provision.	Continues sun grant program. Provides matching grants to land grant institutions to develop, distribute, and implement biobased energy technologies and to promote diversification and sustainability of agricultural production, and economic diversification in rural areas through biobased energy and product technologies. Establishes a Sun Grant Information Analysis Center. Requires annual reports.

Topic	Current or Prior Law	Energy Independence and Security Act (P.L. 110-140)	2008 Farm Bill (P.L. 110-246)
	of \$25 million in FY2005, \$50 million in FY2006, and \$75 million annually for FY2007-FY2010. [7 U.S.C. 8109]		Discretionary funds of \$75 million for FY2008-12 are authorized. [Sec. 7526]
P.L. 110-246, Title IX 2008 Farm Bill — Energy Provisions (excluding those cited in above sections)			
Federal Procurement of Biobased Products	Under the 2002 farm bill, federal agencies are required to purchase biobased products under certain conditions. Current law authorizes a voluntary biobased labeling program. USDA regulations define biobased products, identify biobased product categories, and specify the criteria (including testing) for qualifying those products for preferred procurement. Mandatory Commodity Credit Corporation (CCC) funding of \$1 million was authorized for each of FY2002-FY2007 for testing biobased products. [P.L. 107-171, Sec. 9002], [7 U.S.C. 8102]	No comparable provision.	New section 9002. Renames as the Biobased Markets Program. Extends the program through FY2012 and refines federal procurement rules for biobased products. Requires federal agencies to maximize procurement of biobased products and submit reports to Congress. Continues voluntary labeling. Establishes testing centers and education grants. Authorizes mandatory funding of \$1 million for FY2008 and \$2 million annually for FY2009-12. Discretionary funding of \$2 million in annual appropriations is authorized for FY2008-12. [Sec. 9001]
Adjustments to the Bioenergy Program	Originally a Clinton Administration initiative, the Bioenergy Program was made statutory by the 2002 farm bill. Provides CCC incentive payments to biofuels producers based on year-to-year increases in the quantity of biofuel produced. Mandatory CCC funding of \$150 annually for FY2002-FY2006. No funding was available for FY2007. [P.L. 107-171, Sec. 9010], [7 U.S.C. 8108]	No comparable provision.	New section 9005. Establishes the Bioenergy Program for Advanced Biofuels. Provides payments to producers to support and expand production of advanced biofuels. Mandatory funding of \$55 million for FY2009, \$55 million for FY2010, \$85 million for FY2011, and \$105 million for FY2012. Authorizes additional appropriation of \$25 million annually for FY2009-12. [Sec. 9001]

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Biodiesel Fuel Education Program	Awards competitive grants to nonprofit organizations that educate governmental and private entities operating vehicle fleets, and educate the public about the benefits of biodiesel fuel use. Mandatory CCC funding of \$1 million annually was authorized for FY2003-FY2007. [P.L. 107-171, Sec. 9004], [7 U.S.C. 8104]	No comparable provision.	New section 9006. Extends the Biodiesel Fuel Education Program through FY2012. Provides mandatory CCC funding of \$1 million annually for FY2008-12. [Sec. 9001]
Energy Audit and Renewable Energy Development Program	The 2002 farm bill authorized a competitive grant program for eligible entities to carry out a program to assist farmers, ranchers, and rural small businesses in becoming more energy efficient and in using renewable energy technology and resources. Authorized appropriations of such sums as are necessary to carry out the program for FY2002-FY2007. [P.L. 107-171, Sec. 9005], [7 U.S.C. 8105]	No comparable provision.	New section 9007. Folds the Energy Audit and Renewable Energy Development Program into the Rural Energy for America Program. (See below.) [Sec. 9001]
Renewable Energy Systems and Energy Efficiency Improvements	Authorizes loans, loan guarantees, and grants to farmers, ranchers, and rural small businesses to purchase and install renewable energy systems and to make energy efficiency improvements. Mandatory CCC funding of \$23 million annually for FY2003-FY2007. [P.L. 107-171, Sec. 9006], [7 U.S.C. 8106]	No comparable provision.	New section 9007. Renamed as the “Rural Energy for America Program,” Funds energy audits for state agencies, cooperatives, educational institutions and utilities. Provides grants, loan guarantees and incentive payments for energy efficiency and renewable energy, and manure-to-energy projects. Reserves 20% for small projects. Mandatory funds of \$55 million for FY2009, \$60 million for

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			FY2010, \$70 million for FY2011, and \$70 million for FY2012. Discretionary appropriations of \$25 million annually for FY2009-12 are authorized. [Sec. 9001]
Biomass Research and Development	Section 9008. The program — created originally under the Biomass Research and Development Act (BRDA) of 2000 — provides competitive funding for research, development, and demonstration projects on biofuels and bio-based chemicals and products, administered jointly by USDA and DOE. Specified mandatory CCC funding of \$5 million in FY2002 and \$14 million for each of FY2003 through FY2007 (available until expended). Additional appropriation authority of \$200 million for each of FY2006 through FY2015. [7 U.S.C. 8101]	No comparable provision.	New section 9008. Defines biobased product. Provides for coordination of biomass research and development between USDA and DOE. Establishes the Biomass Research and Development Board and the Biomass Research and Development technical Advisory Committee to assist the Board in coordinating biomass research in the Federal government. USDA and DOE are to establish a Biomass Research and Development Initiative to competitively award grants, contracts, and financial assistance for research on biofuels and biobased products production, and biobased feedstocks and development. Grants are to be awarded to universities, national laboratories, state and federal research agencies, private businesses, and nonprofits. Mandatory funding is authorized of \$20 million for FY2009, \$28 million for FY2010, \$30 million for FY2011, and \$40 million for FY2012. Discretionary funding of \$35 million annually is authorized to be appropriated for FY2009-12. [Sec. 9001]
Rural Energy Self-Sufficiency Initiative Grant Program	No current provision.	No comparable provision.	New section 9009. Establishes the Rural Energy Self-Sufficiency Initiative, providing cost-share (up to 50%) grants to assist rural communities with community-wide energy systems that reduce conventional energy use

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			and increase the use of energy from renewable sources. Grants are made available to assess energy use in a rural community, evaluate ideas for reducing energy use, and develop and install integrated renewable energy systems. Authorizes \$5 million in discretionary funds annually for FY2009-12. [Sec. 9001]
Feedstock Flexibility Program for Bioenergy Producers	No current provision.	No comparable provision.	New section 9010. Establishes the Feedstock Flexibility Program, authorizing the use of such sums as necessary of CCC funds to purchase surplus sugar, to ensure the sugar program operates at no-net-cost, to be resold as a biomass feedstock to produce bioenergy. [Sec. 9001]
Financial Assistance for the Production of Biomass Energy Crops and Infrastructure for Harvesting, Storage, and Transportation of Biomass to Local Biorefineries	No current provision.	No comparable provision.	New section 9011. Establishes the Biomass Crop Assistance Program (BCAP) to encourage biomass production or biomass conversion facility construction with contracts which will enable producers to receive financial assistance for crop establishment costs and annual payments for biomass production. Producers must be within economically practicable distance from a biomass facility. Also provides payments to eligible entities to assist with costs for collection, harvest, storage and transportation to a biomass conversion facility. A report is required no later than 4 years after enactment. CCC funds of such sums as necessary are to be made available for each of FY2008-12. [Sec. 9001]

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Forest Biomass for Energy Program	No current provision.	No comparable provision.	New section 9012. Requires the Forest Service to conduct a competitive research and development program to encourage use of forest biomass for energy. Priority given to projects that utilize low-value forest by-products, integrate the production of energy from forest biomass with existing manufacturing streams, develop new transportation fuels from forest biomass, or improve the production of forest biomass feedstocks. Appropriations of \$15 million per year are authorized for FY2009-12. [Sec. 9001]
Community Wood Energy R&D Program	No current provision.	No comparable provision.	New section 9013. Establishes the Community Wood Energy R & D Program, providing grants of up to \$50,000 for up to 50% of the cost for communities to develop wood energy plans and purchase systems for public buildings. Authorizes \$5 million in discretionary funds annually (FY2009-12). [Sec. 9001]
Rural Nitrogen Fertilizer Study	No current provision.	No comparable provision.	Requires a report with 1 year of appropriations on the production of fertilizer from renewable energy sources in rural areas. Must identify challenges to commercialization of rural fertilizer production, processes and technologies and potential impacts of renewable fertilizer on fossil fuel use and the environment. Appropriations of \$1 million are authorized for FY2009. [Sec. 9003]

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P.L. 110-246, Title XI 2008 Farm Bill — Energy Provisions (excluding those cited in above sections)			
Study on Bioenergy Operations	No comparable provision.	No comparable provision.	Directs USDA to produce a report on the potential economic issues (including costs) associated with animal manure used in normal agricultural operations and as a bioenergy feedstock. [Sec. 11014]
P.L. 110-246, Title XV 2008 Farm Bill — Energy Provisions (excluding those cited in above sections)			
Tax Credit for Production of Cellulosic Alcohol	All fuel ethanol is allowed a tax credit of \$0.54 per gallon, regardless of feedstock. Small producers may claim an additional credit of \$0.10 per gallon. [26 U.S.C. 40], [26 U.S.C. 40(d)(4)]	No comparable provision.	Establishes a credit of \$1.01 for blenders of cellulosic biomass alcohol through December 31, 2012. The value of the credit, plus the existing small ethanol producer credit and alcohol fuels credits cannot exceed \$1.01 per gallon. [Sec. 15321]
Modification of Alcohol Tax Credit	The American Jobs Creation Act of 2004 established a tax credit for the use of ethanol used as motor fuel. The credit is valued at \$0.51 per gallon of ethanol blended into gasoline. [P.L. 108-357, Sec. 301], [26 U.S.C. 40(d)(4)]	No comparable provision.	In the first calendar year after EPA certifies that 7.5 billion gallons of renewable fuel have been blended into gasoline, the credit is reduced from \$0.51 to \$0.45 per gallon. [Sec. 15331]
Calculation of Volume of Alcohol for Fuel Tax Credits	Currently, any denaturant added to alcohol (up to 5%) is considered as part of the volume of alcohol for tax purposes. [26 U.S.C. 40(d)(4)]	No comparable provision.	For the purposes of calculating the per-gallon credit for the volume of alcohol used as a fuel or in a qualified mixture, the volume of alcohol includes any denaturant, including gasoline. This provision reduces the amount of allowable denaturant (added to make it unfit for human consumption) to 2% of the volume of the alcohol. [Sec. 15332]
Ethanol Tariff Extension	In general, fuel ethanol imports are	No comparable provision.	Extends the \$0.54 cent per gallon duty

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	subject to a \$0.54 per gallon duty and a 2.5% ad valorem tariff. The duty expires January 1, 2009. [P.L. 99-499] [19 U.S.C. 3001 et seq.]		through December 31, 2010. [Sec. 15333]
Elimination and Reductions of Duty Drawback on Certain Imported Ethanol	Currently, if a manufacturer imports an intermediate product then exports the finished product or a similar product, that manufacturer may be eligible for a refund (drawback) of up to 99% of the duties paid. The duty drawback provisions include special provisions for the production of petroleum derivatives. [19 U.S.C. 1313(p)]	No comparable provision.	Duty drawback will not be available on exports which do not contain ethanol. Ends the practice in which imported ethanol is blended with gasoline and jet fuel (containing no ethanol, but considered a “like commodity” to the finished gasoline) is then exported to qualify for the drawback in lieu of finished gasoline containing the originally imported ethanol. [Sec. 15334]