

CRS Report for Congress

Biofuels Provisions in H.R. 3221 and H.R. 6: A Side-by-Side Comparison

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Summary

This report provides a side-by-side comparison of biofuels-related provisions in the House- and Senate-passed energy bills, H.R. 3221 and H.R. 6, respectively. H.R. 3221 (the New Direction for Energy Independence, National Security, and Consumer Protection Act and the Renewable Energy and Energy Conservation Tax Act of 2007) was approved by the House on August 4, 2007. The Senate approved its version of H.R. 6 (the Renewable Fuels, Consumer Protection, and Energy Efficiency Act of 2007) on June 21, 2007. Both bills cover a wide range of energy topics with extensive attention to biofuels, including ethanol and biodiesel.

Key biofuels-related provisions of the two bills include:

- a major expansion of the renewable fuel standard (RFS) established in the Energy Policy Act of 2005 (P.L. 109-58) [Senate bill];
- expansion and/or modification of tax credits for alternative fuel refueling infrastructure and for ethanol, and renewable diesel fuels [House bill];
- grants and loan guarantees for biofuels research, development, deployment, and production [both bills];
- 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 [both bills]; and
- reauthorization of biofuels R&D at the U.S. Departments of Energy and Agriculture [both bills].

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Biofuels Provisions in H.R. 3221 and H.R. 6: A Side-by-Side Comparison

Introduction

With recent high energy prices, concerns over energy security, and the desire to reduce air pollutant and greenhouse gas emissions, there is ongoing congressional interest in promoting greater use of alternatives to petroleum fuels. Biofuels — transportation fuels produced from plants and other organic 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 (P.L. 109-58) established a renewable fuel standard (RFS). The RFS requires the increasing use of renewable fuel in gasoline, starting at 4.0 billion gallons in 2006, increasing to 7.5 billion gallons in 2012. Although not an explicit ethanol mandate, it is expected that the majority of this requirement will be met using corn-based ethanol.² About 4.0 billion gallons of corn ethanol were consumed in 2005, so the RFS represents roughly a doubling of U.S. ethanol consumption over seven years. However, the U.S. ethanol industry is expanding rapidly, outpacing the required growth in the RFS. As of August 1, 2007, existing U.S. production capacity was roughly 6.5 billion gallons per year, with another 6.4 billion gallons of capacity under construction or in the planning stages. Because this capacity will likely outpace the current RFS, some proponents of corn-based ethanol support an increase in the mandated levels of the RFS.

Because of the rapid expansion of U.S. corn ethanol capacity, there are concerns 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.³ Critics also argue that the environmental costs of corn-based ethanol may outweigh the benefits.

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.

³ 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.

Because of concerns over corn-based ethanol, as well as interest in diversifying energy supply, there is growing interest in developing biofuels that rely on other sources of biomass, including agricultural wastes, municipal solid waste, and dedicated energy crops such as perennial grasses, fast-growing trees, and algae. This interest has led to proposals to support and/or mandate biofuels produced from feedstocks other than corn starch through explicit requirements, R&D funding, and/or tax incentives.⁴ 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.⁵

Key Elements of House and Senate Energy Bills

This report provides a side-by-side comparison of biofuels-related provisions in the House- and Senate-passed energy bills, H.R. 3221 and H.R. 6, respectively. H.R. 3221 (the New Direction for Energy Independence, National Security, and Consumer Protection Act and the Renewable Energy and Energy Conservation Tax Act of 2007) was approved by the House on August 4, 2007. The Senate approved its version of H.R. 6 (the Renewable Fuels, Consumer Protection, and Energy Efficiency Act of 2007) on June 21, 2007.⁶ Both bills cover a wide range of energy topics including biofuels, electricity generation, energy efficiency, carbon capture and storage, and oil and gas royalties.

On July 27, 2007, the House passed H.R. 2419, the 2007 “Farm Bill” (the Farm, Nutrition, and Bioenergy Act of 2007). Like the 2002 Farm Bill, Title IX of the 2007 Farm Bill is dedicated to farm-related energy issues, including biofuels. Title V of H.R. 3221 contains provisions similar or identical to provisions passed in Title IX of H.R. 2419. For more information on these Farm Bill provisions, see CRS Report RL34130, *Renewable Energy Policy in the 2007 Farm Bill*.

Table 1 contains a section-by-section comparison of the biofuels provisions in H.R. 3221 and H.R. 6 with current law. The table is organized in the same order as the House bill, with non-comparable Senate bill sections shown at the end. Key provisions of the bills include:

- a major expansion of the RFS established in the Energy Policy Act of 2005 [Senate bill];

⁴ This would include using other parts of the corn plant, including the husks and the stalks, which are high in cellulose.

⁵ For more information on biodiesel, see CRS Report RL32712, *Agriculture-Based Renewable Energy Production*, by Randy Schnepf.

⁶ The House approved its version of H.R. 6 on January 18, 2007. However, this bill is a less comprehensive bill than H.R. 3221 or the Senate version of H.R. 6. Presumably, H.R. 3221 has superseded the House version of H.R. 6.

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- expansion and/or modification of tax credits for alternative fuel refueling infrastructure and for ethanol, and renewable diesel fuels [House bill];
- grants and loan guarantees for biofuels research, development, deployment, and production [both bills];
- 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 [both bills]; and
- reauthorization of biofuels R&D at the U.S. Departments of Energy and Agriculture [both bills].

Table 1. Side-by-Side Comparison of Biofuels Provisions in Current Law with H.R. 3221 and H.R. 6 (Senate Version)

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 3221, Title IV — Science and Technology				
Biofuels and Biorefinery Information Center	Directs the Secretary of Energy to establish a technology transfer center to provide information on biofuels and biorefineries. [Sec. 4402]	Similar provision. [Sec. 127]	No current provision.	
Biofuels Infrastructure	Directs the Secretary of Energy to conduct an R&D program on the effects of biofuels on existing transportation fuel distribution systems. [Sec. 4403]	Directs the Secretary of Energy to provide grants for 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. \$200 million is authorized to be available until expended. [Sec. 121]	No current provision.	In addition, sec. 9301 of H.R. 3221 (below) would provide grants for the installation of renewable fuel infrastructure at retail stations.
Biodiesel Report	Requires the Secretary of Energy to report to Congress on the R&D challenges to expanding biodiesel use to 2.5% of total diesel fuel use by volume. [Sec. 4404]	Similar provision, but would require a study of the challenges of expanding biodiesel use to 5% of total diesel fuel use. [Sec. 130(a)]	No current provision.	Currently, biodiesel represents less than 1% of total diesel consumption.

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Biogas	Requires the Secretary of Energy to report to Congress on the R&D challenges to expanding biogas and biogas/natural gas blends to 5% of fuel use. [Sec. 4405]	No comparable provision.	No current provision.	
Bioresearch Centers for Systems Biology Program	Requires the establishment of at least five bioresearch centers that focus on biofuels to be included in the R&D program established in Sec. 977 of P.L. 109-58. [Sec. 4406]	Similar to H.R. 3221, but would require the establishment of at least 11 bioresearch centers focused on biofuels. [Sec. 123]	The Department of Energy (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]	See also Sec. 4413(a) of H.R. 3221 (below), which would expand the topics covered by the program.
Grants for Biofuel Production and R&D in Certain States	Authorizes \$25 million 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. 4407]	Similar to H.R. 3221. [Sec. 125]	The Secretary of Energy is authorized \$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)]	The funding authorized in these bills would be in addition to amounts in current law. Language substantially similar to these bill sections is also in Sec. 9315 of H.R. 3221(see below).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Biorefinery Energy Efficiency	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. 4408]	No comparable provision.	The Secretary of Energy is directed to conduct research on commercial applications of biomass and bioenergy. [P.L. 109-58, Sec. 932]	
Study of Increased Consumption of Ethanol-Blended Gasoline with Higher Levels of Ethanol	The Secretary of Energy is directed to study the potential for using ethanol/gasoline blends in the range of 10% to 40% ethanol. Currently, only up to 10% ethanol is permitted by federal regulations and warranted by automakers for conventional vehicles. [Sec. 4409]	Similar provision. [Sec. 142]	No current provision.	A similar provision is contained in Sec. 9305 of H.R. 3221 for a study of increasing gasoline ethanol content above 10% (see below).
Study of Optimization of Flexible Fueled Vehicles to use E-85 Fuel	The Secretary of Energy is directed to study whether optimizing flexible fuel vehicles (FFVs) to run on E85 would increase their fuel efficiency. [Sec. 4410]	Similar provision. [Sec. 144]	No current provision.	Current FFVs are optimized to run on gasoline, since that tends to be their primary fuel.
Study of Engine Durability and Performance Associated with the Use of Biodiesel	The Secretary of Energy is directed to study the effects of various biodiesel/diesel blends on engine performance and durability. [Sec. 4411]	Similar provision, except that the Secretary is required to study only the effects on engine durability but not performance. [Sec. 146]	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Bioenergy R&D - Authorization of Appropriation	Amends Sec. 931 of P.L. 109-58 to authorize a total of \$1.2 billion for FY2008-FY2010 for R&D on biomass, bioenergy, and bioproducts. [Sec. 4412]	Amends Sec. 931 of P.L. 109-58 to authorize a total of \$775 million for FY2008-FY2009. [Sec. 122]	The Secretary of Energy is directed to conduct R&D on biomass, bioenergy, and bioproducts. A total of \$525 million is authorized for FY2008-FY2009. [P.L. 109-58, Sec. 931(c)]	Funding for related biomass research through the Department of Agriculture is contained in Sec. 5007 of H.R. 3221.
Environmental Research and Development	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. [Sec. 4413(a)]	No comparable provision.	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]	See also Sec. 4406 of H.R. 3221 (above).
Lifecycle Analysis Tools for Evaluating the Energy Consumption and Greenhouse Gas Emissions from Biofuels	The Secretary of Energy is required to study and develop tools for evaluating the lifecycle energy consumption and greenhouse gas emissions from biofuels. [Sec. 4413(b)]	Similar provision, but the study is required to cover only greenhouse gas emissions but not energy consumption. [Sec. 148]	No current provision.	
Small-Scale Production and Use of Biofuels	The Secretary of Energy is required to establish a R&D program to facilitate small-scale production and local and on-farm use of biofuels. [Sec. 4413(c)]	No comparable provision.	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Study of Optimization of Biogas Used in Natural Gas Vehicles	The Secretary of Energy is directed to study the potential for optimizing natural gas vehicles to run on biogas (methane produced from biological feedstocks). [Sec. 4414]	No comparable provision.	No current provision.	
Standards for Biofuels Dispensers	If “appropriate private standards” for biofuels dispensers have not been developed by the date of enactment, the Secretary of Energy is required to develop such standards to promote broader biofuel use. [Sec. 4415]	No comparable provision.	No current provision.	
Algal Biomass	The Secretary is required to report to Congress on progress toward developing algae as a feedstock for biofuel production. [Sec. 4416]	No comparable provision.	Various statutes promote biofuels R&D, including the development of biofuels from algae, at the Department of Energy.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 3221, Title V — Agriculture Energy [Related language to this title also appears in H.R. 2419, the 2007 Farm Bill, as passed by the House]				
Federal Procurement of Biobased Products	Amends definitions and procedures for determining eligible products under the 2002 Farm Bill (P.L. 107-171) program on federal procurement of biobased products. For FY2008-FY2012, \$2 million in annual mandatory Commodity Credit Corporation (CCC) funding is authorized for product testing. [Sec. 5002]	No comparable provision.	Under the 2002 Farm Bill, federal agencies are currently 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 for qualifying those products for preferred procurement. Mandatory CCC funding of \$1 million is authorized for each of FY2002 through FY2007 for testing biobased products. [P.L. 107-171, Sec. 9002]	Related language to H.R. 3221 was passed by the House in July as Sec. 9002 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Loan Guarantees for Biorefineries and Biofuel Production Plants	<p>Extends the 2002 Farm Bill biorefinery development program through FY2012 and provides new loan guarantee authority for biorefineries, with a total of \$600 million going to loans less than \$100 million, and \$1 billion for loans up to \$250 million. The loan guarantee would cover 90% of an eligible loan. Requires that construction contractors and subcontractors on federally assisted loan guarantee projects pay their employees not less than the prevailing wage in the same locality under the Davis-Bacon Act. Specifies mandatory CCC funding of \$50 million in FY2008; \$65 million in FY2009; \$75 million in FY2010; \$150 million in FY2011; and \$300 million in FY2012. [Sec. 5003]</p>	<p>Amends Sec. 1703 of the Energy Policy Act of 2005 to allow for projects that produce “advanced biofuels” defined as biofuels produced from feedstocks other than corn starch (see H.R. 6, Sec. 111). [Sec. 124]</p>	<p>Under the Energy Policy Act of 2005, the Department of Energy is directed to provide loan guarantees for various renewable energy and low-emission energy projects. [P.L. 109-58, Sec. 1703]</p> <p>The 2002 Farm Bill authorized a grant program to help finance the cost of developing and constructing biorefineries and biofuel production plants to carry out projects to demonstrate the commercial viability of converting biomass to fuels or chemicals. However, no funds have been appropriated for the program. [P.L. 107-171, Sec. 9003]</p>	<p>Related language to H.R. 3221 (with larger funding authorizations) was passed by the House as Sec. 9003 of the 2007 Farm Bill (H.R. 2419).</p>

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Biodiesel Fuel Education Program	Extends the 2002 Farm Bill Biodiesel Fuel Education Program through FY2012 with mandatory funding of \$2 million for each of FY2008 through FY2012. [Sec. 5004]	No comparable provision.	This 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 through FY2007. [P.L. 107-171, Sec. 9004]	Identical language to H.R. 3221 was passed by the House as Sec. 9017 of the 2007 Farm Bill (H.R. 2419).
Energy Audit and Renewable Energy Development Program	Extends the 2002 Farm Bill Energy Audit and Renewable Energy Development Program through 2012. [Sec. 5005]	No comparable provision.	This is 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 through FY2007. [P.L. 107-171, Sec. 9005]	Identical language to H.R. 3221 was passed by the House as Sec. 9004 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Renewable Energy Systems and Energy Efficiency Improvements	Renames the 2002 Farm Bill program on “renewable energy systems and energy efficiency improvements” as the “Rural Energy for America Program.” Raises the loan guarantee level from \$10 million to \$25 million and caps federal cost-share at 75%. Allows for feasibility studies to be eligible for the program. Increases mandatory CCC funding to \$40 million in FY2008; \$60 million in FY2009; \$75 million in FY2010; \$100 million in FY2011; and \$150 million in FY2012. [Sec. 5006]	No comparable provision.	This program 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 through FY2007. [P.L. 107-171, Sec. 9006]	Related language to H.R. 3221 (with a total of \$75 million more for FY2008-FY2012) was passed by the House as Sec. 9005 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Biomass Research and Development Act of 2000	Modifies and extends the Biomass Research and Development Program through FY2012. Adds mandatory CCC funding of \$25 million in FY2008; \$50 million in FY2009; \$75 million in FY2010; \$100 million in FY2011; and \$100 million in FY2012. Also maintains the existing authorization of appropriations of \$200 million annually for FY2008-FY2015. [Sec. 5007]	No comparable provision.	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 through FY2007 to remain available until expended. Also authorized appropriations of \$200 million for each of FY2006 through FY2015. [P.L. 107-171, Sec. 9008]	Related language to H.R. 3221 (with a total of \$70 million more for FY2008-FY2012) was passed by the House as Sec. 9006 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Adjustments to the Bioenergy Program	Renews and extends the 2002 Farm Bill Bioenergy Program through 2012 with increased mandatory CCC funding of \$175 million in FY2008; \$215 million in FY2009; \$250 million in FY2010; \$275 million in FY2011; and \$300 million in FY2012. Ethanol produced from corn starch is excluded. Renewable diesel produced from biomass at petroleum refineries may be excluded, as well. Expands eligibility for combined heat and power production using biomass at biofuels plants and biomass gasification as types of bioenergy eligible for the production incentive. [Sec. 5008]	No comparable provision.	Originally a Clinton Administration initiative, the Bioenergy Program was made statutory by the 2002 Farm Bill. The program 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 through FY2006. No funding was available for FY2007. [P.L. 107-171, Sec. 9010]	Related language to H.R. 3221 (with a total of \$185 million more for FY2008-FY2012) was passed by the House as Sec. 9007 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Research, Extension, and Educational Programs on Biobased Energy Technologies and Products	Extends the Sun Grant program through 2012 with authorized appropriations of \$75 million for each of FY2008 through FY2012. [Sec. 5009]	No comparable provision.	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 of \$25 million in FY2005, \$50 million in FY2006, and \$75 million annually for FY2006 through FY2010.	Related language to H.R. 3221 was passed by the House as Sec. 9008 of the 2007 Farm Bill (H.R. 2419).
Energy Council of the Department of Agriculture	Directs the Secretary of Agriculture to establish an energy council to coordinate the energy policy of USDA and consult with other federal departments and agencies. [Sec. 5010]	No comparable provision.	No current provision.	Identical language to H.R. 3221 was passed by the House as Sec. 9009 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Forest Bioenergy Research Program	Establishes a new R&D program to promote the use of woody biomass for bioenergy production, including feedstock issues such as yield and new varieties. A total of \$36 million in mandatory CCC funding is provided for FY2008-FY2012. [Sec. 5011]	No comparable provision.	No current provision.	Related language to H.R. 3221 (with a total of \$39 million more for FY2008-FY2012) was passed by the House as Sec. 9019 of the 2007 Farm Bill (H.R. 2419).
Feedstock Flexibility Program for Bioenergy Producers	Requires that USDA establish and administer (starting in FY2008) a sugar-for-ethanol program using sugar intended for food use but deemed to be in surplus. USDA would implement the program only in those years when purchases are determined to be necessary to ensure that the sugar program operates at no cost. Such sums as are necessary to carry out the program are authorized. [Sec. 5012]	No comparable provision.	No current provision.	Related language to H.R. 3221 was passed by the House as Sec. 9013 of the 2007 Farm Bill (H.R. 2419).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 3221, Title VIII — Transportation and Infrastructure				
Capitol Complex E-85 Refueling Station	The Architect of the Capitol is authorized to install an E85 tank and pumping system on or near the Capitol Grounds Fuel Station. [Sec. 8652]	No comparable provision.	No current provision.	
H.R. 3221, Title IX — Energy and Commerce				
Renewable Fuel Infrastructure Development	Establishes a grant program for the installation of refueling infrastructure for E85 and B20 (20% biodiesel, 80% conventional diesel) fuels. Authorizes \$200 million annually for FY2008-FY2014. “Large, vertically integrated oil companies” are ineligible for funding. [Sec. 9301]	No comparable provision.	No current provision.	See also Sec. 4403 of H.R. 3221 (above).
Prohibition on Franchise Agreement Restrictions Related to Renewable Fuel Infrastructure	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. 9302]	No comparable provision.	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Renewable Fuel Dispenser Requirements	The Secretary of Energy 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. 9303]	No comparable provision.	No current provision.	
Pipeline Feasibility Study	The Secretary of Energy, in consultation with the Secretary of Transportation, is required to report on the feasibility of constructing dedicated ethanol pipelines. [Sec. 9304]	Substantially similar, except that the Secretary of Energy must consult with the Secretary of Agriculture, as well. [Sec. 143]	No current provision.	
Study of Ethanol-Blended Gasoline with Greater Levels of Ethanol	The Secretary of Energy is directed to study the potential for increasing the ethanol content in gasoline above 10%. [Sec. 9305]	Similar provision, except that the study is to cover ethanol/gasoline blends between 10% and 40% ethanol. [Sec. 142]	No current provision.	A similar provision to Sec. 142 of H.R. 6 is contained in Sec. 4409 of H.R. 3221 (see above).
Study of the Adequacy of Railroad Transportation of Domestically-Produced Renewable Fuel	The Secretary of Energy, in consultation with the Secretary of Transportation, is required to report on the adequacy of railroad transportation of domestically produced renewable fuel. [Sec. 9306]	No comparable provision.	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Standard Specifications for Biodiesel	If ASTM International (originally the American Society for Testing and Materials) has not adopted a standard for B20 within one year of enactment, the Administrator of the Environmental Protection Agency (EPA) is required to do so. No new funding is authorized. [Sec. 9307]	The President is required to promulgate rules to ensure that renewable diesel fuel substitutes comply with applicable ASTM standards. Authorizes \$3 million annually for FY2008-FY2010. [Sec. 130(c)]	No current provision.	
Grants for Cellulosic Ethanol Production	Extends the program of construction grants for cellulosic biofuel facilities established in P.L. 109-58 through FY2010 and authorizes \$500 million annually for FY2009 and FY2010. Directs the Secretary of Energy to give priority to projects that “promote feedstock diversity and geographic dispersion of production facilities.” [Sec. 9308]	No comparable provision.	The Secretary of Energy 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. A total of \$750 million is authorized for FY2006 through FY2008. [P.L. 109-58, Sec. 1512]	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Consumer Education Campaign Relating to Flexible-Fuel Vehicles	The Secretary of Transportation is required to carry out an educational program to inform consumers about flexible fuel vehicles, including which existing vehicles may be fueled on E85. [Sec. 9309]	No comparable provision.	No current provision.	
Review of New Renewable Fuels or New Renewable Fuel Additives	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 within 270 days of receipt of the waiver request. [Sec. 9310]	No comparable provision.	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 not acted within 180 days of receipt of a waiver request, the waiver is treated as granted. [42 U.S.C. 7545(f)]	Currently, inaction by EPA allows a fuel to receive the waiver. Under H.R. 3221, no waiver would be granted without <i>explicit</i> approval by EPA.

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Domestic Manufacturing Conversion Grant Program	Expands the incentive program for the domestic production of hybrid and advanced diesel vehicle established in P.L. 109-58 to include flexible fuel vehicles. Requires that priority be given to auto and parts manufacturing facilities that have “recently ceased operation or will cease operation in the near future.” Allows coordination with similar state programs. [Sec. 9311]	No comparable provision.	The EPA Administrator is required to establish a program to encourage the domestic production and sales of efficient hybrid and advanced diesel vehicles. The program must include grants to domestic vehicle manufacturers to encourage production and provide consumer purchase incentives. Such sums as necessary are authorized for FY2006-FY2015. [P.L. 109-58, Sec. 712]	
Cellulosic Ethanol and Biofuels Research	Authorizes the Secretary of Energy 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. 9312]	No comparable provision.	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Federal Fleet Refueling Centers	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. [Sec. 9313]	No comparable provision.	No current provision.	
Study of Impact of Increased Renewable Fuel Use	The Secretary of Energy, in consultation with the EPA Administrator, the Administrator of the Energy Information Administration (EIA), and the Secretary of Agriculture, is required to study and assess the impact of renewable fuels on the U.S. economy. Study elements include the effects on energy security, air and water quality, infrastructure, job creation, and agricultural commodity markets. The Secretary must report within two years of enactment and update the report every three years thereafter. [Sec. 9314]	The EPA Administrator is required to enter into an agreement with the National Academy of Sciences to study the effects on the environment from increased renewable fuel use. Study elements include the effects on air and water quality, land use patterns, deforestation, greenhouse gas emissions, habitat, and the long-term capacity of the United States to produce biomass feedstocks. The Administrator must submit two reports: 1) within three years of enactment; and 2) by December 31, 2015. [Sec. 162]	<p>The EPA Administrator 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. 1507]</p> <p>The EPA Administrator 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)]</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]</p>	See also Sec. 14002 of H.R. 3221, which would require the Secretary of the Treasury to study related topics.

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Grants for Renewable Fuel Production R&D in Certain States	Authorizes \$25 million annually for FY2008-FY2010 for research, development, and commercial application of biofuel production in states with low rates of ethanol and cellulosic ethanol production. [Sec. 9315]	Similar to H.R. 3221. [Sec. 125]	The Secretary of Energy is authorized to conduct R&D and deployment of renewable fuel production technologies in certain states. [P.L. 109-58, Sec. 1511(d)]	For more information, see Sec. 4407 of H.R. 3221 (above).
Study of Effect of Oil Prices	The Secretary of Energy is required to study the effects on renewable fuel production of oil priced at \$40 a barrel or more. [Sec. 9316]	No comparable provision.	No current provision.	
Biodiesel as Alternative fuel for CAFE Purposes	Amends the Corporate Average Fuel Economy (CAFE) program to allow vehicles capable of operating on B20 to be treated as alternative fuel vehicles eligible for CAFE credits. [Sec. 9317]	No comparable provision.	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 vehicles are not considered alternative fuel vehicles. [49 U.S.C. 32901 et seq.]	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 there seem to be few technical barriers to making some or all new diesel vehicles B20-capable.

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 3221 Tax Provisions, Title XII — Conservation				
Extension and Modification of Alternative Fuel Vehicle Refueling Property Credit	Increases the alternative fuel refueling property credit to 50% of the cost of the installation, up to \$50,000. Extends the credit through December 31, 2010. [Sec. 12002]	No comparable provision.	An owner of a retail fuel station may take a tax credit for the installation of alternative fuel tanks and pumps. The credit is equal to 30% of the cost of the installation, up to \$30,000. For alternative fuels other than hydrogen, the credit expires on December 31, 2009. [P.L. 109-58, Sec. 1342]	
Extension and Modification of Credits for Biodiesel and Renewable Diesel	Amends the definition of “renewable diesel” under the renewable diesel tax credit to exclude renewable diesel and renewable diesel mixtures produced through certain processes. Extends the tax credits through December 31, 2010. [Sec. 12003]	No comparable provision.	A tax credit is available for the retail sale or use of biodiesel and renewable diesel. The credit is equal to \$1.00 per gallon for renewable diesel or biodiesel produced from virgin agricultural products. The credit expires on December 31, 2008. [P.L. 108-357, P.L. 109-58]	Also see Sec. 13011 of H.R. 3221 below.
Credit for Production of Cellulosic Alcohol	Establishes a credit of \$0.50 per gallon for ethanol produced from cellulosic materials, in addition to any existing credits. [Sec. 12004]	No comparable provision.	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]	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 3221 Tax Provisions, Title XIII — Revenue Provisions				
Clarification of Eligibility for Renewable Diesel Credit	Explicitly excludes fuels “derived from coprocessing biomass with a feedstock which is not biomass” from eligibility for the renewable diesel tax credit. [Sec. 13011]	No comparable provision.	A tax credit is available for the retail sale or use of renewable diesel. The credit is equal to \$1.00 per gallon of renewable diesel. [P.L. 109-58]	This provision would limit tax credits for production of renewable diesel at existing petroleum refineries.
Clarification That Credits or Fuel are Designed to Provide an Incentive for United States Production	Limits eligibility for the biodiesel and renewable diesel tax credits to fuels produced in the United States. [Sec. 13012]	No comparable provision.	A tax credit is available for the retail sale or use of biodiesel and renewable diesel blended into conventional diesel. The credit does not recognize point of origin. [P.L. 108-357, P.L. 109-58]	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 3221 Tax Provisions, Title XIV — Other Provisions				
Comprehensive Study of Biofuels	The Secretary of the Treasury is required to study the effects of increased biofuel use. Study elements include the effects on: fuel prices; land prices; land use; environment; agricultural commodities; taxpayers; and refining capacity. [Sec. 14002]	No comparable requirement for the Secretary of the Treasury.	No current provision.	Both bills would require related studies by DOE or EPA. See Sec. 9314 of H.R. 3221 and Sec.162 of H.R. 6 (above).

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
H.R. 6 (Senate Version)				
Renewable Fuel Standard	No comparable provision.	Amends the renewable fuel standard (RFS) established in P.L. 109-58 to include all motor fuel, as well as heating oil. Expands the mandate to 13.2 billion gallons in 2012 and 36 billion gallons in 2022. Starting in 2016, requires an increasing amount of the above mandate to be met using “advanced biofuels,” defined as biofuels derived from feedstocks other than corn starch. The bill would require 3 billion gallons of advanced biofuel in 2016, increasing to 21 billion gallons in 2022. Renewable fuels produced in facilities that commence operation after enactment must achieve at least a 20% reduction in lifecycle greenhouse gas emissions relative to gasoline. [Sec. 111]	The Energy Policy Act of 2005 established an RFS which requires the use of an 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]	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Production of Renewable Fuel Using Renewable Energy	No comparable provision.	Under Sec. 111 of H.R. 6, a gallon of advanced biofuel is considered equal to a gallon of conventional biofuel. This section grants the President the authority to give additional credits under the program to biofuels produced at facilities that use biomass to displace fossil energy. [Sec. 112]	Under the existing 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 if biomass is used to displace fossil energy in the refining of the fuel. [P.L. 109-58, Sec. 1501]	
Sense of Congress Relating to the Use of Renewable Resources to Generate Energy	No comparable 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. 113]	No current provision.	
Grants for Infrastructure for Transportation of Biomass to Local Biorefineries	No comparable provision.	Would require the Secretary of Energy to establish grants to local governments and other entities (as determined by the Secretary) to promote the development of infrastructure to produce, separate, process, and transport biomass to biorefineries. [Sec. 126]	No current provision.	

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Alternative Fuel Database and Materials	No comparable provision.	Would require the Secretary of Energy and the National Institute of Standards and Technology to establish: 1) a public database describing the physical properties of different alternative fuels; and 2) standard reference materials for different alternative fuels. [Sec. 128]	No current provision.	
Fuel Tank Labeling Requirement	No comparable provision.	Beginning in model year 2010, would require that the fuel tank cap of an alternative fuel vehicle be clearly labeled as such. [Sec. 129]	No current provision.	
Biodiesel Labeling Standards	No comparable provision.	Requires the President to promulgate rules for the uniform labeling of biodiesel blends that meet ASTM standards. [Sec. 130(b)]	No current provision.	
Transitional Assistance for Farmers who Plant Dedicated Energy Crops for a Local Cellulosic Refinery	No comparable provision.	Requires the Secretary of Agriculture to provide transitional assistance payments to agricultural producers in the first year they produce eligible cellulosic energy crops. \$4 million is authorized annually for FY2008-FY2012. [Sec. 131]	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
R&D in Support of Low-Carbon Fuels	No comparable provision.	Establishes a program of R&D grants for research on low carbon fuels, including cellulosic biofuels and woody biomass for fuels and electricity. A total of \$275 million is authorized for FY2009-FY2013. [Sec. 132]	No current provision.	
Study of Advanced Biofuels Technologies	No comparable provision.	Requires the Secretary of Energy to contract with the National Academy of Sciences to study technologies for the production, transportation, and distribution of “advanced biofuels.” [Sec. 141]	No current provision.	Advanced biofuels are biofuels produced from feedstocks other than corn starch. (See Sec. 111 of H.R. 6 above.)
Study of Incentives for Renewable Fuels	No comparable provision.	Requires the President to study the renewable fuels industry and markets to determine production costs, factors affecting market prices, and financial incentives necessary to enhance the U.S. biofuels industry. [Sec. 147]	No current provision.	
Study of Effects of Ethanol-Blended Gasoline on Off-Road Vehicles	No comparable provision.	Requires the Secretary of Energy to study the effects of ethanol-blended gasoline on off-road vehicles and recreational boats. [Sec. 149]	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Grants for Production of Advanced Biofuels	No comparable provision.	Requires the Secretary of Energy to establish a grant program for the production of advanced biofuels that have at least a 50% reduction in lifecycle greenhouse gas emissions relative to current fuels. [Sec. 161]	No current provision.	Advanced biofuels are biofuels produced from feedstocks other than corn starch. (See Sec. 111 of H.R. 6.)
Integrated Consideration of Water Quality in Determinations on Fuels and Fuel Additives	No comparable provision.	Would expand 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. 163]	Section 211(c) of the Clean Air Act allows the EPA Administrator 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)]	
Anti-Backsliding	No comparable provision.	Requires the EPA Administrator to study the potential adverse effects to air quality from the expanded RFS (see “Renewable Fuel Standard” - H.R. 6, Sec. 111), and to promulgate regulations to mitigate those effects. [Sec. 164]	No current provision.	

Topic	H.R. 3221	H.R. 6 (Senate Version)	Current Law	Notes
Alternative Fuel Vehicle Action Plan	No comparable provision.	Requires the Secretary of Transportation to develop and implement an action plan so that alternative fuel vehicles (including E85 vehicles) represent at least 50% of new vehicle sales by 2015. [Sec. 520]	No current provision.	