

Federal Subsidies for Corn Ethanol and Other Corn-Based Biofuels

June 2015



Since its creation of the domestic market for corn ethanol after the energy crisis of the 1970s, the federal government has nurtured and maintained the ethanol industry with a steady stream of subsidies. Originally sold as a way to achieve energy independence and reduce greenhouse gas emissions, ethanol has been a favorite of many lawmakers: ethanol producers have received favorable treatment under the tax code, tariff protection from foreign competition, and even a government mandate for its use. As a result, taxpayers have spent billions of dollars over the last 30 years subsidizing the production of corn ethanol, while at the same time creating unintended costs for consumers and the environment.

To start, the farm bill, a massive piece of legislation covering topics ranging from nutrition assistance to broadband internet, provides government subsidies for the now-mature ethanol industry, including corporate agribusiness giants such as Archer Daniels Midland. The majority of support for corn ethanol in the farm bill comes from energy title programs such as the Bioenergy Program for Advanced Biofuels, trade programs such as the Market Access Program, and other commodity and crop insurance supports for corn and ethanol blender pumps. While the Rural Energy for America Program also provided subsidies for ethanol blender pumps beginning in 2011, such support was prohibited in the 2014 farm bill. In May 2015, however, USDA once again [announced](#) additional support for blender pumps through the Commodity Credit Corporation, a fund typically reserved for farm loans and other major farm subsidy programs.

Subsidies for corn ethanol also litter the tax code – including tax breaks for biodiesel and blender pumps which dispense higher blends of ethanol– in addition to Department of Energy programs and other subsidies scattered throughout the federal government such as the Renewable Fuel Standard (RFS) mandate for the use of corn ethanol administered by the Environmental Protection Agency (EPA). Late last year, Congress passed a tax extenders package that once again extended the Alternative Fuel Vehicle Refueling Property Credit, which provides a 30 percent tax break for gasoline stations or other facilities installing biodiesel or 85 percent ethanol (E85) blender pumps. The credit received a one-year retroactive extension for calendar year 2014. While Congress has signaled intent to take a different approach than routinely extending this package of tax breaks each year, time will tell if any wasteful tax credits are ended later this year.

The mature corn ethanol industry should no longer receive taxpayer support, whether through infrastructure subsidies for ethanol blender pumps in the tax code or production subsidies in the farm bill's energy title. Given the nation's current fiscal health, these subsidies are more egregious than ever.

Other Federal Supports for Corn Ethanol

In addition to the numerous special-interest supports corn ethanol has received over the years, including tax breaks, an import tariff, and infrastructure subsidies, a federal production mandate - the RFS - also heavily benefits corn ethanol. The maze of historic subsidies for corn ethanol has allowed the federal government to pick winners and losers, distort energy and agriculture markets, and contributed to expansion and overproduction of corn and ethanol in the industry.

Thankfully, the tariff and \$6 billion-per-year tax credit were forced into retirement at the end of 2011, but the RFS mandate still requires oil and gas companies to blend increasing amounts of biofuels with gasoline each year through 2022, and corn ethanol comprises a majority (more than 80 percent) of the mandate. Corn ethanol has routinely exceeded its RFS mandate since the mandate originated, and if the EPA approves corn butanol as an “advanced biofuel,” the production of corn-based biofuels would be further incentivized by the federal government. Already, federally-subsidized corn ethanol production has spurred numerous unintended consequences such as higher food prices and increased greenhouse gas emissions.¹ If mixtures of gasoline and ethanol increase from the current 10 percent ethanol (E10 blend) to E15 (which was approved by EPA), corn-based biofuels could consume an even greater portion of the RFS mandate. This is the opposite of Congress’ intent to meet a greater share of the U.S. renewable fuel supply with second-generation biofuels, such as cellulosic ethanol and advanced biofuels derived from non-food crops.

Corn Ethanol Supports in the Farm Bill

Realizing that the corn ethanol industry had already received its fair share of federal handouts, Congress prohibited corn starch ethanol from qualifying for new energy title spending authorized in the 2008 farm bill, which was reauthorized in 2014. The intent was to allow the next generation of biofuels (advanced fuels made from non-food sources like agricultural residues, wood waste, and perennial grasses) to receive a greater share of grants, loan guarantees, and other subsidies. But despite corn ethanol facilities being prohibited from receiving energy title funding, at least four of the 15 programs allowed nearly \$90 million dollars to be spent on corn-based biofuels from 2009 to 2013. That cost only adds to potential taxpayer liabilities with the federal backing of conditional loan guarantees in the USDA’s Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program.

As an example of the persistence of subsidies flowing to the industry, corn ethanol producers avoided the prohibitions on corn starch ethanol funding by convincing USDA to add ethanol blender pumps to its list of projects eligible for energy funding in the farm bill, even though Congress never authorized this controversial use of taxpayer dollars. Before this practice ended in Feb. 2014, millions of dollars were squandered on the mature corn ethanol industry. Nevertheless, in May 2015, USDA once again [announced](#) new funding for blender pumps through a different USDA spending account. Recipients continue to circumvent other energy title program eligibility rules by refining biofuels from corn oil instead of corn starch and producing fuels like butanol and biodiesel instead of ethanol.

Farm bill programs supporting corn-based biofuels, in addition to other forms of renewable energy, are listed in Table 1 below. Three programs are found in the farm bill's energy title, while new programs subsidize ethanol through the trade and commodity titles of the farm bill (more specifically, the promotion of ethanol exports through USDA's Market Access Program and the installation of ethanol blender pumps through USDA's Commodity Credit Corporation). As of 2014, USDA announced that ethanol exports may be promoted through MAP. According to the U.S. Grains Council, at least 3 recent trade missions to the Philippines, Latin America, Japan, and Korea promoted U.S. ethanol exports.

Table 1: Corn Ethanol Subsidies in the Farm Bill Energy and Trade Titles

Farm Bill Section	Program/fund name	Description	Corn-based biofuels projects receiving funding	Funding for corn-based biofuels from 2009 to 2014
Energy Title	Bioenergy Program for Advanced Biofuels	Payments to advanced biofuels facilities to expand annual production	1 corn oil biodiesel facility and several corn ethanol facilities, presumably because some also use milo (in addition to corn) as a feedstock in the refining process.	\$55 million (grants and loans)
	Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program	Grants and loan guarantees for advanced biofuels and heat and power facilities	SoyMor, a facility using corn and soybean oil for biodiesel production, received a conditional loan guarantee in 2009.	\$25 million (conditional loan guarantee)
	Repowering Assistance Program	Reimbursements for biorefineries to replace fossil fuel power sources with biomass (like wood chips, municipal solid waste, or perennial grasses)	Two corn ethanol facilities received taxpayer funding to replace natural gas and fossil energy with a biomass boiler and a biogas digester.	\$6.9 million (reimbursement payments)
Trade Title	Market Access Program	Market trade promotion program designed to expand agricultural exports	In FY15, the U.S. Grains Council received \$5,073,674 for its overall trade missions, but the amount spent on ethanol specifically is unknown. ² The Council notes that the Renewable Fuels Association and Growth Energy also accompanied it on ethanol trade missions, but these 2 organizations aren't direct recipients of MAP subsidies. ³	Unknown
Commodity Title	Commodity Credit Corporation	Traditionally a fund reserved to pay out farm subsidies and farm loans, USDA proposed also using CCC funds to	In May 2015, USDA announced CCC funding for ethanol blender pumps, which primarily benefit corn ethanol.	\$100 million is to be spent after USDA solicitation is posted in summer of 2015

	subsidize ethanol	
* Note that until enactment of the farm bill in Feb. 2014, the Rural Energy for America Program (REAP) also provided \$3.3 million in subsidies for fuel pumps dispensing corn ethanol even though the program was designed to fund grants and loan guarantees for rural energy efficiency and renewable energy projects, including solar, wind, hydropower, geothermal, and biomass.		

Corn Ethanol Supports in the Federal Tax Code

Some subsidies for corn ethanol are still scattered throughout the federal tax code. Three of the most prominent are listed in Table 2 below. Ten-year cost estimates are generally derived from the Joint Committee on Taxation, with specific references listed in the table.

Tax Credit Name	Description	Total Ten-Year Cost (FY15-24)
Alternative Fuel Vehicle Refueling Property Credit	Facilities dispensing certain alternative fuels can receive a refueling property credit in the form of a 30% tax break. Eligible facilities include gasoline stations, those installing biodiesel or 85% ethanol (E85) blender pumps , or repowering sites for electric vehicles. Stations dispensing natural gas, liquefied natural gas (LNG), and liquefied petroleum gas (LPG) are also eligible. ⁴ The credit expired at the end of 2013 but given recent history, it will be extended in 2014.	\$380 million ⁵
Master Limited Partnerships ⁶	“An MLP is typically a limited liability company (LLC) treated as a partnership for taxation purposes and traded on a public exchange... Investors are treated for tax purposes as if they directly earned the MLP’s income. By avoiding double taxation, MLPs have access to lower cost of capital, which allows them to build and operate low-return assets to provide a sufficient rate of return to attract investors.” ⁷ Of the 100 entities benefiting from the MLPs’ special tax treatment, most are in the oil and gas industry, but in 2008, the transportation and storage of ethanol, biodiesel, and other alternative fuels also became eligible. ⁸	\$11.6 billion (for FY14-23) ⁹
Volumetric Biodiesel Excise Tax Credit and Renewable Biodiesel Tax Credit	The biodiesel production tax credit of \$1 per gallon supports eligible feedstocks such as “virgin oils, esters derived from corn , soybeans, sunflower seeds, cottonseeds, canola, crambe, rapeseeds, safflowers, flaxseeds, rice bran, mustard seeds, and camelina, and from animal fats.” ¹⁰ The credit expired at the end of 2013 but given recent history, it will be extended in 2014.	\$14.5 billion (\$1/gallon tax credit multiplied by future production levels, as estimated by the Energy Information Administration) ¹¹

Corn Ethanol Subsidies at the Departments of Energy & Transportation

As stated above, corn ethanol subsidies are also scattered throughout other government agencies, such as the Departments of Energy (DOE) and Transportation (DOT). Some of the most prominent subsidy programs are listed in Table 3 below.

Table 3: Corn Ethanol Subsidies at the Departments of Energy & Transportation		
Program Name	Description	Total Cost
DOE Clean Cities Program	The Clean Cities Program was created in 1993 after passage of the Energy Policy Act of 1992, which “required certain vehicle fleets to acquire alternatively-fueled vehicles”; the program provides “informational, technical, and financial resources to EPA-regulated fleets and voluntary adopters of alternative fuels and vehicles” in nearly 100 U.S. cities. ¹² Clean Cities works with national parks, municipalities, and state-based incentive programs to promote greater consumption of alternative fuels and the installation of new fueling equipment, including 85 percent ethanol (E85) blender pumps. Many recent projects were funded through 2009 American Recovery and Reinvestment Act grants. ¹³ See a full list of recipients in Table 4 below.	Nearly \$300 million spent on 2009 Recovery Act (stimulus) grants for fueling infrastructure and alternatively fueled vehicles. ¹⁴
DOE State Energy Programs (SEP)	State Energy Programs “provide financial and technical [energy] assistance to states through formula and competitive grants”; the program has been funded by the 2009 American Recovery and Reinvestment Act although additional grants are awarded annually depending on available funding. ¹⁵ Grants have been awarded for the installation of E85 blender pumps, alternative power sources for ethanol biorefineries, and ethanol promotional events. Table 4 includes a list of recipients.	\$3.1 billion of total SEP funding to U.S. states under the 2009 Recovery (stimulus) legislation
DOT Congestion Mitigation and Air Quality (CMAQ) Improvement Program	The CMAQ program, authorized in 1991, “was implemented to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief”; it is jointly administered by the Federal Highway Administration and the Federal Transit Administration. ¹⁶ The City of Hoover received funding through the Alabama Clean Fuels Coalition for a new E85 tank and dispenser at its Public Safety Center. ¹⁷	\$4.4 billion in total for the program in 2013-14, funded by the Moving Ahead for Progress in the 21st Century Act of 2012 (MAP-21) ¹⁸
DOT Biobased Transportation Research Program/Sun Grant Initiative	One of the 2007 Regional Competitive Grants was awarded to David Holland of Washington State University to examine “crop and fuel production for biodiesel, corn ethanol, and cellulosic ethanol in the Pacific Northwest using potential price and productivity scenarios”; the \$200,000 grant was entitled “Regional Economic Analysis of Feedstock Production and Processing in the Pacific Northwest.” ¹⁹	At least \$200,000 in 2007

As stated in Table 3, several grants for corn ethanol blender pumps, refineries, and promotional activities were funded through the 2009 Recovery Act (stimulus). These subsidies were awarded through either DOE's Clean Cities Program or its State Energy Programs.²⁰ Table 4 includes a list of individual recipients.

Table 4: Corn Ethanol Subsidies Awarded through 2009 Recovery Act via DOE's Clean Cities or State Energy Programs (SEP)			
State	Recipient Name	Description	Total Cost
AL, FL, GA	Protec Fuel Management, LLC	In partnership with the Renewable Fuel Association, Growth Energy, Testing LLC, General Motors, the National Ethanol Vehicle Coalition, NASA, the U.S. Postal Service, and Enterprise Rent-A-Car, received award to open 30 E85 and B20 stations in FL, AL, & GA.	Up to \$900,000
CA	Clean Energy Manufacturing Program	Stimulus funding provided \$59.5 million for the Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program and \$30.6 million for the State Energy Program (SEP) Clean Energy Business Financing Program. A portion was used to fund "ethanol production incentives" which will "re-start idle corn ethanol production facilities by providing price assurance to the plant owners." ²¹	Received \$6 million for "ethanol production incentives"
CA	Low Carbon Fuel Infrastructure Investment Initiative	Installation of up to 75 new E85 stations by 2012; also funded by Propel Fuels and the California Energy Commission. ²²	Unknown
CO	Cities of Fort Collins & Boulder	Using alternative fuel vehicles utilizing power sources such as compressed natural gas, biodiesel, hybrid, electric, and E85. ²³	Unknown
ID	State of Idaho	Awards for "two new 12,000-gallon fuel tanks (one for gasoline, one for ethanol) and [an ethanol blender pump]." ²⁴	Unknown, but ID received \$28.57 million in SEP funding from the 2009 Recovery Act ²⁵
IA	Kum & Go, L.C.	In partnership with the Iowa Department of Natural Resources, Iowa Corn Growers Association, Iowa Renewable Fuels Association, National Ethanol Vehicle Coalition, and the Iowa Farm Bureau, received award to install 30 more E85 blender pumps along interstates. ²⁶	Up to \$1 million
KS	State of Kansas Energy Division	Western Plains Energy in Oakley, KS, received an award, administered by the Kansas Department of Commerce, for "the construction of a biomethane digester at the Western Plains' [corn] ethanol plant... the digester will convert feedlot and other waste into biogas." ²⁷	Received \$15.6 million out of \$38.3 million of total SEP funding
KY	Mammoth Cave National Park	1 st national park to participate in the National Clean Cities Initiative; utilized flex fuel vehicles & E85 blender pumps. ²⁸	Unknown
MD	Maryland Grain Producers Utilization Board	In partnership with PMG, Mid-Atlantic Petroleum Properties, LLC, Phillips, and Montgomery County, received award to build E85 blender pumps, 20 percent biodiesel (B20), and propane refueling facilities in MD, VA, and DC.	Up to \$469,364
MN	American Lung Association of the Upper Midwest	In partnership with the Minnesota Clean Air Choice Team, the Twin Cities Clean Cities Coalition, Kwik Trip, Holiday Companies, the Farmers Union Oil Co., and the Minnesota Corn Growers Association, received award to construct 15 new E85 blender pump stations in MN.	Up to \$377,350
MN	Energy Division of Minnesota's Department of	Through Clean Cities and SEP, received funding to distribute several alternative fuels, including E85, and "clean out tanks and ensure proper fuel equipment compatibility" since ethanol	Unknown, but MN received \$54.17 million

	Commerce	corrodes existing fueling equipment and storage tanks.	in SEP funding from the 2009 Recovery Act ²⁹
ND	North Dakota Office of Renewable Energy and Energy Efficiency	ND launched a “Blender Pump Pilot Project... in 2009 [that] utilize[d] SEP funding to offer grants to North Dakota motor fuel retailers to purchase pumps for dispensing ethanol or biodiesel. SEP funds... supported the installation of 80 blender pumps [and]... also promote[d] the use of alternative fuels.” ³⁰	Unknown, but ND received \$24.59 million in SEP funding from the 2009 Recovery Act
NV	Nevada State Motor Pool	“Fueling infrastructure [awards]... for the use of ethanol based fuels (E85) for state vehicles [in Las Vegas].” ³¹	Received \$170,250 out of \$34.71 million of total SEP funding
PA	Greater Philadelphia Clean Cities (GPCC)	With funding from DOE and a state Alternative Fuels Incentive Grant, an E85 corridor with at least 19 flex fuel stations was created from State College to Philadelphia; funds were also used to teach “consumers how use a vehicle identification number to determine E85 compatibility.” ³² Participants ranged from small gas stations to large companies such as AMERIGreen, Shipley Energy, and Sheetz. ³³	Unknown, but PA received \$99.68 million in SEP funding from the 2009 Recovery Act ³⁴
SD	State of South Dakota	Awards paid for a statewide energy audit and the “installation of ethanol fueling pumps at 3 fleet locations [of state owned facilities in] Sioux Falls, Rapid, and Pierre” ³⁵	Unknown, but SD received \$23.71 million in SEP funding from the 2009 Recovery Act
TN	Knoxville Utilities Board	Utilize E85-powered flexible fuel vehicles, among other alternatively fueled vehicles. ³⁶	Unknown
TN	University of Tennessee	In partnership with the Clean Energy Coalition, Ann Arbor Clean Cities, Clean Fuels Ohio, the Kentucky Clean Fuel Coalition, the East Tennessee Clean Fuels Coalition, Clean Cities-Atlanta, Middle Georgia Clean Cities, the Florida Solar Energy Center, the Space Coast Clean Cities, and the Gold Coast Clean Cities Coalition, received award to increase the availability of E85 and B20 along I-75.	Up to \$818,091
TX	City of Austin	Utilize E85-powered flexible fuel vehicles, among other alternatively fueled vehicles. ³⁷	Unknown
WI	State of Wisconsin	In partnership with the Wisconsin Retail Gas Stations/Fuel Distributors, Innovation Fuels Tanco Milwaukee and CHS, Inc., Wisconsin Clean Cities, and Southeast Area, Inc., received award “to build 27 new E85 fueling stations and install biodiesel blending equipment at three terminal locations.”	Up to \$1 million
--	Alternative Fuel Trade Alliance	Alliance of the Renewable Fuels Association, the National Biodiesel Foundation, the Clean Vehicle Education Foundation, and the Propane Education and Research Council received award to “hold more than 45 workshops & at least 64 stakeholder events to increase knowledge about alternative fuels & advanced vehicle technologies.”	Up to \$1.6 million

Conclusion

It’s time the mature corn ethanol industry survived on its own two feet without taxpayer support. After more than 30 years of federal backing, corn ethanol subsidies scattered throughout the federal tax code and farm bill energy title should be eliminated once and for all.

Economic, environmental, and public health costs would also decline if unintended consequences of ethanol production were ended, benefiting drivers, consumers, and the general public.

For more information, contact Taxpayers for Common Sense at 202-546-8500.

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- ¹ <https://www.cbo.gov/publication/45477>, <http://www.nap.edu/catalog/13105/renewable-fuel-standard-potential-economic-and-environmental-effects-of-us>
- ² <http://www.fas.usda.gov/programs/market-access-program-map/map-funding-allocations-fy-2015>
- ³ <http://www.grains.org/news/20141211/usgc-ethanol-assessment-team-finds-growth-potential-philippines>
- ⁴ <http://www.law.cornell.edu/uscode/text/26/30C>
- ⁵ https://www.jct.gov/publications.html?func=download&id=4677&chk=4677&no_html=1
- ⁶ In April 2013, Senator Coons (D-DE) introduced the Master Limited Partnerships Parity Act which would expand the number of activities in ethanol, biodiesel, and other alternative fuels production that can qualify for MLPs. Currently, only transportation and storage of these fuels qualify for MLPs, but Sen. Coon's legislation would also allow production of renewable fuels to qualify for MLPs. <http://www.coons.senate.gov/issues/master-limited-partnerships-parity-act>
- ⁷ <http://www.forbes.com/sites/williampentland/2013/06/10/mlp-parity-act-disrupting-distributed-energy/>
- ⁸ Kinder Morgan, one of the only owners of a short ethanol pipeline, uses an MLP to lower its tax liability, Valero is considering using one for its ten ethanol plants, and Buckeye Partners and Magellan Midstream Partners, L.P., both current users of MLPs, considered building an ethanol pipeline from IA to NJ.
<http://www.coons.senate.gov/issues/master-limited-partnerships-parity-act>,
http://www.dividendyieldhunter.com/Master_Limited_Partnerships.html,
<http://fuelfix.com/blog/2013/05/01/valero-might-form-an-mlp/>
- ⁹ <https://www.jct.gov/publications.html?func=startdown&id=4663>, <http://mlpguy.com/archives/1417>
- ¹⁰ <http://www.gpo.gov/fdsys/pkg/BILLS-109hr4756ih/html/BILLS-109hr4756ih.htm>
- ¹¹ <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2014&subject=0-AEO2014&table=2-AEO2014®ion=1-0&cases=full2013full-d102312a,ref2014-d102413a>
- ¹² <http://www1.eere.energy.gov/cleancities/about.html>
- ¹³ <http://www.afdc.energy.gov/case/1056>
- ¹⁴ <http://www1.eere.energy.gov/cleancities/projects.html>
- ¹⁵ <http://www1.eere.energy.gov/wip/sep.html>
- ¹⁶ http://www.fhwa.dot.gov/environment/air_quality/cmaq/
- ¹⁷ <http://www.afdc.energy.gov/case/1423>
- ¹⁸ http://www.fhwa.dot.gov/environment/air_quality/cmaq/
- ¹⁹ <http://www.sungrant.org/NR/rdonlyres/00871E3C-9AF0-4205-B903-E92F4164BBDC/1101/DOT2007RGGAWardsIntroductionandSummary2A.pdf>
- ²⁰ <http://www1.eere.energy.gov/cleancities/projects.html>
- ²¹ <http://www.energy.ca.gov/recovery/cleanenergy.html>
- ²² http://propelfuels.com/news_and_media/press_releases/propel_rewards_bay_area_drivers_on_national_alternative_fuel_vehicle_day_oc/
- ²³ <http://www.afdc.energy.gov/case/1223>
- ²⁴ <http://www.afdc.energy.gov/case/1046>
- ²⁵ http://www1.eere.energy.gov/wip/recovery_act_states.html
- ²⁶ <http://www.iowa.gov/recovery/article.php?story=20110426073145893>
- ²⁷ <http://www.ethanolproducer.com/plants/listplants/US/Existing/Sugar-Starch/>
- ²⁸ <http://www.afdc.energy.gov/case/83>
- ²⁹ http://www1.eere.energy.gov/wip/recovery_act_states.html
- ³⁰ <http://www.naseo.org/members-state?State=ND>
- ³¹ http://www.swenergy.org/policy/arra/sep/NV_SEP_Plan.pdf
- ³² <http://www.afdc.energy.gov/case/1068>
- ³³ <http://www.afdc.energy.gov/case/1068>
- ³⁴ http://www1.eere.energy.gov/wip/recovery_act_states.html
- ³⁵ https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&cad=rja&ved=0CDQQFjACOAO&url=http%3A%2F%2Fwww.sdashrae.org%2Fpresentations%2Farrasept09.ppt&ei=GW_xUYDhD5Pm8QSS2IC4AQ&usq=AFQjCNE90YoWEkk40Y8vQnJt-7BBY50VDw&bvm=bv.49784469,d.eWU
- ³⁶ <http://www.afdc.energy.gov/case/263>, <http://www.afdc.energy.gov/case/303>, <http://www.afdc.energy.gov/case/1223>
- ³⁷ <http://www.netl.doe.gov/publications/proceedings/10/cc-west/Neef-CentralTexas.pdf>