



Let the VEETC Expire: Moving Beyond Corn Ethanol Means Less Waste, Less Pollution and More Jobs

Transitioning toward low-carbon fuels is critical to breaking America's dependence on oil and helping to curb global warming. But while some biofuels reduce pollution, others pollute more than the oil they replace. Unfortunately, the biggest government incentive program for biofuels—the Volumetric Ethanol Excise Tax Credit (VEETC)—fails to differentiate between types of biofuels, and has wasted more than \$20 billion taxpayer dollars since 2006 subsidizing a polluting corn ethanol industry. By indiscriminately subsidizing any type of ethanol, the VEETC comes at the expense of supporting more competitive energy technologies in non-polluting wind, solar, geothermal and advanced biofuels—made from sustainably produced energy crops like willow and switchgrass—that create many more green jobs and far less pollution. Now Congress is considering a 5-year extension of the VEETC, which would cost U.S. taxpayers another \$31 billion. Instead of paying big oil billions of dollars to obey the law, NRDC urges Congress to let the VEETC expire and replace it with a smarter, cheaper, and greener biofuels tax credit that rewards real environmental performance.

U.S. taxpayers have paid oil companies more than \$20 billion under the VEETC to blend corn ethanol they are already required to blend by law

Multiple federal policies encourage the production and consumption of corn ethanol as an alternative to gasoline. The Renewable Fuel Standard (RFS), established in 2005 and expanded in 2007, requires that increasing quantities of biofuels, including up to 15 billion gallons of corn ethanol, be blended into U.S. transportation fuels every

year. Although the RFS imposes greenhouse gas emissions standards, they mostly cover emerging advanced biofuels and exempt the vast majority of conventional corn ethanol. In addition, though we have no tariff on imported oil, we impose a \$0.54 per gallon tax on imported ethanol to protect domestic producers against foreign competition. The government also gives oil companies a \$0.45 tax credit (the VEETC) for every gallon of ethanol blended with gasoline, regardless of environmental performance. In 2007, oil companies collected

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75 percent of all federal tax credits available for all different types of renewables in exchange for blending corn ethanol, a mature technology that has been commercially operational for decades. That is *four times* the credits available to companies trying to expand all other forms of renewable energy, including solar, wind and geothermal.¹

Extending the VEETC will not affect corn ethanol market growth—it will just cost U.S. taxpayers billions more

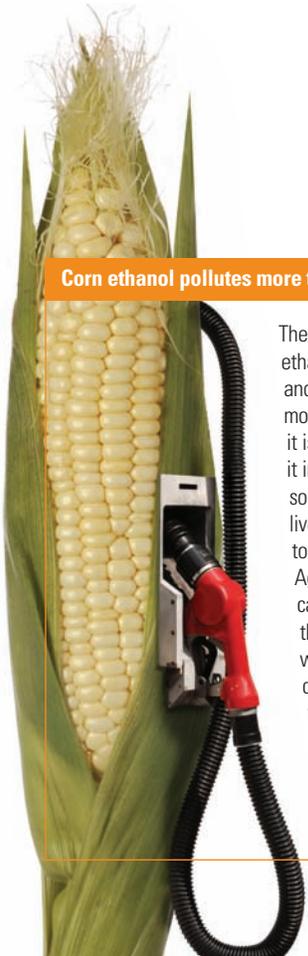
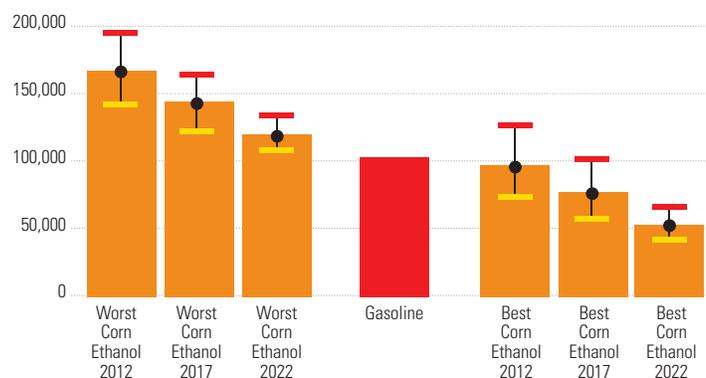
Corn ethanol is a mature technology, with over 190 operational facilities as of July, 2010, and more under construction.² Yet, the corn ethanol industry argues that its margins are thin and the VEETC is critical to its survival. But every year since the RFS was put in place, both demand and supply of domestic corn ethanol has exceeded mandated levels. As a result, oil companies have been able to set demand and price levels for ethanol, keeping prices low and pocketing much, if not all, of the VEETC as profit. The little additional ethanol demand driven by the VEETC will not lead to significant cost reductions, improved economic competitiveness, or self sufficiency in the industry. In fact, extending this redundant subsidy will simply cost U.S. taxpayers nearly \$5.4 billion in 2010—and more than \$31 billion if the tax credit is extended for five years.

Two recent studies by the University of Missouri Food and Agricultural Policy Research Institute (FAPRI) and the Center for Agricultural and Rural Development (CARD) at Iowa State University suggest that the domestic corn ethanol industry will continue to grow without the VEETC, just at a slightly slower rate. FAPRI estimates that even without the VEETC, the domestic ethanol industry will grow at roughly 3 percent per year on average, just 1 percent less than the baseline, resulting in just 10 percent fewer gallons of ethanol produced between 2011 and 2015. FAPRI also forecasts that a 1-year extension of the tax credit will lead oil companies to consume just 1.37 billion gallons of domestic corn ethanol more than they would otherwise.³ At a price tag of \$6 billion, this will cost U.S. taxpayers approximately \$4.34 per extra gallon. CARD finds the impact of the VEETC on domestic ethanol production to be even smaller and suggests that allowing it to expire would have almost no effect on U.S. corn ethanol markets in 2011, since oil companies will still be required to buy enough ethanol to meet increasing RFS mandates. It estimates that a 1-year extension will only drive an additional 700 million gallons of domestic corn ethanol production, 5.5 percent more than what would be produced in the United States without the tax credit and just over 7 percent more than the supply already mandated by the RFS. This means U.S. taxpayers would pay \$7.00 per incremental gallon.⁴

Corn ethanol pollutes more than the gasoline it is supposed to replace

The VEETC almost exclusively supports ethanol from corn, which, when all direct and indirect emissions are added, creates more global warming pollution than the oil it is supposed to replace. On top of that, it increases water pollution, erodes our soils, and raises the price of corn fed to our livestock and sold in our stores. According to analysis by the Environmental Protection Agency, although corn ethanol technically can be produced with lower GHG emissions than gasoline *if* technology improves, what the industry actually produces today causes more global warming pollution than gasoline.⁵ And what if ethanol plant technology fails to improve? A decade from now, corn ethanol would continue to cause more pollution than gasoline.

Corn Ethanol GHG Emissions (gCO₂e/mmBtu)



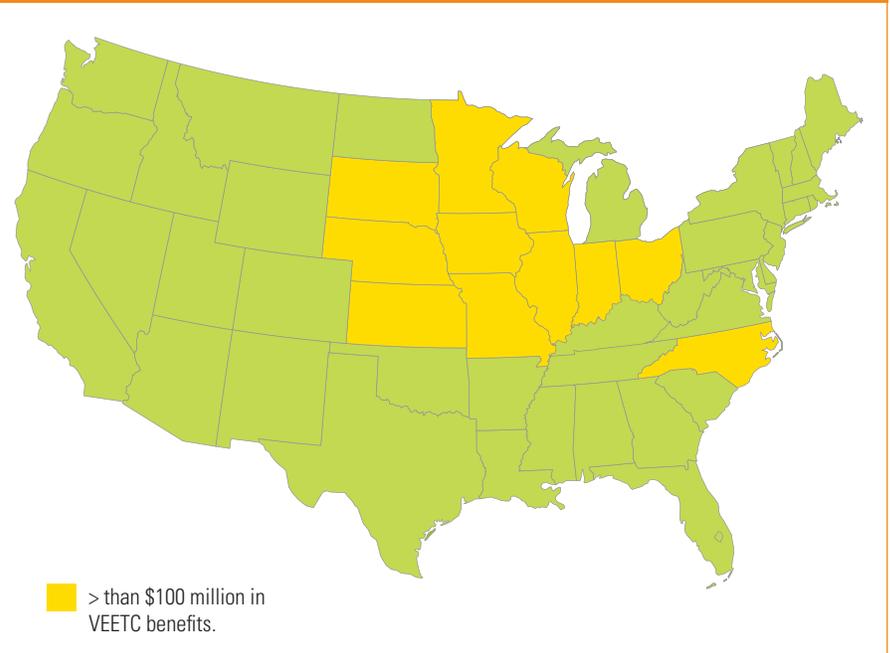
Jobs under the VEETC are 8 to 16 times more costly than the average for the U.S. economy

Corn ethanol lobbyists defend the VEETC on the basis of the jobs they claim the corn ethanol industry creates. But if, as the industry claims, a 100 million gallon per year plant requires only 45 workers to operate, then in 2009, corn ethanol plants directly employed approximately 5,566 workers. In that year alone, U.S. taxpayers spent \$4.82 billion in VEETC subsidies. The RFS aside, if we assume the VEETC was responsible for every single job in the industry, this translates into more than \$865,000 per direct job. Multiple studies estimate the cost of job creation in the United States to be \$50,000 to \$100,000 per direct job. This means any jobs created as a result of the VEETC are 8 to 16 times more costly than what is typical in the U.S. economy. CARD estimates that extending the VEETC would drive only 700 million additional gallons of domestic ethanol production in 2011, requiring only about 315 additional workers. Using a modest job multiplier to account for indirect job creation, this additional ethanol demand will only generate between 945 and 1,260 total jobs. At a cost of \$5.5 billion, this translates into roughly \$4.4 - 5.8 million per year to create and maintain each job—an unacceptably high price tag.

And the VEETC fails to create a national biofuels industry

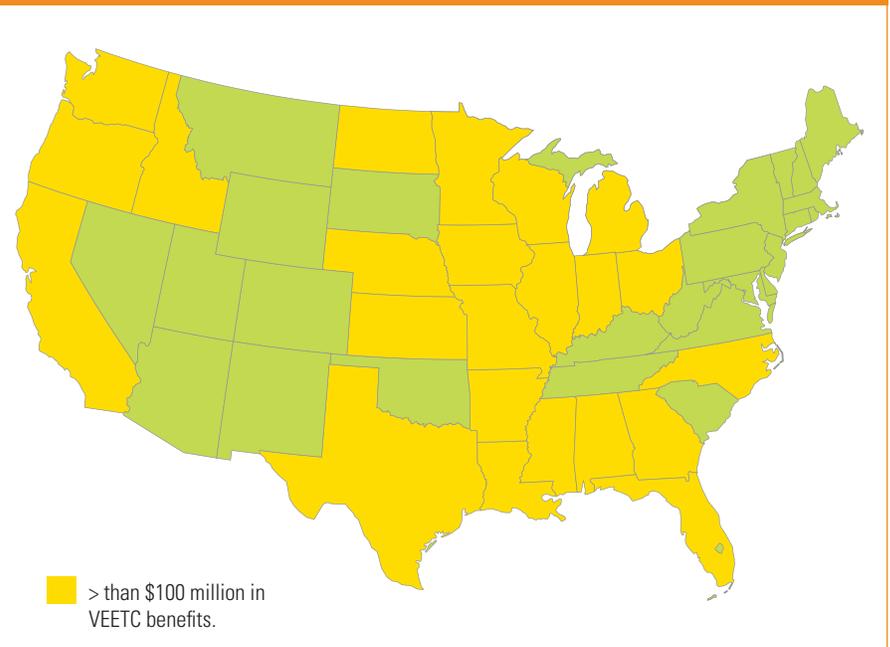
Many states have substantial biomass resources that could be harvested for conversion into biofuels while protecting or even improving soil, water, and wildlife habitats. Unfortunately, today's ethanol subsidies have gone almost entirely to corn and have failed to incentivize the development of more cutting edge biofuels like cellulosic ethanol, which is produced from cellulosic biomass, such as the leaves, stems and stalks of plants. If the current tax credit was redirected to support cellulosic biofuels, it would more than double the number of states participating in the biofuels market in a significant way. If the total 2009 VEETC value was used for cellulosic ethanol, 23 states would see more than \$100 million in annual benefits.⁶

Figure 1: Just a Handful of States Benefitted from the Corn Ethanol Tax Credit in 2009



Distribution of VEETC value across states based on production

Figure 2: State Participation in the Biofuels Industry Doubles Under Cellulosic Tax Credit



Distribution of VEETC value across states based on production

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If the VEETC is extended, oil companies win and American drivers lose

Depending on the price of ethanol relative to the price of gasoline, oil companies are able to pocket more or less of the VEETC and pass some of that value through to drivers via gasoline prices.⁷ Based on 2009 market prices for ethanol and gasoline, 20 to 30 percent of VEETC value likely went to ethanol producers, or roughly \$0.09-\$0.13 per gallon. Oil companies pocketed the remainder, increasing their profit margins. If half that value was passed through to drivers, the average driver saw a tiny benefit of roughly \$0.015-\$0.018 per gallon. But because the mileage of gasoline blended with ethanol is about 2-3 percent lower than regular gasoline,⁸ drivers have to buy more ethanol-blended gasoline overall. When this BTU penalty is taken into account, American drivers in 2009 saw no benefit at all from the VEETC. In fact, drivers were penalized \$0.08 cents per gallon on average, which translates into a nationwide average penalty of \$22.22 per driver.

So what would happen if the VEETC is allowed to expire? U.S. tax payers would save \$17.5 billion

Over the next five years, oil companies will be required to buy a total of 69 billion gallons of corn ethanol. If the VEETC is extended, taxpayers will give them more than \$31 billion in subsidies to do so. Over that same period, FAPRI estimates that oil companies will have \$5.4 billion in RFS compliance costs,⁹ which they will likely pass on to consumers. The total cost of extending the VEETC for five years is therefore roughly \$36.5 billion, or \$7.3 billion per year.

If the VEETC is allowed to expire, taxpayers will save money and big oil companies won't get paid to consume a few billion gallons more of corn ethanol we don't need. With or without the VEETC, oil companies will still be required to buy and blend RFS-mandated quantities of corn ethanol. FAPRI estimates that compliance costs for oil companies will increase to roughly \$19 billion over the five-year period, but absent hugely expensive VEETC subsidies, this will save \$3.5 billion per year over the five years, or a whopping \$17.4 billion over five years.

Total Savings from Eliminating the VEETC

	VEETC & Tariff Extended	VEETC & Tariff Expired
Total Cost 2011-2015	\$ 36,456,000,000	\$ 19,020,000,000
Cost per year	\$ 7,291,200,000	\$ 3,804,000,000
Savings per year		\$ 3,487,200,000
TOTAL SAVINGS		\$ 17,436,000,000

Congress should pass a greener biofuels tax credit that rewards environmental performance

The VEETC fails to require actual performance from biofuels in delivering climate and other environmental benefits. A smarter, cheaper, and greener biofuel tax credit would be technology neutral, applying to all fuels, including ethanol, biodiesel, and butanol, and all feedstocks, including corn, cellulose, algae, and vegetable oils. Additionally, it would be performance-based, directly rewarding better environmental performance with higher tax credit payments. By paying domestic renewable fuel producers for real environmental performance, it would save money, help speed the transition to advanced biofuels that can make a real contribution to our energy security, and thus do more to generate both reinvestment and new investment than the current VEETC. It's time for Congress to allow the VEETC to expire, save taxpayers money, and support the transition to new, clean biofuels.

¹ EIA, U.S. Department of Energy. Federal Financial Interventions and Subsidies in Energy Markets 2007. SR/CNEAF/2008-01. April 2008.

² Renewable Fuels Association: <http://www.ethanolrfa.org/bio-refinery-locations/>.

³ US Baseline Briefing Book; Projections for agricultural and biofuel markets; Food and Agricultural Policy Research Institute, University of Missouri, March, 2010.

⁴ Babcock, Bruce. *Costs and Benefits to Taxpayers, Consumers, and Producers from U.S. Ethanol Policies*; Center for Agricultural & Rural Development, July, 2010.

⁵ EPA, RFS2 Final Rule Life Cycle Analysis Supplemental Materials, see <http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480a8978a>.

⁶ Based on an NRDC analysis. Detail available upon request.

⁷ Assumes 50% of oil company blend margins are passed through to drivers and E10 gasoline (blend of 10 percent ethanol and 90 percent gasoline).

⁸ Ethanol blended gasoline has a lower British Thermal Units (BTU) content than all hydrocarbon gasoline.

⁹ To comply with the RFS, oil companies must surrender Renewable Identification Numbers (RINs) in amounts equivalent to their share of the RFS mandate. RIN prices reflect the difference between the ethanol price required to keep ethanol plants running and the market value of ethanol plus the \$0.45 tax credit.

