

BACKGROUND

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Time to Eliminate Energy Cronyism in the Farm Bill

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Abstract

Since 2002, every rendition of the farm bill has contained an energy title that funds biofuels and bioenergy as well as so-called green technologies such as wind and solar energy. Energy programs in the farm bill have squandered taxpayer money on economic failures and promoted corporate welfare by distributing funds to established, extremely successful companies. Congressman Andy Biggs (R-AZ) recently introduced the Farewell to Unnecessary Energy Lifelines (FUEL) Reform Act, which would eliminate the energy title (Title IX) of the farm bill. While Congress should pursue an aggressive agenda that ends subsidies for all energy sources and technologies, the FUEL Act moves U.S. energy policy in the right direction by eliminating energy cronyism in the farm bill.

The Farewell to Unnecessary Energy Lifelines (FUEL) Reform Act, recently introduced by Representative Andy Biggs (R-AZ), calls for the elimination of the energy title (Title IX) of the farm bill.¹ The farm bill, which moves through the legislative process every five years, is a major vehicle for energy subsidization. Since 2002, farm bills have contained an energy title that primarily funds biofuels, but also include so-called green technologies such as wind and solar energies.

The FUEL Reform Act moves energy policy in the right direction by eliminating energy cronyism in the farm bill. Examination of the farm bill's energy programs reveals that these programs have squandered taxpayer money on economic failures and promoted corporate welfare by distributing funds to established and successful companies. The use of policy to prop up one energy source over another is misguided—regardless of the outcome of a government-funded project.

KEY POINTS

- The energy title in the farm bill subsidizes biofuels, bioenergy, and other green technologies such as wind and solar energy. The subsidies distort energy markets and the flow of investments. Whether the companies leveraging public finance ultimately succeed or fail, the energy title itself is an inappropriate function of the federal government.
- Projects promoted by the government draw interest from the private sector, taking money away from other potential investments. Historically, the market has always met America's energy needs, and it will continue to do so without the government's help.
- Congressman Andy Biggs (R-AZ) recently introduced the Farewell to Unnecessary Energy Lifelines (FUEL) Reform Act, which would eliminate the energy title of the farm bill. While Congress should pursue an aggressive agenda that ends subsidies for all energy sources and technologies, the FUEL Reform Act moves U.S. energy policy in the right direction by eliminating energy cronyism in the farm bill.

This paper, in its entirety, can be found at <http://report.heritage.org/bg3248>

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Energy Spending in the Farm Bill

Title IX of the farm bill includes 10 energy provisions that promote the production of alternative energy sources, such as biofuels and bioenergy, as well as other renewable energy sources and energy conservation efforts. Additionally, Title VII of the farm bill contains the Sun Grant Program, which allocates funds to universities and federally funded research institutions to study and promote bioenergy. Examination of federal spending on energy in the farm bill, for bioenergy or otherwise, reveals a number of prevalent trends. Federal funding supports:

- Companies that failed to survive even with governmental assistance.
- Projects or products that, because of substantial private investor or profitable producer backing, have no need for government-backed loans or handouts.
- Projects prematurely labeled as success stories.
- Private investors hedging their bets and congregating toward projects that receive public money. (On the surface, these projects appear to be financial losers but the government involvement entices companies to take a chance.)
- Companies and projects that benefit both from multiple preferential policies (like the Renewable Fuel Standard) and state subsidies (grants, tax credits, and tax-exempt bonds) to advance biofuels.

Energy subsidies themselves are an inappropriate function of the federal government. The subsidies distort energy markets and the flow of investments. Projects promoted by the government draw interest from the private sector, taking money away

from other potential investments. Historically, the market has always met America's energy needs, and it will continue to do so without the government's help. Congress should eliminate Title IX and the Sun Grant Program in the farm bill and aggressively pursue reforms that will eliminate subsidies for all energy sources.

The Damage Done by the Farm Bill's Energy Subsidies

When solar manufacturer Solyndra defaulted on a \$535 million loan from the taxpayers, it left a black mark on the Department of Energy's (DOE) financing of green energy technologies. Policymakers held congressional hearings, questioned the legitimacy of the program, and offered legislative solutions to prevent wasting any more taxpayer money. Policymakers should conduct the same exercise with the energy title of the farm bill. Throughout the title, the federal government has financed now-defunct projects, promoted corporate welfare, and distorted energy markets by funneling public money toward politically preferred technologies.

Bioenergy Loans from the U.S. Department of Agriculture. Section 9003 of the farm bill provides taxpayer-backed loan guarantees to companies for the construction, development, and retrofitting of biorefineries, renewable chemicals,² and bio-based product manufacturing. The U.S. Department of Agriculture's (USDA) Rural Development Office offers guarantees on loans up to \$250 million, which can cover as much as 80 percent of an eligible project's cost.³ For a company to secure a loan under this program, it must complete a two-phase application process.⁴ If the company's application is successful, the USDA first offers a conditional loan guarantee commitment and monitors the project's development to finalize and actually issue the loan. For example, the USDA announced a conditional commitment to

1. News release, "Congressman Andy Biggs Introduces the FUEL Reform Act," July 27, 2017, <https://biggs.house.gov/media/press-releases/congressman-andy-biggs-introduces-fuel-reform-act> (accessed September 18, 2017).

2. The federal government defines renewable chemical as a "monomer, polymer, plastic, formulated product, or chemical substance produced from Renewable Biomass." See *Federal Register*, Vol. 80, No. 121 (June 24, 2015), pp. 36410-36455, <https://www.gpo.gov/fdsys/pkg/FR-2015-06-24/pdf/2015-14989.pdf> (accessed September 18, 2017).

3. U.S. Department of Agriculture Rural Development, "Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program," <https://www.rd.usda.gov/programs-services/biorefinery-renewable-chemical-and-biobased-product-manufacturing-assistance> (accessed September 18, 2017).

4. U.S. Department of Agriculture Rural Development, "Fact Sheet: Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program," https://www.rd.usda.gov/files/fact-sheet/RD-FactSheet-RBS_Biorefinery.pdf (accessed September 18, 2017).

TABLE 1

Biofuel Subsidies in the 2014 Farm Bill

Program	Function	Funding in 2014 Farm Bill (FY 2014–FY 2018), in Millions of Dollars	
		Mandatory	Discretionary
TITLE IX PROGRAMS			
Biobased Markets Program	Requirement for federal agencies to develop a bio-product procurement program, additionally requires contractors to use biobased products on purchases over \$10,000	\$15	\$10
Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program	Loan guarantees for biorefinery construction to convert to biomass to advanced biofuels	\$200	\$375
Repowering Assistance Program	Payments to eligible biorefineries for use of biomass to operate refinery	\$12	\$50
Biorefinery Program for Advanced Biofuels	Contracts and payments from USDA to advanced biofuel producers for annual increases in production	\$75	\$100
Biodiesel Fuel Education Program	Grants to educate the public and governments on the benefits of biodiesel	\$5	\$5
Rural Energy for America Program	Grants and loan guarantees for development and construction of renewable energy systems, including bioenergy systems, in rural communities	\$250	\$100
Biomass Research and Development Initiative	Grants, contracts, and financial aid for research, development, and demonstrations of technologies and processes that lead toward commercializing biofuels, feedstocks, and biobased products	\$12	\$100
Feedstock Flexibility Program for Bioenergy Producers	Program in coordination with the Commodity Credit Corporation that allows the USDA to buy surplus sugar and resell at subsidized rates to bioenergy producers	Such sums as necessary	
Biomass Crop Assistance Program	Matching funds and annual payments to farmers and foresters who want to harvest and deliver biomass feedstocks	\$120	\$0
Community Wood Energy Program	Grants to state and local governments and “biomass consumer cooperatives” for biomass heating systems	\$25	\$0
TITLE IX TOTALS		\$694	\$765
TITLE VII PROGRAMS			
Sun Grant Program	Grants to universities to research and advance biobased energy technology and other applications within the economy	\$0	\$75 (annually)

SOURCE: Randy Schnepf, “Energy Provisions in the 2014 Farm Bill (P.L. 113-79),” Congressional Research Service *Report for Congress*, March 12, 2014, <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43416.pdf> (accessed July 22, 2016).

one company in August 2012 but officially awarded the loan in September 2014.⁵

The USDA has a mixed record with these loan guarantees. Some companies have made good and others have gone bankrupt, losing taxpayer money in the process. In other instances, the USDA offered conditional loan guarantees to numerous companies but never distributed the money. Some recipients have failed financially while others have switched to selling a different product. Other projects receiving government support simply do not exist and bizarrely have no mention on the company's website. Below is a short description of the companies to whom the USDA either distributed money or offered conditional loan guarantees that should raise red flags for Congress.

■ **Coskata.** Coskata received the maximum \$250 million loan guarantee, as well as backing from General Motors and billionaire venture capitalist Vinod Khosla. In 2008, Coskata said that it could produce biofuels for less than \$1 per gallon using cornhusks, wood chips, and municipal trash.⁶ Per Coskata's vice president of development, "It's not five years away, it's not 10 years away. It's affordable, and it's now."⁷

In 2010, the *MIT Technology Review* named Coskata one of the top 50 most innovative companies, with likelihood of success being one of the factors considered.⁸

Unable to produce commercial volumes of biofuels, Coskata switched to using natural gas in 2012, only a year after the USDA awarded the loan guarantee. Coskata then went out of business, only to have its technology re-emerge as Synata Bio in 2016.⁹

■ **ZeaChem Boardman Biorefinery.** Valero, with assets valued at \$38 billion, is an investor in ZeaChem.¹⁰ Despite this major private investment, ZeaChem was the recipient of a \$40 million USDA grant,¹¹ a \$25 million DOE stimulus grant,¹² and a state targeted tax credit.¹³ The USDA also awarded ZeaChem a \$232.5 million conditional loan guarantee in January 2012.¹⁴ Later that year, the company finished a 250,000 gallon per year demonstration plant with ultimate plans to scale up to a 25 million gallon per year refinery. Despite generous taxpayer support, ZeaChem had to lay off employees and halt production in 2013.¹⁵ The company says it is actively working on its first commercial project, but has not issued a press

5. Jim Lane, "US Navy, DOE, USDA Award \$210 Million to Three Companies for Drop-in Biofuels," *Renewable Energy World*, September 19, 2014, <http://www.renewableenergyworld.com/articles/2014/09/us-navy-doe-usda-award-210-million-to-three-companies-for-drop-in-biofuels.html> (accessed September 18, 2017).
6. Chuck Squatriglia, "Startup Says It Can Make Ethanol for \$1 a Gallon, and Without Corn," *Wired*, January 24, 2008, <https://www.wired.com/2008/01/startup-says-it-can-make-ethanol-for-1-a-gallon-and-without-corn/> (accessed September 18, 2017).
7. Ibid.
8. News release, "GM Partner Coskata Named Top Innovative Company by MIT," GM Corporate Newsroom, February 25, 2010, http://media.gm.com/media/us/en/gm/home.detail.html/content/Pages/news/us/en/2010/Feb/0225_coskata.html (accessed September 18, 2017).
9. Jim Lane, "Coscata's Technology Re-Emerges as Synata Bio," *Biofuels Digest*, January 24, 2016, <http://www.biofuelsdigest.com/bdigest/2016/01/24/coskatas-technology-re-emerges-as-synata-bio/> (accessed September 18, 2017).
10. ZeaChem, "Investors," <http://www.zeachem.com/investors/> (accessed September 18, 2017).
11. News release, "ZeaChem and Partners Awarded \$40 Million USDA Grant," ZeaChem, September 28, 2011, <http://www.zeachem.com/press-releases/2015/4/20/zeachem-and-partners-awarded-40-million-usda-grant> (accessed September 18, 2017).
12. News release, "U.S. DOE Selects ZeaChem for \$25 Million Grant," ZeaChem, December 4, 2009, <http://www.zeachem.com/press-releases/2015/4/20/us-doe-selects-zeachem-for-25-million-grant> (accessed September 18, 2017).
13. Hillary Borrud, "Clean Fuels Law Brings Ethanol to Oregon—But Mostly from the Midwest," *The Oregonian*, August 13, 2016, http://www.oregonlive.com/politics/index.ssf/2016/08/clean_fuels_law_brings_ethanol.html (accessed September 18, 2017).
14. News release, "Agriculture Secretary Vilsack Announces Support for a New Advanced Biofuel Production Facility in Oregon," U.S. Department of Agriculture, Office of Communications, January 26, 2012, <https://www.usda.gov/media/press-releases/2012/01/26/agriculture-secretary-vilsack-announces-support-new-advanced> (accessed September 18, 2017).
15. Courtney Flatt, "Biorefinery Lays Off E. Oregon Workers," Oregon Public Broadcasting, April 1, 2013, <http://www.opb.org/news/article/biorefinery-lays-off-e-oregon-workers/> (accessed September 18, 2017).

release since 2015, and that release had nothing to do with commercial biorefining.

- **Fulcrum Sierra BioFuels, LLC.** Fulcrum Sierra, which converts municipal waste into biofuel for jets, received a loan guarantee of \$105 million in September 2014 after the USDA announced the conditional loan in August 2012. Fulcrum has a guaranteed customer to produce “drop-in”¹⁶ biofuels for the Navy.¹⁷ The company has received investments from BP and United Airlines and awarded contracts to Abengoa. Abengoa has also struggled financially and was the recipient of several DOE loan guarantees and other government handouts.¹⁸ Biofuels for the Department of Defense (DOD) have been costly and have failed to increase mission capabilities and readiness, but the federal government continues to promote their use.¹⁹
- **Chemtex International, Inc.** Chemtex is a global engineering and technology firm that works with polyester, polymer fibers, chemicals, liquefied natural gas, and other energy and environment products. The USDA approved a \$99 million loan guarantee for Chemtex in 2012 to build a biofuel refinery, covering 80 percent of the project’s costs.²⁰ It is unclear if Chemtex actually received

the loan, but the company did receive \$3.9 million through another energy program in the farm bill, the Biomass Crop Assistance Program, as well as state grants and tax credits.²¹ The city of Clinton, North Carolina, the location of the proposed plant, spent \$1.76 million in federal funds from the U.S. Economic Development Administration on necessary support infrastructure such as water and sewage.²² Despite the conditional loan guarantee announcement in 2012, Chemtex has yet to begin construction on the biofuel refinery.

- **Cool Planet.** In October 2014, the USDA awarded a \$91 million loan guarantee to Cool Planet for an advanced biofuel project in Louisiana.²³ The USDA announced that “Cool Planet has attracted private investments from numerous companies, including Google Ventures, BP, ConocoPhillips, GE, Exelon and NRG Energy.”²⁴ These companies would have no trouble financing a project without government-backed loans if they believe Cool Planet’s biofuel plant is worth the investment. The loan guarantee reduces the risk and companies hedge their bets on the backs of the taxpayer. Although Cool Planet broke ground on the biofuel plant in 2014, the project stalled because of weak market demand. The company reportedly hopes to begin producing in 2018.²⁵

16. Drop-in biofuels are biofuels that can be used in vehicles and jets without changing the engine, tank, or fueling infrastructure.

17. Timothy Cama, “Feds Invest in Biofuels for the Navy,” *The Hill*, September 19, 2014, <http://thehill.com/policy/energy-environment/218331-feds-award-210-million-for-navy-biofuel-contracts> (accessed September 18, 2017).

18. For investor announcements, see news releases, Fulcrum Bioenergy, <http://fulcrum-bioenergy.com/news/> (accessed September 18, 2017), and Tom Corrigan, “U.S. Objects to Abengoa Bankruptcy-Exit Plan,” *The Wall Street Journal*, December 1, 2016, <https://www.wsj.com/articles/u-s-objects-to-abengoa-bankruptcy-exit-plan-1480630625> (accessed September 18, 2017).

19. Katie Tubb and Rachel Zissimos, “The New Administration’s Policy Should Reflect that Biofuels Cannot Meet Military Needs,” Heritage Foundation *Issue Brief* No. 4643, January 4, 2017, <http://www.heritage.org/defense/report/the-new-administrations-policy-should-reflect-biofuels-cannot-meet-military-needs>.

20. News release, “USDA Guarantees Loan to Support Development of Advanced Biofuels Production from Energy Grasses,” U.S. Department of Agriculture, Office of Communications, August 22, 2012, <https://www.usda.gov/media/press-releases/2012/08/22/usda-guarantees-loan-support-development-advanced-biofuels> (accessed September 18, 2017).

21. Chris Berendt, “Chemtex Coming Soon: Plant Set for Construction in 2017,” *The Sampson Independent*, July 13, 2016, <http://www.clintonnc.com/news/11256/chemtex-coming-soon> (accessed September 18, 2017).

22. Chris Berendt, “City OKs Spending Chemtex Grant Money,” *The Sampson Independent*, December 2, 2015, <http://www.clintonnc.com/news/5510/city-oks-spending-chemtex-grant-money> (accessed September 18, 2017).

23. News release, “USDA Guarantees \$91 Million Investment in Innovative Louisiana Biofuel Plant,” U.S. Department of Agriculture, Office of Communications, October 3, 2014, <https://www.usda.gov/media/press-releases/2014/10/03/usda-guarantees-91-million-investment-innovative-louisiana-biofuel> (accessed September 18, 2017).

24. *Ibid.*

25. Jeff Mathews, “Unfulfilled Promise? Economic Projects Hit Snags,” *The Town Talk*, April 8, 2017, <http://www.thetowntalk.com/story/news/2017/04/08/unfulfilled-promise-economic-projects-hit-snags/100019802/> (accessed September 18, 2017).

■ **Range Fuels.** Wood-to-ethanol producer Range Fuels received a \$76 million loan guarantee from the DOE in 2007, an \$80 million loan guarantee from the USDA in 2010, and \$6.2 million in grants from the state of Georgia. The company, which broke ground in 2007 on its cellulosic plant, closed in 2011, with federal taxpayers losing more than \$75 million from the DOE and USDA loans.²⁶ *The Atlanta Journal Constitution* details how repeated warnings from USDA experts went ignored and the financial health of the company did not meet the USDA's lending requirements.²⁷ One now-retired senior economist with the USDA remarked, "Nobody ever expected them to produce anything. I told them not to finance it. They didn't listen to me. They decided to rush, rush, rush and give them the money."²⁸ Even when the writing was on the wall for viability of Range Fuels, the USDA forged ahead with careless use of the taxpayers' money.

■ **Enerkem.** The USDA approved the Canadian company Enerkem for a \$50 million stimulus grant from the DOE in 2009 and another conditional approval for an \$80 million loan from the USDA in January 2011 to build a waste-to-biofuels biorefinery in Pontotoc, Mississippi. In March 2011, President Obama remarked,

Over the next two years, we'll help entrepreneurs break ground for four next-generation biorefineries—each with a capacity of more than 20 million gallons per year. And going forward, we should look for ways to reform biofuels incentives to make sure

they're meeting today's challenges and that they're also saving taxpayers money.²⁹

More than six years later, it is difficult to assess where the project stands or if it will ever be built. A search on the company's website reveals no information about the project. In response to a media inquiry, the company's vice president of government affairs and communications stated,

Enerkem is currently primarily focusing its efforts on its waste-to-chemicals and biofuels facility in Edmonton, Canada. In parallel, the company is developing several projects in Canada, the U.S. and abroad based on its standard plant design. The Pontotoc project is part of our pipeline of projects in the U.S. We intend to leverage the experience gained with our Edmonton plant for our projects in the U.S. At this stage, we are not in a position to give more details about the project.³⁰

Enerkem has not used the USDA loan but is looking to expand operations in Canada and the U.S.

■ **INEOS New Planet Energy, LLC.** INEOS is a private, multinational company with sales of \$40 billion and a profit of \$5.05 billion in 2016.³¹ Despite its financial success, INEOS New Planet Bioenergy received a \$75 million loan commitment from the USDA in 2011 to make cellulosic ethanol from yard clippings, vegetable waste, wood, and municipal solid waste in Vero Beach, Florida.³² The DOE also provided \$50 million

26. Dan Chapman, "Warnings Ignored in Range Fuels Debacle," *The Atlantic Journal Constitution*, September 2, 2012, <http://www.ajc.com/business/warnings-ignored-range-fuels-debacle/OGq6tJq3lEFyXnZtFHZaO/> (accessed September 18, 2017).

27. Ibid.

28. Ibid.

29. President Barack Obama, "Remarks by the President on America's Energy Security," Georgetown University, Washington, DC, March 30, 2011, <https://obamawhitehouse.archives.gov/realitycheck/the-press-office/2011/03/30/remarks-president-americas-energy-security> (accessed September 18, 2017).

30. Dennis Seid, "Enerkem's Ethanol Plant Still a No-Go," *The Daily Journal*, March 29, 2015, http://www.djournal.com/news/business/dennis-seid-enerkem-s-ethanol-plant-still-a-no-go/article_72990f92-b3a2-5089-bb16-d930c639230f.html (accessed September 19, 2017).

31. INEOS, "Our Profile," <https://www.ineos.com/company/> (accessed September 18, 2017), and news release, "INEOS Achieves Record Profitability with 4.3 Billion Euros of EBITDA," INEOS, February 17, 2017, <https://www.ineos.com/news/ineos-group/ineos-achieves-record-profitability/> (accessed September 18, 2017).

32. News release, "INEOS Bio JV Receives Commitment for \$75 Million USDA Loan Guarantee," INEOS, January 5, 2011, <https://www.ineos.com/news/ineos-group/ineos-bio-jv-receives-commitment-for-75-million-usda-loan-guarantee/> (accessed September 18, 2017).

in stimulus money for the project.³³ With state subsidies, the taxpayer burden for the project totaled \$129 million.³⁴ INEOS and the USDA alike hailed the plant as the first of its kind and the breakthrough that would spur hundreds of millions of cellulosic biofuel production. However, the plant produced little ethanol in 2013 and has idled ever since—despite claims the facility was allegedly operational in 2012.³⁵ INEOS closed the plant in September 2016 and exited from the ethanol business, stating that such activity no longer aligned with the company's strategic objectives.³⁶

- **Sapphire Energy, Inc.** California-based Sapphire Energy received a \$50 million stimulus grant in 2009 and a \$54.5 million loan guarantee, finalized by the USDA in 2011. Sapphire Energy produced a renewable crude oil, effectively converting algae into a fuel that has the same properties as crude oil. Sapphire paid back the USDA loan in 2013, announcing the company expected to produce 100 barrels of renewable crude oil in 2015, ramping up to commercial scale in 2015.³⁷ In April 2017, *Algae World News* reported, “Since [the] beginning of this year, Sapphire Energy no longer exists. It was bought by a farmer for pennies on the dollar. There was an announcement on [the] Sapphire Energy website but the new owner took it down. Nothing to do with biofuels anymore, only farming.”³⁸ Brittany Meiling, with the *San Diego Business Journal*, revealed that the

company shifted from renewable fuel to vitamin supplements. The pivot dates back to 2014, when new CEO James Levine said, “I was tasked with looking for non-biofuels applications for the technology. I was not optimistic about biofuel, and wanted to diversify.”³⁹

- **Fiberight.** Fiberight landed a \$25 million USDA conditional loan in 2012, along with a \$2.9 million grant from the Iowa Power Fund, to build a biorefinery in Blairstown, Iowa.⁴⁰ The company bought a shuttered first-generation ethanol plant with the intent to retrofit the facility into a trash-to-ethanol biorefinery. In 2014, the Environmental Protection Agency announced compressed and liquefied biogas qualified as an advanced fuel, which meant that it qualified as an acceptable cellulosic fuel for the Renewable Fuel Standard. Consequently, in April 2015, the company switched focus away from advanced ethanol to a biogas facility in Marion, Iowa. At the time, CEO Craig Stuart-Paul said, “We’re not abandoning it (ethanol or the Blairstown plant.) We’re deferring it.”⁴¹
- **SoyMor Biodiesel, LLC.** Minnesota cooperative SoyMor received a \$25 million USDA loan guarantee in 2009 to convert a soybean oil biodiesel plant into a plant that processed other feedstocks, such as corn oil waste products. SoyMor opened in 2005, suspended operations in 2008 due to high feedstock costs, and Renew-

33. Ibid.

34. Lucas Daprile, “Investigation: INEOS Failed Despite \$129 Million in Taxpayer Subsidies,” *TCPalm*, January 17, 2017, <http://www.tcpalm.com/story/news/2017/01/17/ineos-closes-vero-beach-biofuel-plant/96412616/> (accessed September 18, 2017).

35. Erin Voegele, “INEOS Bio to Sell Ethanol Business, Including Vero Beach Plant,” *Biomass Magazine*, September 7, 2016, <http://biomassmagazine.com/articles/13662/ineos-bio-to-sell-ethanol-business-including-vero-beach-plant> (accessed September 18, 2017).

36. Ibid.

37. Sapphire Energy Inc., “Sapphire Energy Pays Off USDA Loan Guarantee,” *Biomass Magazine*, July 30, 2013, <http://biomassmagazine.com/articles/9273/> (accessed September 18, 2017).

38. “What Happened to Sapphire Energy?” *Algae World News*, April 19, 2017, <http://news.algaeworld.org/2017/04/happened-sapphire-energy/> (accessed September 19, 2017).

39. Brittany Meiling, “Algae Appetite: Sapphire Pivots from Biofuels to Supplements,” *San Diego Business Journal*, May 12, 2016, <http://sdbj.com/news/2016/may/12/appetite-algae/> (accessed September 18, 2017).

40. News release, “Agriculture Secretary Vilsack Announces Support for a New Advanced Biofuel Production Facility,” U.S. Department of Agriculture, and Rick Smith, “Upbeat Update on Waste-to-Energy Plan Is Music to Marion’s Ears,” *The Gazette*, March 12, 2014, <http://www.thegazette.com/2014/03/12/upbeat-update-on-waste-to-energy-plan-is-music-to-marions-ears> (accessed September 18, 2017).

41. Rick Smith, “Trash-to-Biofuel Takes New Turn in Marion,” *The Gazette*, April 16, 2015, <http://www.thegazette.com/subject/news/trash-to-biofuel-takes-new-turn-in-marion-20150416> (accessed September 18, 2017).

able Energy Group purchased SoyMor's assets in 2011.⁴²

- **Fremont Community Digester (FCD).** FCD received a \$12.825 million USDA loan guarantee in 2011 to convert organic and agricultural wastes to biogas for electricity generation. The plant broke ground in 2011 and NOVI Energy, the project developer, called the taxpayer-backed loan the "linchpin that achieved financial closure" for FCD.⁴³ At the time, Senator Debbie Stabenow (D-MI) was the Chairwoman of the Senate Agriculture Committee and NOVI thanked her for her efforts on the project. At the groundbreaking ceremony, Stabenow remarked, "We need to build our agricultural legacy; we need to bring innovation, support rural quality of life, which is a high priority in the next Farm Bill."⁴⁴

That "legacy" is now one of economic failure. The plant shut down in May 2015 after failing to pay its electric bill, and FCD faced a lawsuit for failing to pay its builder \$5 million.⁴⁵ Generate Capital purchased the facility two years later and it remains to be seen whether the plant will reopen.⁴⁶

- **Biosynthetic Technologies and Novus Energy.** In February 2016, the USDA awarded \$100 million to Biosynthetic Technologies, which has backing from Monsanto, BP, and multinational

conglomerate Sime Darby.⁴⁷ The same month, the USDA supported a Novus Energy biorefinery in Oregon with an \$11 million loan.⁴⁸ In June 2017, the USDA invited Velocys to enter the second phase of the application process in June 2017.⁴⁹

Notwithstanding the problems with these specific projects to which the USDA awarded loans or conditional commitments, spending on specific energy projects is not even a legitimate function of the federal government. Substantial opportunity costs are associated with publicly financing energy companies. Because capital is in limited supply, a private dollar invested in a government-backed project will not be available for another project. Whether these projects are profitable or go bankrupt, the USDA should not be in the business of distorting capital markets by gambling with taxpayers' money.

BioPreferred. Created in 2002 and expanded in subsequent farm bills, BioPreferred creates a guaranteed market for a wide range of products by using obligatory purchasing requirements for federal agencies and federal government contractors.⁵⁰ The program aims to create a new market for agricultural products and reduce America's dependence on petroleum. Qualified products must meet a minimum biobased threshold, meaning a certain percentage must come from plants or other agricultural, forestry, or marine materials.⁵¹

42. News release, "REG Finalizes Asset Purchase of 30 mmgy Biodiesel Facility in Albert Lea, Minn.," Renewable Energy Group, July 12, 2011, <https://www.sec.gov/Archives/edgar/data/1463258/000119312511188217/dex991.htm> (accessed September 18, 2017).

43. News release, "Fremont Community Digester Project Breaks Ground," Novi Energy, July 6, 2011, <http://www.novienergy.com/fremont-community-digester-project-breaks-ground/> (accessed September 18, 2017).

44. Ibid.

45. Ken Kolker, "Fremont Food Waste-to-Energy Plant Closes," WoodTV, May 18, 2015, <http://woodtv.com/2015/05/18/fremont-food-waste-to-energy-plant-closes/> (accessed September 18, 2017), and Ken Kolker, "Suit: Food Waste-to-Energy Plant Owes \$5M," WoodTV, May 19, 2015, <http://woodtv.com/2015/05/19/suit-food-waste-to-energy-plant-owes-builder-5m/> (accessed September 18, 2017).

46. Andy Balaskovitz, "California Firm Buys, Plans to Reopen Fremont Bioenergy Facility," MiBiz, May 14, 2017, <https://mibiz.com/item/24794-california-firm-buys-plans-to-reopen-fremont-bioenergy-facility> (accessed September 18, 2017).

47. News release, "USDA Reserves Over \$100 Million in Loan Guarantee Funding for Biosynthetic Technologies," Biosynthetic Technologies, February 1, 2016, <http://biosynthetic.com/wp-content/uploads/Biosynthetic-Tech.-9003-press-release-1-29-16.pdf> (accessed September 18, 2017).

48. News release, "USDA to Help Finance New Farm Waste Biorefinery in Oregon," U.S. Department of Agriculture, Office of Communications, February 26, 2016, <https://www.rd.usda.gov/newsroom/news-release/usda-help-finance-new-farm-waste-biorefinery-oregon> (accessed September 18, 2017).

49. News release, "Advancing towards U.S. Dept. of Agriculture Loan Guarantee," Velocys, June 19, 2017, <http://www.velocys.com/press/nr/nr170619.php> (accessed September 18, 2017).

50. U.S. Department of Agriculture, "What is BioPreferred? About the BioPreferred Program," <https://www.biopreferred.gov/BioPreferred/faces/pages/AboutBioPreferred.xhtml> (accessed September 18, 2017).

51. U.S. Department of Agriculture, "BioPreferred: Certification Criteria," <https://www.biopreferred.gov/BioPreferred/faces/pages/CertificationCriteria.xhtml> (accessed September 18, 2017).

The USDA lists 97 product categories that qualify for BioPreferred, including the following:

- Baby products;
- Disposable cutlery;
- Lubricants;
- Office supplies;
- Personal care products (including massage oils and aromatherapy products); and
- Soaps.

The program also has a voluntary labeling program to inform consumers of the percentages of bio-based content of the product and the packaging. More than 1,600 companies from 37 different countries have taken advantage of the federal purchasing requirement, including many small businesses. However, many larger companies take advantage of BioPreferred, too, including Ace Hardware, Burt's Bees, Coca-Cola, Costco, Kmart, and Walgreens.

Federal agencies and contractors should purchase products based on price, quality, and demand, not to meet an arbitrary objective. If market forces result in the creation of superior products, bio-based products will not need a program requiring their purchase. Furthermore, the goal of reducing dependence on oil is nebulous and subjective. Because oil is abundant and affordable, it is a staple for many products that improve both the quality of life and environmental well-being. Policies that aim to reduce dependence on foreign oil by propping up uncompetitive products impose costs on taxpayers and consumers.

Bio-based products also have an environmental footprint. Government policies that encourage bio-based products could create adverse environmental consequences such as the increased use of fertilizers, land-use conversion from grassland to crops, and

soil erosion, sedimentation, and nitrogen and phosphorous runoff into lakes and streams. These environmental costs are not a reason to eliminate the use of bio-based products but should invoke a recognition that so-called green products also have environmental consequences.

Repowering Assistance Program. The Repowering Assistance Program provides money for companies to power their biorefineries with renewable biomass, rather than with conventional fuels. The USDA's Rural Development office reimburses 50 percent of a project's costs to generate electricity for a biorefinery with sources like wood chips. Companies can use the money for purchasing and installing equipment or even paying for the design, site plans, and permitting.⁵² The 2008 farm bill offered \$35 million over 5 years for this program, but only allocated \$6.9 million due to lack of interest. In fact, both the Senate and House Agriculture Committees voted to eliminate the program in 2012, but the 2014 farm bill provided another \$12 million in mandatory spending and \$50 million in discretionary spending. However, the USDA's website says the program is currently closed.

If biorefineries save money on operational costs by using wood chips and other bioenergy sources, they will purchase them with their own money. However, when the federal government subsidizes bioenergy, these products become dependent upon the preferential treatment from the government. Subsidies reduce the incentive for companies to innovate and compete in the market without the public money.

Advanced Biofuel Payment Program. The Bioenergy Program for Advanced Biofuels (BPAB) provides quarterly or annual payments to companies producing advanced biofuels. The expenditures range from \$500 to \$17 million.⁵³ The latest farm bill allocated \$75 million in mandatory spending for BPAB and another \$100 million in discretionary funding. In total, the program has spent more than \$275 million from 2009–2016.

BPAB is a clear example of corporate welfare as multi-million-dollar payments have been allocated to large agribusinesses like Louis Dreyfus Compa-

52. U.S. Department of Agriculture Rural Development, "Repowering Assistance Program," <https://www.rd.usda.gov/programs-services/repowering-assistance-program> (accessed September 18, 2017).

53. U.S. Department of Agriculture Rural Development, "Advanced Biofuel Payment Program," https://www.rd.usda.gov/files/RD_AdvBiofuelsChart_2016.pdf (accessed September 18, 2017), and Taxpayers for Common Sense, "Fact Sheet: Bioenergy Program for Advanced Biofuels," July 6, 2017, <http://www.taxpayer.net/library/article/bioenergy-program-for-advanced-biofuels-fact-sheet> (accessed September 18, 2017).

ny (\$55.7 billion in revenue in 2015), Archer Daniels Midland (\$62.4 billion in revenue in 2016), and Cargill (\$109.6 billion in revenue in 2017).⁵⁴ As Taxpayers for Common Sense details, the USDA awarded more than half of BPAB funding to facilities that had nothing to do with the production of advanced biofuels, even though the program's intentions are to encourage the production of advanced biofuels.⁵⁵ Recipients of BPAB funding also propped up the Renewable Fuel Standard, which effectively provides a guaranteed customer for these subsidized companies.

Biomass Crop Assistance Program (BCAP).

Set forth in the 2008 farm bill, the BCAP provides grants in the form of matching payments or annual payments to farmers and foresters who harvest and transport biomass feedstock. Eligible materials include agriculture or crop residues like orchard waste or woody forest residue removed that is not part of an existing market for purchase.⁵⁶ The 2014 farm bill funded the BCAP for \$120 million in mandatory spending over 5 years.

In the 2008 bill, the USDA effectively had a blank check of unlimited spending for fiscal years 2008–2012. The BCAP was initially fraught with problems and few restrictions on eligibility, which created a giant loophole by inviting large businesses like paper, pulp, loggers, and truckers to take advantage of the program. As the Institute for Policy Studies noted in 2010, “Most of these companies, which include Weyerhaeuser, Georgia-Pacific, and International Paper, aren’t buying or producing any new biomass, nor are they producing any new renewable energy. Instead, they are getting our tax dollars to merely continue their standard operations.”⁵⁷ Initially estimated to cost \$70 million over five years, the BCAP awarded more than half a billion dollars in 2010 alone.⁵⁸

Congress and the USDA have since closed the loophole, but the program still serves as a mechanism to prop up the economically uncompetitive advanced biofuels industry. If crop residues are economically viable, they will not need assistance from the USDA.

Rural Energy for America Program (REAP).

REAP is a subsidy for agricultural producers to build renewable energy or make energy-efficiency improvements. The program provides loans of up to \$25 million or grants of up to \$500,000 for a renewable energy system (like small-scale wind or solar) or up to \$250,000 for energy-efficiency improvements such as installing energy-conserving lighting or windows.⁵⁹ From 2010–2012, the USDA spent more than \$100 million on more than 2,800 projects. Solar and energy-efficiency installments totaled more than 65 percent of the portfolio.⁶⁰ The 2014 farm bill has \$250 million in mandatory spending for REAP and another \$100 million in discretionary spending.

REAP is an unnecessary program. If agricultural producers believe they save money on their energy bills by installing more energy-efficient windows or adding solar panels to their roof, it should not need public finance. Individuals and businesses make energy-efficient investments with their own money on a regular basis because the savings justify the upfront costs. If farmers choose not to purchase the most energy-efficient product, it is not that they are irrational, but simply choose to manage other preferences, budget constraints, and other ignored considerations such as comfort, convenience, and product quality. The federal government should not override those preferences by subsidizing investments with other peoples’ money.

54. Taxpayers for Common Sense, “Fact Sheet: Bioenergy Program for Advanced Biofuels.”

55. *Ibid.*

56. U.S. Department of Agriculture, Farm Service Agency, “Fact Sheet: Biomass Crop Assistance Program for Fiscal Year 2017,” November 2016, https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/2016/bcap_fact_sheet_nov2016.pdf (accessed September 18, 2017).

57. Loni Kemp, “Boondoggle Sidetracks Crops for Renewable Energy,” Institute for Policy Studies, February 1, 2010, https://www.ips-dc.org/boondoggle_sidetracks_crops_for_renewable_energy/ (accessed September 18, 2017).

58. *Ibid.*

59. U.S. Department of Agriculture Rural Development, “Rural Energy for America Program Renewable Energy Systems & Energy Efficiency Improvement Loans & Grants,” <https://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency> (accessed September 18, 2017).

60. Taxpayers for Common Sense, “Fact Sheet: Rural Energy for America Program,” April 2013, http://www.taxpayer.net/images/uploads/downloads/2013_Rural_Energy_for_America_Program_Fact_Sheet_FINAL.pdf (accessed September 18, 2017).

Biomass Research and Development Initiative (BRDI). The BRDI offers contracts, financial aid, and grants to businesses, government research centers, and universities. The funding goes toward research and development (R&D) and demonstration of technologies that lead to the commercialization of biofuels, bio-based chemicals, feedstocks, and other bio-based products. The 2014 farm bill provides \$12 million in mandatory spending over five years and \$100 million in discretionary funding. Bioenergy R&D in the farm bill is in addition to bioenergy funding within the DOE’s Biological and Environmental Research, including four Bioenergy Research Centers that the USDA has also funded.⁶¹

Sun Grant Program. The Sun Grant Program provides grants to universities and federally funded research centers to research and advance biobased energy sources and technologies. The 2008 farm bill established the Sun Grant Initiative and Sun Grant Centers, which are also charged with “reviving America’s farming communities by placing an emphasis on rural economic development through the production of biobased renewable energy feedstocks.”⁶² The latest farm bill provides \$75 million annually in discretionary spending for the Sun Grant Program.

No matter how diligent or transparent an Administration is, federal funding for R&D for specific energy technologies pick winners and losers. Activities with the purpose of commercialization, regardless of where they lie on the technological development spectrum, are not legitimate functions of the federal government. On the other hand, if there are legitimate reasons for the federal government to engage in research chemistry, physics, ecology, biology, and biogeochemistry for national security needs or for basic scientific exploration and discovery, reforming the national labs will serve as a catalyst for innovation.⁶³

Biodiesel Fuel Education Program. Initially implemented as part of the 2002 farm bill, the Biodiesel Fuel Education Program aims to raise awareness of the alleged benefits of biodiesel and stimulate production of biodiesel and supporting infrastructure. The 2014 farm bill, which funds the program with \$1 million per year in addition to \$1 million in discretionary spending, seeks to advance “educational programs which will support advances in infrastructure, technology transfer, fuel quality, fuel safety and increasing feedstock production.”⁶⁴

If biodiesel is a superior product, the federal government does not need a program championing its production and consumption. Soybean growers and biodiesel producers will reap the benefits of capturing a larger market share if it is cost-competitive with petroleum fuel oil. Diesel comprises about 21 percent of the petroleum fuels used by the transportation sector in the United States.⁶⁵ Despite calls by several European nations to phase traditional diesel out, diesel remains a critical fuel for the transportation sector. There is a substantial market opportunity for biodiesel to penetrate that market without a federally funded campaign.

Community Wood Energy Program. The Community Wood Energy Program provides grants of up to \$50,000 to state and local governments that use woody biomass for heating systems in schools, libraries, and other public buildings. State or local governments must match the grant and funds must be spent on smaller energy systems. The energy output cannot exceed 50 million British Thermal Units (BTU) per hour or 2 megawatts. The program, initially funded in the 2008 farm bill, received discretionary funding of \$5 million per year from 2014–2018 but no mandatory funding. In a November 2008 paper advocating for a market-based approach

61. News release, “USDA Announces Investments in Bioenergy Research,” U.S. Department of Agriculture, Office of Communications, January 11, 2013, <https://www.ars.usda.gov/northeast-area/wyndmoor-pa/eastern-regional-research-center/sustainable-biofuels-and-co-products-research/docs/usda-announces-investments-in-bioenergy-research/> (accessed September 18, 2017), and U.S. Department of Energy, “Biological and Environmental Research (BER),” <https://science.energy.gov/ber/> (accessed September 18, 2017).

62. Mark A. McMinimy, “Energy Provisions in the 2014 Farm Bill (P.L. 113-79): Status and Funding,” Congressional Research Service Report for Congress No. R43416, February 22, 2016, <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43416.pdf> (accessed September 18, 2017).

63. Nicolas Loris, “INNOVATES Act Creates a More Effective National Lab System,” Heritage Foundation Issue Brief No. 4141, January 14, 2014, http://thf_media.s3.amazonaws.com/2014/pdf/IB4141.pdf.

64. U.S. Department of Agriculture, National Institute of Food and Agriculture, “Biodiesel Fuel Education,” <https://nifa.usda.gov/funding-opportunity/biodiesel-fuel-education> (accessed September 18, 2017).

65. U.S. Energy Information Administration, “Diesel Fuel Explained,” https://www.eia.gov/energyexplained/index.cfm?page=diesel_use (accessed September 18, 2017).

to community wood energy, The Forest Stewards Guild argued that switching from home heating oil to woody biomass would save schools money, noting that in “the 2007–2008 heating season, Vermont schools using the latest generation of wood-heat systems saved roughly half of what it would have cost to heat with oil, about \$77,500 per school.”⁶⁶

Granted, oil prices in 2007–2008 were much higher than they are today. Nevertheless, lower oil prices will only drive biomass producers to continue to innovate. Market forces and cost-competitiveness should determine woody biomass’s use in state and local public buildings. State and local governments should be good stewards of their respective state’s and community’s taxpayer money and examine alternative energy sources only if they make economic and practical sense.

Feedstock Flexibility for Bioenergy Producers. The Feedstock Flexibility Program for Bioenergy Producers uses the propped up domestic sugar industry to benefit the biofuel sector. In coordination with the Commodity Credit Corporation (CCC), the program empowers the USDA to buy surplus sugar and sell it at a loss to biofuel producers to make ethanol, butanol, and other biofuels. Established in 1933 to stabilize and protect farm income and prices,⁶⁷ the CCC provides subsidized loans to cane sugar refiners and sugar beet processors. The sugar refiners can repay the loans but in times of excess production, the refiners can forfeit that collateral to the USDA to satisfy repayment. The Feedstock Flexibility for Bioenergy Producers requires the USDA to purchase that sugar and sell it at subsidized rates to biofuel producers. The USDA makes quarterly announcements on how much sugar the agency will

buy based on crop production and consumption.⁶⁸ The USDA last made purchases under the program in 2013. The federal government also heavily protects the U.S. sugar industry through marketing allotments that limit how much domestic sugar can be sold and protectionist import restrictions.⁶⁹ In fact, because of volumetric controls, domestic sugar prices are 80 percent higher than the world price.⁷⁰

The Feedstock Flexibility Program for Bioenergy Producers is yet another way to prop up the domestic sugar industry. Congress should jettison the program.

Energy Subsidies in Farm Bill Must Go

Betting on economic losers, encouraging corporate welfare, distorting energy markets, propping up specific energy sources and products, and trying to generate a market when one ceases to exist: These problems run rampant through the energy programs and any single one is sufficient reason to eliminate the energy title in the farm bill. Specifically, the companies receiving loan guarantees or conditional commitments provide telling evidence as to why taxpayers should not shoulder the weight of government “subsidies” for specific energy sources. While the energy title in the farm bill is just one strand in a complex web of energy subsidies, eliminating Title IX of the farm bill and the Sun Grant Program would be a big step in the right direction for energy policy.

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66. Robert T. Perschel, “A Market-Based Approach to Community Wood Energy: An Opportunity for Consulting Foresters,” The Forest Guild, November 2018, https://www.forestguild.org/publications/research/2008/Market_Based_CWEP_Approach.pdf (accessed August, 19, 2017).

67. U.S. Department of Agriculture, Farm Service Agency, “Fact Sheet: Commodity Credit Corporation,” October 2015, https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/AboutFSA/CCC/ccc_fact_sheet.pdf (accessed September 18, 2017).

68. Erin Voegele, “USDA: No Actions Expected Under Feedstock Flexibility Program,” *Ethanol Producer Magazine*, January 5, 2016, <http://ethanolproducer.com/articles/12918/> (accessed September 18, 2017).

69. Mark A. McMinimy, “U.S. Sugar Program Fundamentals,” Congressional Research Service *Report for Congress* No. R43998, April 6, 2016, <https://fas.org/sgp/crs/misc/R43998.pdf> (accessed September 18, 2017).

70. Sweetener Users Association, “Comment on A-201-845 and C-201-846—Amendments to Agreements Suspending the Antidumping and Countervailing Duty Investigations on Sugar from Mexico,” June 21, 2017, https://s3.amazonaws.com/emna-assets/gesab/34202c4501126956b11fa68e53cb1f2e/SUA_Comments-Amendments_to_AD___CVD_Suspension_Agreements__6-21-2017_.pdf (accessed September 18, 2017).