

THE WAIVERING RENEWABLE FUEL STANDARD AND HOW TO FIX IT

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I. INTRODUCTION

In October of 2018, Bruce Buchanan etched a message into 60 acres of corn fields on his farm in Fowler, Indiana. From the air, the message read: “Thanks Mr. Trump for E15.”² An aerial photo capturing the message quickly spread on social media, and the U.S. Agriculture Secretary and the White House Press Secretary eventually shared the photo as well.³ Buchanan and his son created the corn maze message to show gratitude for the President’s decision to lift a ban on the summertime sale of a higher-percentage ethanol blend called E15 in many warmer regions of the country. E15 is a higher-percentage ethanol/gasoline blend containing 15% ethanol.⁴ In the United States, ethanol is produced primarily from corn.

“[W]e know for a fact that, for the ag economy, income is down . . . [but Trump’s E15 decision] is good for corn farmers . . .” Buchanan said in an

2. Amie Simpson, *Indiana Farmer Cuts Thank You Message to Trump in Corn Field* (Oct. 23, 2018), <https://brownfielddagnews.com/news/indiana-farmer-cuts-thank-you-message-to-trump-in-corn-field/>.

3. Sarah Sanders (@PressSec) TWITTER (Oct. 18, 2018, 5:17 PM), <https://twitter.com/PressSec/status/1053077662426718209>.

4. *E15*, ALTERNATIVE FUELS DATA CTR., https://afdc.energy.gov/fuels/ethanol_e15.html (last visited Nov. 22, 2019).

interview about his stunt.⁵ Unfortunately for him and many other farmers, U.S. ethanol policies since that time haven't been as favorable as Buchanan expected. By January 2019, three months after Buchanan had created his celebratory corn maze message, the President signaled he might change his mind about the summer ethanol ban.⁶ Meanwhile, a fresh trade war with China combined with the longest government shutdown in U.S. history hastened the decline of farm income.⁷ And growing pushback from the oil industry had created uncertainty as to whether the Environmental Protection Agency (EPA) would ever actually promulgate the new E15 rule Trump had announced months earlier.⁸

Trump's proposed E15 rule change was certainly not the first federal policy proposal to pit oil interests against the interests of American corn farmers. The petroleum-refining and corn-ethanol industries have continually sparred over the Renewable Fuel Standard (RFS)—a federal mandate requiring refiners to blend ethanol with gasoline—ever since Congress first enacted the standard in 2007.⁹ Trump's 2018 promise of year-round sales of E15 was in direct response to concerns raised by Iowa Senator Chuck Grassley about the EPA's growing practice of liberally waiving oil refiners' compliance under the RFS.¹⁰ During Scott Pruitt's short stint as head of the EPA, the new willingness to frequently grant waivers was so dramatic that it weakened market demand for corn.¹¹ Prior to 2016, when Pruitt took the helm, the EPA had never granted more than 8 waivers in any prior year; after Pruitt's appointment, the Agency granted 35 waivers in 2017 and 31 in

5. Dave Bangert, *Benton Co. Farmers Harvest a 60-acre Thanks to Donald Trump After E15 Decision*, *Brownfield* (Oct. 19, 2018), <https://www.jconline.com/story/opinion/columnists/dave-bangert/2018/10/19/indiana-farmers-cut-60-acre-thanks-donald-trump-after-e-15-decision/1694206002/>.

6. See Mario Parker & Jennifer A Dlouhy, *Farmers Fear Another Hit as Trump Shutdown Threatens Ethanol Vow* (Jan. 4, 2019), <https://www.bloomberg.com/news/articles/2019-01-04/farmers-fear-another-hit-as-trump-shutdown-threatens-ethanol-vow> (noting the President's border-wall holdout delayed the rule change).

7. *Id.*

8. *Id.*

9. See EPA Adds Transparency to Soften Feud Between Oil and Farmers Re Ethanol Mandate (Sept. 25, 2018), <https://www.oilandgas360.com/epa-adds-transparency-to-soften-feud-between-oil-and-farmers-re-ethanol-mandate/> (discussing efforts to reduce controversy surrounding RFS).

10. See Ethan Stotzer, *Senators to Pruitt: Cease Issuing Refinery Waivers* (Apr. 17, 2018), <https://www.insidesources.com/senators-pruitt-cease-rfs-waivers/> (discussing Senators' request to cease issuing waivers); Lisa Friedman, *Trump Will Loosen Ethanol Rules, Aiding Anxious Farmers Ahead of Midterm Elections* (Oct. 8, 2018), <https://www.nytimes.com/2018/10/08/climate/trump-ethanol-farmers-midterm-election.html> ("Steffen Schmidt, a professor of political science at Iowa State University, said he doesn't see Mr. Trump's ethanol announcement as a direct reward for Mr. Grassley's support, but rather as a sign of the mutually beneficial relationship that has emerged between the president and the powerful seven-term senator...[W]hy not do it for the guy who helped keep the pillars from crumbling in the coliseum on the nomination process of the Supreme Court?").

11. Jacqui Fatka, *EPA's RFS Waivers Cut Corn Demand by 900m bu* (Mar. 18, 2019), <https://www.feedstuffs.com/news/epas-rfs-waivers-cut-corn-demand-900m-bu>.

2018.¹² Angry about the impacts of these changes on corn growers in his state, Senator Grassley accused Pruitt of breaking the law and “hiding behind bureaucracy” in the EPA’s granting of waivers.¹³ However, even though Pruitt has since left the EPA, it has continued to grant waivers in a similar fashion.¹⁴

The EPA’s sudden and dramatic increase of RFS waivers has had major impacts on petroleum and corn interests in the United States.¹⁵ Although the language of the RFS requires the EPA to grant compliance waivers only to smaller refiners experiencing economic hardship in compliance, Andeavor, one of the nation’s largest refining companies, has secured several exemptions for its refineries since Trump took office.¹⁶ Andeavor’s waivers marked the first time the EPA had provided this type of “relief” to a large and highly profitable corporation.¹⁷ Andeavor posted \$515 million in profits for just the second quarter of 2018 alone—a 1000% increase from the previous year.¹⁸ Other similarly situated refiners, such as HollyFrontier and CVR Energy, have also received several waivers.¹⁹ These waivers have prompted the National Corn Growers Association, National Farmers Union, Renewable Fuels Association, and American Coalition for Ethanol to file lawsuits against the EPA.²⁰ Meanwhile, the EPA’s interpretation of its waiver authority is arguably undermining its congressional mandate and calling into question whether there remains any functioning RFS standard at all.

The recent controversies surrounding compliance waivers and exemptions under the RFS have prompted a re-examination of the policy, its purposes, and its impacts on the environment, and the broader economy. This

12. *RFS Small Refinery Exemptions*, <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rfs-small-refinery-exemptions> (last visited Nov. 22, 2019).

13. *Grassley Statement on EPA’s Proposed 2019 RFS Biofuels Levels* (June 26, 2018), <https://www.grassley.senate.gov/news/news-releases/grassley-statement-epa-s-proposed-2019-rfs-biofuels-levels>.

14. Rebecca Hersher & Brett Neely, *Scott Pruitt Out at EPA* (July 5, 2018), <https://www.npr.org/2018/07/05/594078923/scott-pruitt-out-at-epa>; see *RFS Small Refinery Exemption*, *supra* note 12 (granting 31 waivers in compliance year 2018).

15. See Jarrett Renshaw & Chris Prentice, *U.S. Ethanol Groups Bristle as EPA Frees Refiners from Biofuels Law* (Apr. 4, 2018), <https://www.reuters.com/article/us-usa-biofuels-epa-refineries/u-s-ethanol-groups-bristle-as-epa-frees-refiners-from-biofuels-law-idUSKCN1HB2AH> (explaining that increase of fuel waivers has “plunged” the price of renewable fuel credits, which refiners may purchase instead of blending fuel with biofuels like corn-based ethanol).

16. *Id.*

17. *Id.*

18. Rye Druzin, *Andeavor Earnings Skyrocket in Second Quarter* (Aug. 6, 2018), <https://www.mysanantonio.com/business/eagle-ford-energy/article/Andeavor-earnings-skyrocket-in-second-quarter-13135971.php>.

19. Chris Prentice & Jarrett Renshaw, *Ethanol, Farm Groups Sue EPA Over Refineries’ Biofuels Exemptions* (May 29, 2018), <https://www.reuters.com/article/us-usa-biofuels-lawsuit/ethanol-farm-groups-sue-epa-over-refineries-biofuels-exemptions-idUSKCN1IV02V>.

20. *Id.*

article highlights recent events surrounding the RFS and proposes strategies for improving the standard to more effectively fulfill its objectives. Among other things, this article advocates for new constraints on the EPA's discretion to waive RFS compliance. This article also advocates for clearer provisions within the RFS promoting greater private investment in other types of renewable transportation energy sources that are more sustainable and environmentally friendly than corn-based ethanol. By integrating the proposed changes into the existing legislation, policymakers could finally equip the RFS to further its important economic, environmental, and security goals.

Part I of this Article provides an overview of the American ethanol industry and the RFS. Part II highlights difficulties the EPA has encountered over the last decade in its efforts to implement the RFS and the alleged abuses of the agency's waiver authority. Part III identifies specific strategies for reforming the RFS so that it better drives the nation's transition to a cleaner and more sustainable domestic fuel system.

II. BACKGROUND

The RFS is a federal policy aimed at reducing the American transportation system's heavy dependence on petroleum for transportation, requiring that a portion of the nation's fuel be derived from renewable energy sources.²¹ In 2018, the United States consumed about 392 million gallons of gasoline per day resulting in 1,142 metric tons of carbon dioxide emissions for the year.²² Burning a single gallon of gasoline, without any ethanol blended in, produces roughly 19.6 pounds of carbon dioxide.²³ Gasoline combustion also produces other harmful emissions that reduce air quality;²⁴ and petroleum is a finite, nonrenewable energy source. Ethanol produced from corn is unquestionably a more renewable and cleaner energy source than petroleum.²⁵ For decades, the U.S. government has cited that distinction to justify providing billions of dollars in subsidies to the nation's corn-based ethanol industry. However, decades of experience have shown that corn-based ethanol is neither as environmentally friendly nor cost effective as the

21. See *Renewable Fuel Standard*, <https://www.epa.gov/renewable-fuel-standard-program> (last updated Mar. 28, 2019) (describing the RFS's purpose).

22. *Gasoline Explained – Gasoline and the Environment* (Oct. 4, 2019), <https://www.eia.gov/energyexplained/gasoline/gasoline-and-the-environment.php>.

23. *Id.*

24. *How Much Carbon Dioxide is Produced from U.S. Gasoline and Diesel Fuel Consumption?*, U.S. ENERGY INFO. ADMIN., (May 15, 2019), <https://www.eia.gov/tools/faqs/faq.php?id=307&t=10>.

25. See U.S. DEP'T OF AGRIC., *LIFE-CYCLE ANALYSIS OF THE GREENHOUSE GAS EMISSIONS OF CORN-BASED ETHANOL 1* (2017) (noting ethanol's GHG emissions are 39% lower than gasoline's).

corn industry has suggested.²⁶ The following materials compare petroleum and corn-based ethanol and highlight how federal laws have impacted the nation's use of these two competing energy strategies.

A. *A Brief History of Ethanol as a Transportation Fuel*

Ethanol is a colorless, flammable liquid distilled from a wide range of organic sources.²⁷ In the United States, ethanol produced for vehicle fuel is primarily derived from corn.²⁸ Although there have been debates for decades over whether ethanol or other biofuels should be used to power our vehicles, ethanol has long been statutorily mandated for that purpose. This flows naturally from its rich and colorful history in the U.S. Ethanol is used in automotive fuels in two ways: to substitute for petroleum entirely or to serve as an octane booster that reduces emissions and increases an engine's power.²⁹

For nearly a century, scientists have been suggesting that ethanol is a better automotive fuel than gasoline.³⁰ In 1925, M.C. Whitaker, a then prominent fuel researcher, stated that "the superiority of alcohol [over pure] gasoline fuels is now safely established."³¹ The current science generally agrees with this past appraisal. If the issues of feedstock monoculture and land use changes could be adequately addressed, ethanol could be a far more environmentally friendly transportation fuel than petroleum.³² Ethanol can be made from almost any biogenic material, including ordinary yard trimmings.³³ Because ethanol is made from plants, a sustainably designed transportation energy system built around ethanol would theoretically slow the greenhouse gas effect.³⁴ In one test comparing a 6% ethanol-fuel blend

26. See C. Ford Runge, *The Case Against More Ethanol: It's Simply Bad for Environment*, YALE ENV'T 360 (May 25, 2016), https://e360.yale.edu/features/the_case_against_ethanol_bad_for_environment (discussing environmental and economic downsides of ethanol).

27. See *Ethanol*, ALTERNATIVE FUELS DATA CTR., <https://afdc.energy.gov/fuels/ethanol.html> (last visited Nov. 23, 2019) (explaining that ethanol is made from corn and other plant materials).

28. *U.S. Fuel Ethanol Production Continues to Grow in 2017*, U.S. ENERGY INFO. ADMIN. (July 21, 2017) <https://www.eia.gov/todayinenergy/detail.php?id=32152>.

29. Bill Kovarik, *Henry Ford, Charles Kettering and the Fuel of the Future*, <http://www.environmentalhistory.org/billkovarik/about-bk/research/henry-ford-charles-kettering-and-the-fuel-of-the-future/> (last visited October 25, 2019) (noting that ethanol can be used as an octane booster and has replaced several other boosters like lead).

30. See *id.* (noting that Henry Ford and Charles Kettering believed ethanol was "the fuel of the future").

31. *Id.*

32. See Jonathan Foley, *It's Time to Rethink America's Corn System* (Mar. 5, 2013), <https://www.scientificamerican.com/article/time-to-rethink-corn/?print=true> (describing a reimagined agricultural system for corn using innovative farming and conservation practices).

33. Kovarik, *supra* note 29.

34. David Blume, *ALCOHOL CAN BE A GAS!: FUELING AN ETHANOL REVOLUTION FOR THE 21ST CENTURY!* 35 (2007).

with a 50% blend, the 50% blend had dramatically lower emission results.³⁵ Switching to pure ethanol over gasoline would result in a significant drop in vehicle tailpipe emissions.³⁶ Pure ethanol fuel has an octane of 100, burns cooler, and deposits less so engines last longer.³⁷ Engines designed to run ethanol also get significantly better miles per gallon with around a 20% increase in MPG.³⁸ The byproducts of ethanol production can be used as fertilizer or as animal feed, decreasing environmental impacts.³⁹

Ethanol feedstock can also be sourced entirely domestically. This benefits American farmers and provides greater energy security for the U.S. than a strategy of relying on solely petroleum for transportation energy.⁴⁰ Ethanol's unique capacity to curb the nation's dependence on oil while simultaneously supporting the grain belt has helped garner political support, even during periods of waning voter interest for other progressive energy strategies.⁴¹ As such, federal ethanol subsidies and other incentives have been mainstays in the U.S. for a long time.

1. Ethanol in America

Ethanol's history as an alternative to petroleum in the U.S. is longer than many might think, easily predating invention of the automobile.⁴² Indeed, prior to the electrification of most of the U.S., millions of Americans used ethanol to light homes and businesses across the country.⁴³ However, a tax on alcohol originally imposed to help cover the costs of the Civil War ultimately led to the decline of the nation's alcohol fuel market, and stoked the growth of the American petroleum industry.⁴⁴ In 1906 the farm lobby,

35. *Id.* at 330-31.

36. See *Biofuels Explained: Ethanol and the Environment*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/energyexplained/index.php?page=biofuel_ethanol_environment (last visited Oct. 18, 2019) (explaining shift to ethanol and impact on tailpipe emissions).

37. *Fuel Ethanol: Hero or Villain?*, PENN STATE EXTENSION, <https://extension.psu.edu/fuel-ethanol-hero-or-villain> (last updated May 8, 2014).

38. Mark Drajem, *Mileage Gains Using Ethanol Seen 20% Higher than EPA Says* (Sept. 6, 2013), <https://www.bloomberg.com/news/articles/2013-09-06/mileage-gains-using-ethanol-seen-20-higher-than-epa-says?cmpid=yahoo>.

39. See *Feed Value of Ethanol By-Products Long Underestimated*, <https://www.farmprogress.com/livestock/feed-value-ethanol-products-long-underestimated> (last visited Nov. 9, 2019) (discussing the use of ethanol byproducts).

40. Jim Talent, *Ethanol's Crucial Role in Protecting the Farm Economy from China* (July 3, 2018), <https://www.governing.com/gov-institute/voices/col-trump-china-ethanol-crucial-role-protecting-farm-economy.html>.

41. See Tristan R. Brown, *Corn Ethanol: The Rise and Fall of a Political Force* (Feb. 2, 2016), <https://theconversation.com/corn-ethanol-the-rise-and-fall-of-a-political-force-54030> (discussing politics of ethanol).

42. See *Biofuels Explained Ethanol*, *supra* note 36 (discussing history of ethanol use).

43. Kovarik, *supra* note 29.

44. Mimi Abebe, *History of Ethanol*, JOURNALISM & MASS COMM.: STUDENT MEDIA, June 2008, at 24, 26.

supported by then-president Theodore Roosevelt, pushed to get the federal alcohol tax repealed, and a new push to make ethanol fuel began anew.⁴⁵ Even Henry Ford was an early proponent of ethanol, and his first vehicle ran on pure ethanol.⁴⁶ Ford was also quoted as saying, “The fuel of the future is going to come from fruit like that sumach (sic) out by the road, or from apples, weeds, sawdust (sic) — almost anything.”⁴⁷ However, such efforts to make ethanol the nation’s fuel of choice ultimately floundered.⁴⁸ By that point, petroleum had already become too well-established to be supplanted by a re-emerging alcohol fuel industry.⁴⁹

From 1919 until 1933, the Prohibition in the U.S. further hampered ethanol’s usage.⁵⁰ Then, at the height of the Great Depression, corn prices drastically dropped.⁵¹ This pushed American farmers to rely on alternative uses for the crop.⁵² Promoting corn-based automobile fuels soon became a primary strategy for farmers, marking the creation of the century-old rivalry between oil interests and corn interests that continues today. Not surprisingly, the dominant oil industry responded to this new competitive threat by quickly and aggressively acting to suppress the rise of ethanol fuels.⁵³

In 1933, the American Petroleum Institute created a “‘coordinated program . . . throughout the industry’ . . . to combat alcohol gasoline blending.”⁵⁴ These oil industry efforts paid off, as the group effectively blocked 19 federal bills and 31 state bills that proposed creating ethanol incentives and blending programs from 1933 to 1939.⁵⁵ Such aggressive oil industry opposition still continues to this day, and the industry is notorious for wielding its gargantuan financial resources to influence American energy policy. One modern example is the industrial support of Jim Inhofe, an Oklahoma senator and key critic of the RFS. Inhofe received \$255,471 in campaign contributions from the oil and gas industries in 2000, and once defended his opposition to ethanol legislation on the grounds that “Refiners

45. *See Ethanol Timeline*, HISTORIC VEHICLE ASS’N (Jan. 19, 2011), <https://www.historicvehicle.org/ethanol-timeline/> (noting that Congress repealed the alcohol tax in 1906).

46. *Id.*

47. Kovarik, *supra* note 29.

48. *See id.* (describing the history of the use ethanol and alcohol-based fuels).

49. *See id.* (noting that support for alcohol-based fuel surged in the early 1900s and again in the 1930s, at which point the oil industry had claimed ethanol was inferior).

50. *See id.* (noting Prohibition’s role in disadvantaging ethanol).

51. Daryll Ray, *How Did Prices Fare Following Other Golden Eras in Agriculture?*, SUCCESSFUL FARMING (Mar. 25, 2015), https://www.agriculture.com/markets/analysis/corn/how-did-prices-fare-following-or-golden_9-ar48090.

52. HAL BERNTON ET AL., *THE FORBIDDEN FUEL: POWER ALCOHOL IN THE TWENTIETH CENTURY* 16-17 (B. Griffin ed. 1982).

53. *See* Kovarik, *supra* note 29 (discussing the oil industry’s response to renewed interest in alcohol).

54. *Id.* (citing to the American Petroleum Institute’s 1933 memo).

55. *Id.*

will have to pay more.”⁵⁶ Over his career, Senator Inhofe has received roughly \$2 million in traceable contributions from oil and gas interests.⁵⁷

During World War II, nearly all industrial alcohol production in the U.S. was allocated to war supplies.⁵⁸ After the war, the ethanol industry was largely dormant for decades.⁵⁹ Then, the Arab Embargo and resulting oil market volatility pushed ethanol back into the spotlight in the 1970s, eventually leading to the current RFS.⁶⁰

2. Ethanol Usage outside the U.S.

Most other developed countries make some limited use of ethanol as a transportation fuel. The U.S. is an outlier in two regards: it produces and consumes a large quantity of ethanol, but due to the tumultuous history of its ethanol industry, ethanol is utilized at sub-optimal levels.⁶¹ As of 1925, every industrialized nation in the world, other than the U.S., was blending ethanol with at least some of its gasoline.⁶² Around that time, France, Germany, Italy, and Brazil instituted mandatory blending programs.⁶³

Brazil has a particularly rich history of ethanol fuel for its automobiles. Because of various petroleum supply issues facing the country, Brazil’s government had begun requiring automakers to sell cars that ran on pure ethanol and shifted a significant proportion of Brazil’s sugarcane crops from food to ethanol stocks.⁶⁴ As a result, Brazil has an unusually robust ethanol fuel market, with 90% of cars on the road in 1988 able to run on pure ethanol.⁶⁵ This shift has allowed Brazilian sugarcane farms to stay in business, despite the global decline in sugarcane’s economic viability as a food crop.⁶⁶ In contrast, sugarcane’s decline has resulted in the disappearance

56. S. REP. NO. 106-426, at 81 (2000); *Sen. James M. Inhofe – Oklahoma*, <https://www.opensecrets.org/members-of-congress/summary?cid=N00005582&cycle=2000> (last visited Nov. 24, 2019).

57. *Sen. James M Inhofe – Oklahoma*, *supra* note 56.

58. Kovarik, *supra* note 29.

59. *See History of Ethanol Production*, N.D. STATE UNIV., <https://www.ag.ndsu.edu/energy/biofuels/energy-briefs/history-of-ethanol-production-and-policy> (“Today’s ethanol industry began in the 1970s.”).

60. *See id.* (noting ethanol industry boomed when gasoline became more expensive in the 1970s).

61. *See RENEWABLE FUELS ASS’N*, 2019 ETHANOL INDUSTRY OUTLOOK 6-7 (2019) (showing the U.S. produces over half of the global ethanol but is not a top ethanol user).

62. Kovarik, *supra* note 29.

63. *Id.*

64. *See Brazil’s Ethanol Industry – Part Two*, IOWA STATE UNIV., <https://www.extension.iastate.edu/agdm/articles/hof/HofFeb09.html> (last visited Nov. 24, 2019) (noting history of Brazil’s ethanol use).

65. *Id.*

66. *See* José Roberto Gomes, *UPDATE1-Brazil Sugarcane Crush Seen Stable Next Season After 2018-19 Dip* (Dec. 20, 2018), <https://www.reuters.com/article/brazil-sugarcane/update-1-brazil-sugarcane-crush-seen-stable-next-season-after-2018-19-dip-idUSL1N1YP17R> (noting demand for sugarcane in Brazil’s ethanol industry).

of sugarcane production in Hawaii.⁶⁷ Brazil's use of sugarcane as its ethanol feedstock is a semi-closed loop, meaning that the byproducts of Brazil's ethanol production are used to power the ethanol refineries and fertilize the cane crops rather than going to waste.⁶⁸ This semi-closed-loop system makes Brazil's ethanol distillation significantly greener than American distillation of corn-based fuel ethanol.⁶⁹ Arguably, Brazil's reliance on ethanol as a primary fuel has benefited Brazilian farmers, stabilized that country's energy supply, and worked better overall as a transportation fuel in that country than has corn-based ethanol in the U.S.

B. The Origins and Intent of the RFS

The current Renewable Fuel Standard (RFS) has its roots in several statutory sources. According to the EPA, which administers the RFS, the standard comes primarily from the Clean Air Act of 1970, 1977, and 1990 (CAA); the Energy Policy Acts of 1992 and 2005 (EP Acts); and the Energy Independence and Security Act of 2007 (EISA).⁷⁰ The declared overarching goals of these statutes have always been related to environmental sustainability, although the factors actually driving the evolution of the RFS have changed over time.⁷¹

Congress enacted the CAA of 1970 in the same year it enacted the National Environmental Protection Act (NEPA) and formed the EPA.⁷² Through these collective actions, Congress combined various departments

67. See Audrey Mcavoy, *AP Explains: Why Hawaii's Sugar Plantations Have Disappeared* (Jan. 7, 2016), <https://www.sandiegouniontribune.com/sdut-ap-explains-why-hawaiis-sugar-plantations-have-2016jan07-story.html> (discussing sugarcane's disappearance in Hawaii).

68. Larry Rohter, *With Big Boost From Sugar Cane, Brazil is Satisfying Its Fuel Needs* (Apr. 10, 2006), <https://www.nytimes.com/2006/04/10/world/americas/10brazil.html?pagewanted=1&sq=Bush%20Brazil%20ethanol&st=nyt&scp=5>.

69. See David Roberts, *What's the Most Energy-Efficient Crop Source for Ethanol?* (Feb. 8, 2006), <https://grist.org/article/biofuel-some-numbers/> (noting Brazil is "in a class all by itself" when it comes to net energy yield since it utilizes waste effectively).

70. *Overview for Renewable Fuel Standard*, <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard> (last updated June 7, 2017); see also *Renewable Fuel Standard Program: Standards for 2019 and Biomass-based Diesel Volume for 2020*, 83 Fed. Reg. 32,024 (proposed Jul. 10, 2018) (summarizing the development of the RFS).

71. *Renewable Fuel Standard Program*, <https://www.epa.gov/renewable-fuel-standard-program> (last updated Mar. 28, 2019); see *Final Renewable Fuel Standards for 2014, 2015, and 2016, and the Biomass-Based Diesel Volume for 2017*, <https://www.epa.gov/renewable-fuel-standard-program/final-renewable-fuel-standards-2014-2015-and-2016-and-biomass-based> (Dec. 11, 2017) (discussing changes to RFS regulations).

72. Robinson Meyer, *How the U.S. Protects the Environment, from Nixon to Trump* (Mar. 29, 2017), <https://www.theatlantic.com/science/archive/2017/03/how-the-epa-and-us-environmental-law-works-a-civics-guide-pruitt-trump/521001/>.

and streamlined the federal administration of environmental regulation.⁷³ The CAA amendments of 1990 included various initiatives aimed at reducing mobile sources of pollution and was followed by similar initiatives in subsequent years.⁷⁴ Among them was the Alternative Motor Fuels Act of 1988 (AMFA), which incentivized automakers to produce motor vehicles capable of using ethanol and was a stepping stone to the EP Acts.⁷⁵ The CAA of 1990 heavily influenced the RFS, creating the Reformulated Gasoline Program, which became the primary forerunner to the current standard.⁷⁶ The program imposed strict guidelines on the formulation of gasoline in urban areas in an effort to reduce the impacts of tailpipe emissions on air quality.⁷⁷ Although the drafters of the Reformulated Gasoline Program had expected ethanol to be the main additive used in compliance, 80% of reformulated fuel at the time used the cheaper methyl-tertiary-butyl-ether (MTBE) instead.⁷⁸ MTBE blending effectively reduced visible air pollution, but also proved to have problematic consequences, as highlighted below.⁷⁹ The CAA of 1990 also included a waiver provision for the blending requirement. The provision allowed the EPA to waive the requirement if it would interfere with other standards, was unworkable in a specific location, or if a location could reduce emissions in a more cost-effective way.⁸⁰ The EPA could also be petitioned to waive the requirement delaying the effective date of the requirement for up to two years if there was inadequate domestic supply.⁸¹ To prevent the abuse of these waivers, Congress acted carefully by clearly defining the conditions for the waivers and their limits in the statutory language.⁸²

73. *Id.*; see also H.R. DOC. NO. 91-366 (responding to a direct request from Richard Nixon, Congress formed the EPA).

74. *Key Federal Legislation*, U.S. DEP'T. OF ENERGY, https://afdc.energy.gov/laws/key_legislation (last visited Nov. 24, 2019).

75. *Id.*

76. See S. REP. NO. 106-246, at 2 (2000) (explaining that the Reformulated Gasoline Program was established to “reduce the growing impact of mobile source emissions on air quality in urban areas.”); *Evolution of the Clean Air Act*, <https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act> (last visited Dec. 19, 2019) (“The legal authority for federal programs regarding air pollution is based on the 1990 Clean Air Act Amendments . . .”). The 1977 and 1990 amendments to the CAA greatly expanded the enforcement power of the EPA and its regulatory scope. See *id.* (describing major amendments added in 1977 and 1990 that “substantially increased the authority and responsibility of the federal government.”).

77. See S. REP. NO. 106-246, at 2, 43 (2000) (explaining that the CAAA was established to reduce mobile source emissions through stricter gasoline standards).

78. *Id.* at 4.

79. See *id.* at 4, 43 (explaining that the blending of oxygenates, including MTBE, into gasoline reduces smog-forming emissions); *id.* at 1 (describing MTBE contamination of more than half of the city of Santa Monica’s water supply); *id.* at 5 (explaining that MTBE moves easily into groundwater reservoirs, and even small amounts are thought to render water supplies undrinkable).

80. H. R. REP. NO. 101-490, at 6 (1990).

81. Clean Air Act Amendments of 1990, 104 Pub. L. No. 101-549, Stat. 2399, 2499 (1990).

82. *Id.*; H.R. REP. NO. 101-490, pt. 1 (1990).

Unlike the CAA and its amendments, which primarily responded to growing popular concerns about smog and acid rain,⁸³ the EP Acts sought to promote greater energy security in the U.S. and to reduce greenhouse gas emissions. A major oil embargo involving Iraq and Kuwait preceding operation Desert Storm led to surging oil prices during the summer of 1990,⁸⁴ which catalyzed the EP Act of 1992: “The purpose of H.R. 776 [was] to enact a comprehensive national energy policy that gradually and steadily increases U.S. energy security in cost-effective and environmentally beneficial ways.”⁸⁵ In his signing statement for the EP Act of 1992, President Bush stated that the chief highlight of the bill was its market-based approach to regulation, declaring that “[g]overnment will serve as a partner of private enterprise, not as its master.”⁸⁶ Most notably, this new legislation seemed to mark a shift in the nation’s primary legislative goals in energy regulation, from mere pollution control toward energy independence.

The EP Act of 2005 is similarly self-described as “an act to ensure jobs for our future with secure, affordable, and reliable energy.”⁸⁷ The EP Acts created the most direct precursor to the current RFS, implementing a national ethanol blending mandate commonly known as RFS1.⁸⁸ The primary impetus of this program was to stop the MTBE blending, which moves easily into groundwater reservoirs. Even small amounts are thought to render water supplies undrinkable⁸⁹ However, the EP Acts’ statutory language creating the Renewable Fuel Program also included provisions allowing oil refiners and gasoline suppliers to seek waivers that excused noncompliance and gave relatively broad discretion to the EPA in granting them.⁹⁰ The driving force behind the inclusion of the waivers appeared to be pressure from the oil

83. *Clean Air Act Requirements and History*, <https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history> (last updated Jan. 10, 2017).

84. David Henderson, *Who Caused the August 1990 Spike in Oil Prices?*, *EconLog* (Jun. 30, 2014), https://www.econlib.org/archives/2014/06/who_caused_the.html.

85. H.R. REP. NO. 102-474, pt. 1, at 132 (1992).

86. Presidential Statement on Signing the Energy Policy Act of 1992, 28 WEEKLY COMP. PRES. DOC. 1780, 2095 (Oct. 24, 1992).

87. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (codified as amended in scattered sections of 42 U.S.C. and 26 U.S.C.)

88. *Id.*

89. S. REP. NO. 106-246, at 5 (2000).

90. *Compare* S. REP. NO. 106-246 (2000) (recommending passage of the Federal Reformulated Fuels Act), *with* Energy Policy Act of 2005, *supra* note 87, at § 1501(o)(7). The first legislative step towards the EP Act of 2005 was the Senate proposed, Federal Reformulated Fuels Act of 2000. This proposal supplanted the mandatory blending of MTBE in fuels, with ethanol. *See* S. REP. NO. 106-246, at 8 (2000) (eliminating use of MTBE in gasoline and giving refiners option to blend ethanol into fuel). The proposed legislation contained a waiver section to the ethanol mandate which stayed largely intact into the final EP Act of 2005. Energy Policy Act of 2005, *supra* note 87, at § 1501(o)(7).

industry, which surely understood that an ethanol-blending requirement could reduce its profits and market power.⁹¹

C. The Energy Independence and Security Act: Cornerstone to the Current RFS

In 2007, Congress finally created the nation's current RFS through changes enacted in the Energy Independence and Security Act (EISA). EISA revamped the Renewable Fuel Program and re-labeled it as a "standard."⁹² The legislative intent of these changes was clear:

To move the United States toward greater energy independence and security, to increase the production of clean renewable fuels, to protect consumers, to increase the efficiency of products, buildings, and vehicles, to promote research on and deploy greenhouse gas capture and storage options, and to improve the energy performance of the Federal Government, and for other purposes.⁹³

Unfortunately, oil industry lobbying significantly shaped the final version of the RFS in ways that continue to limit its effectiveness. President Bush's "Twenty in Ten" initiative drove Congress's enactment of the EISA.⁹⁴ President Bush directly asked Congress to "pursu[e his] goal of reducing U.S. gasoline usage by 20 percent in the next ten years."⁹⁵ The Bush White House stated that a critical element of reaching this goal was "setting a mandatory fuels standard . . . displac[ing] 15 percent of [the] projected annual gasoline use."⁹⁶ The EISA found bipartisan support in both the House and the Senate.⁹⁷ The oil and gas industry, worried by the competitive threat of ethanol and a potential loss of subsidies, contributed \$9.3 million to the House and \$10.28 million to the Senate from 2007 to 2008.⁹⁸ Exxon alone

91. See S. REP. NO. 106-246, at 74 (2000) (stating that the oil industry "warned" senators about ethanol).

92. Energy Independence and Security Act of 2007, Pub. L. No. 110-140, § 202, 121 Stat. 1492, 1521 (renaming the Renewable Fuel Program as the RFS).

93. *Id.* at 1492.

94. See *Twenty in Ten: Strengthening America's Energy Security*, <https://georgewbush-whitehouse.archives.gov/stateoftheunion/2007/initiatives/energy.html> (last visited Oct. 19, 2019) (calling upon "Congress and America's Scientists, Farmers, Industry Leaders, And Entrepreneurs" to assist in this ambitious goal).

95. *Id.*

96. *Id.* (seeking to promote increases in supply by stimulating an increase the quantity demanded through a requirement that 35 billion gallons be used in 2017).

97. LOWELL UNGAR ET AL., AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., BENDING THE CURVE: IMPLEMENTATION OF THE ENERGY INDEPENDENCE AND SECURITY ACT OF 2007 1 (2015).

98. *Oil & Gas: Money to Congress*, CTR. FOR RESPONSIVE POLITICS, <https://www.opensecrets.org/industries/summary.php?ind=E01&recipdetail=A&sortorder=U&mem=Y&cycle=2008> (last visited Oct. 19, 2019).

spent \$16.9 million on lobbying in 2007.⁹⁹ These efforts proved successful, as Congress ultimately failed to repeal the oil subsidies despite that repeal initially being central to the legislation.¹⁰⁰ Red Cavaney, then-President of the American Petroleum Institute, further urged the Senate to increase the EPA's authority to grant waivers and keep the authority vested in the EPA Administrator.¹⁰¹ Congress also delivered on this request in the EISA, both expanding the EPA Administrator's authority to grant waivers and lowering the mandatory fuel volumes in the RFS.¹⁰²

1. RIN Credits and Market Flexibility

To help provide some flexibility in compliance, the RFS legislation establishes a credits system that incentivizes refiners to trade among themselves to reduce aggregate compliance costs.¹⁰³ For every volume of renewable fuel that is created, a unique "renewable identification number" (RIN) accompanies it.¹⁰⁴ The legislation gives the EPA the power to regulate RIN credits. Oil refiners and other obligated parties can comply with the RFS by either buying fuel to blend with their petroleum or by purchasing credits on the open market.¹⁰⁵ As a result, oil refiners that produce pure petroleum products can still comply with the standard by relying on other retailers, who generate credits.¹⁰⁶

99. Ctr. for Responsive Politics, *Industry Profile: Oil & Gas*, <https://www.opensecrets.org/federal-lobbying/industries/summary?cycle=2007&id=e01> (last visited Nov. 8, 2019).

100. See Steven Mufson, *Senate Passes Energy Bill Without House Tax Package* (Dec. 14, 2007), www.washingtonpost.com/wp-dyn/content/article/2007/12/13/AR2007121301847_pf.html (stating tax package that would reduce tax breaks for big oil and gas companies was left out of Senate energy bill).

101. *Biofuels for Energy Security and Transp. Act of 2007: Hearing on S.987 Before the S. Comm. on Energy and Nat. Res.*, 110th Cong. 35-37, (2007).

102. See Energy Independence and Security Act of 2007, Pub. L. No. 110-140, § 202, 121 Stat. 1492, 1521, 1526-27 (allowing the Administrator to reduce the required volume of cellulosic biofuel and biomass-based diesel under specified market conditions). *But see id.* at 1524 ("[T]he applicable volume of advanced biofuel shall be at least the same percentage of the applicable volume of renewable fuel as in calendar year 2022.").

103. Specifically, this language reads: "(E) CREDITS FOR ADDITIONAL RENEWABLE FUEL.—The Administrator may issue regulations providing: (i) for the generation of an appropriate amount of credits by any person that refines, blends, or imports additional renewable fuels specified by the Administrator; and (ii) for the use of such credits by the generator, or the transfer of all or a portion of the credits to another person, for the purpose of complying with paragraph (2)." 42 U.S.C. § 7545(e) (2018).

104. 40 C.F.R. § 80.1401 (2019).

105. *AEC Sends "RIN Credits for Dummies" to Wall Street Journal Editorial Board*, RENEWABLE FUEL ASS'N (Mar. 12, 2013), <https://ethanolrfa.org/2013/03/aec-sends-rin-credits-for-dummies-to-wall-street-journal-editorial-board/>.

106. AM. COAL. FOR ETHANOL, A PRIMER ON RINS AND WHY THE RFS IS WORKING 1-2 (Mar. 13, 2018) (generating blenders offer blends as high as 85% ethanol of E85).

The RFS credits-based system provides significant flexibility and helps to lighten compliance burdens, though these burdens are often overstated.¹⁰⁷ There is little or no evidence that RFS compliance costs have caused major financial harms to any refiners.¹⁰⁸ Moreover, since the standard is imposed relatively uniformly across all parties, it does not create competitive advantages in favor of certain refiners or suppliers.¹⁰⁹ On the whole, the RIN market system under the RFS has been relatively successful at adding market flexibility to compliance, though the need for flexibility in the market is unclear.¹¹⁰

D. Waivers Related to Applicable Volumes

The RFS legislation has multiple provisions authorizing the EPA to issue waivers exempting regulated parties from compliance.¹¹¹ Some of these waiver provisions are specific, temporary, and narrowly tailored.¹¹² Others give the EPA broad discretion to effectively rewrite or ignore the legislated standards of the RFS. The waiver provisions for the RFS are codified in 42 U.S.C. § 7545 and include powers to issue general waivers, fuel-specific waivers, and small refinery waivers.¹¹³

1. The General Waiver

The RFS general waiver provision gives the EPA Administrator expansive discretionary power to waive fuel-blending requirements.¹¹⁴ These powers potentially allow for waivers in whole or in part by petition from a state, person, or by “the Administrator on his own motion.”¹¹⁵ If an independent petition seeks a waiver, the Administrator must consult with the

107. *See id.* at 1 (explaining RNS can be stockpiled for compliance at a later date or sold to other refiners who find it cheaper to purchase RINs than blend ethanol).

108. *See id.* at 4 (“EPA said its review of data on refinery closures from 2013 to 2017, a period of elevated RIN prices, failed to show a threat to merchant refiners.”); *see also Oldest East Coast Refiner Blames RFS for Its Woes*, BLOOMBERG (Jan. 23, 2018), <https://www.agweb.com/article/oldest-east-coast-refiner-blames-rfs-for-its-woes-blmg/> (suggesting removal of U.S. ban on crude oil exports and fundamental business issues caused Philadelphia refiner’s bankruptcy, rather than the RFS).

109. *See* AM. COAL. FOR ETHANOL, *supra* note 106, at 2 (“[B]oth standalone (merchant) refiners and integrated refiners with downstream assets have annual RFS obligations and both recover compliance costs through the market price of petroleum products.”).

110. *See id.* at 1 (“RINS give RFS compliance flexibility to refiners.”).

111. 42 U.S.C. § 7545(o)(7)(A-C) (2018).

112. *See generally* CONG. RESEARCH SERV., R44045, THE RENEWABLE FUEL STANDARD (RFS): WAIVER AUTHORITY AND MODIFICATION OF VOLUMES 5-6 (2019) (noting that there are several types of waivers that can be used).

113. *See* 42 U.S.C. § 7545 (noting that there are multiple types of waivers).

114. *Id.* § 7545(o)(7)(A).

115. *Id.*

Secretaries of Agriculture and Energy for input.¹¹⁶ If the Administrator makes a petition for waiver through his own motion, there must be a finding that enforcement would “severely harm the economy or environment of a State, a region, or the United States” or there is an “inadequate domestic supply” of renewable fuel.¹¹⁷

In 2014, the EPA by its own motion sought to issue a general waiver to reduce the total RFS supply requirements from 18.15 to 15.21 billion gallons of renewable fuel.¹¹⁸ The EPA argued that it was reasonable for it to liberally interpret the term “inadequate supply” to authorize the making of waiver decisions based on consumer demand for fuel, rather than on the supply of renewable fuel available for purchase by obligated parties.¹¹⁹ However, a D.C. Circuit court found this argument unconvincing and ordered the EPA to consider the question based on the amount of renewable fuel physically available to refiners, blenders, and importers in the marketplace.¹²⁰ The court also delineated a non-exhaustive list of legitimate factors for the EPA to consider when determining the availability of fuel.¹²¹ The court excluded any factors focused on “market actors downstream from refiners, importers, and blenders,” such as distribution infrastructure or gas stations that offer blended fuel.¹²²

2. Cellulosic Biofuel and Biomass-Based Diesel Waivers

The RFS also contains special provisions authorizing compliance waivers for its cellulosic biofuel requirements. Specifically, if the “projected volume of cellulosic biofuel production is less than” the minimum requirements of the standard, then the Administrator can waive those requirements.¹²³ Again this waiver gives the EPA administrator significant discretion in the application.

The biomass-based diesel RFS requirements feature a similar waiver provision. If an EPA Administrator determines that there is a “significant renewable feedstock disruption” or “other market circumstances” that would make the price of biomass-based diesel fuel “increase significantly,” then applicable volumes may be waived after consulting with the Secretaries of

116. *Id.* § 7545(o)(7)(B).

117. *Id.* § 7545(o)(7)(A).

118. Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017, 80 Fed. Reg. 77,420, 77,424 (Dec. 14, 2015) (to be codified at 40 C.F.R. pt. 80); *see also* U.S. ENVTL. PROT. AGENCY, EPA PROPOSES 2014 RENEWABLE FUEL STANDARDS, 2015 BIOMASS-BASED DIESEL 2 (2013) (stating the proposed reduced 2014 volume mandates).

119. *Ams. for Clean Energy v. Env'tl. Prot. Agency*, 864 F.3d 691, 711 (D.C. Cir. 2017).

120. *Id.* at 696.

121. *Id.* at 709.

122. *Id.*

123. 42 U.S.C. § 7545(o)(7)(D) (2018).

Energy and Agriculture.¹²⁴ Initially, such a waiver is granted for no more than 60 days.¹²⁵ An extension provision exists if the initial circumstances under which the waiver was granted persist, but it is limited strictly to 120 days.¹²⁶

Presumably, each of these specific waiver provisions were meant to build in flexibility for the development of the fledgling cellulosic and biodiesel industries.¹²⁷ Advancements in the development of these new green industries have been slowed due to the use of this waiver. Because the requirements have been waived each year since 2010, it has created a vicious cycle hampering the development of these fuels.¹²⁸ The goal has not been met, so the standard continues to be waived, meaning the guaranteed market demand for the waived product is weaker and more uncertain. Investors are thus more wary to invest in these industries and access to financing is limited, which makes innovation and market growth even more difficult.

3. The Small Refinery Exemption and Waiver

Recently, alleged abuses of an industry-specific waiver provision in the RFS related to “small refineries” have drawn significant attention.¹²⁹ A “small refinery” is defined in the RFS as a refinery that produces less than 75,000 gallons per day.¹³⁰ The EP Act of 2005 had a blanket exemption for “small refineries” until 2011.¹³¹ After 2011, a small refiner became subject to fuel blending requirements but could petition the Administrator for an extension of the exemption for “a period not less than 2 years.”¹³² To qualify for an exemption, a refiner must show that compliance would “impose a disproportionate economic hardship” on the refinery.¹³³ If a showing is made, the Secretary of Energy must conduct a study on the refiner. The Administrator then considers the findings of that study in conjunction with “other economic factors” to make a decision.¹³⁴

124. *Id.* at (7)(E).

125. *Id.* at (7)(E)(ii).

126. *Id.*

127. KELSI BRACMORT, CONG. RESEARCH SERV., CRS REPORT R44045, THE RENEWABLE FUEL STANDARD (RFS): WAIVER AUTHORITY AND MODIFICATION OF VOLUMES (2018-2019, version 24).

128. *Id.* at 6-7.

129. *See generally* Sinclair Wyo. Ref. Co. v. U.S. Evtl. Prot. Agency, 874 F.3d 1159 (10th Cir. 2017) (finding that the EPA exceeded its statutory authority in applying the “disproportionate economic hardship” exemption to Sinclair’s small refinery waiver petitions); Ergon-W. Va., Inc. v. Evtl. Prot. Agency, 896 F.3d 600 (4th Cir. 2018) (finding that the EPA’s decision to deny the small refinery waiver was arbitrary and capricious because it did not adequately consider the RIN costs to the refinery in making its final determination).

130. 42 U.S.C. § 7545(o)(9).

131. *Id.* § 7545(o)(9)(A)(i).

132. *Id.* § 7545(o)(9).

133. *Id.*

134. *Id.*

There is some evidence that Congress included this exemption in response to a rapid decline of oil refineries, particularly small refiners. From 1982 to 2011, the number of operating refineries in the U.S. decreased from 254 to 137.¹³⁵ However, this trend has not continued in recent years and the refining industry has actually become more profitable. As of January 2018, there were 135 operating refiners in the U.S.¹³⁶ Refiners have consistently increased their aggregate refining volume over that time, and 2018 saw record numbers reaching as high as 18 million barrels/day.¹³⁷ Meanwhile, in 2018, the top five oil refining companies accounted for over half of the total volume representative of industry consolidation.¹³⁸ Researchers have found little evidence that the EPA's environmental or permitting regulations have had any negative effect on the profitability and consolidation of the industry.¹³⁹ Most refineries have continued to increase refining capacity to stay competitive, putting them above the 75,000 barrel per day eligibility requirement, further evidencing the lack of need for this waiver.¹⁴⁰

E. Deficiencies in the Current RFS

In the years since 2016, several vulnerabilities and weakness in the current RFS have grown increasingly apparent. The EPA has interpreted the waiver provisions to afford the EPA very broad discretion that effectively eliminates any predictable, workable standard. Some oil industry stakeholders seem to be exploiting waiver provisions in the RFS in ways that are stifling the advancement of cleaner advanced ethanol technologies. Accordingly, until Congress makes significant changes to the statutory language governing the RFS, it will be unable to drive the type of innovation that the RFS aspires to.

The EPA's controversially broad interpretation of its waiver power is merely the latest in a long string of legal questions related to judicial review

135. Patrick DeHaan, *No New Oil Refineries Since the 1970s, But Capacity Has Grown* (July 29, 2011) <https://www.usnews.com/opinion/blogs/on-energy/2011/07/29/no-new-oil-refineries-since-the-1970s-but-capacity-has-grown>.

136. *When was the Last Refinery Built in the United States*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=29&t=6> (last visited Nov. 8, 2019).

137. *U.S. Refineries Running at Near-Record Highs*, U.S. ENERGY INFO. ADMIN., (Aug. 13, 2018) <https://www.eia.gov/todayinenergy/detail.php?id=36872&src=email>.

138. U.S. ENERGY INFO. ADMIN., REFINERY CAPACITY REPORT, TABLE 5. REFINERS' TOTAL OPERABLE ATMOSPHERIC CRUDE OIL DISTILLATION CAPACITY AS OF JANUARY 1, 2018 (June 25, 2018).

139. ANTHONY ANDREWS ET AL., CONG. RESEARCH SERV., R43682, SMALL REFINERIES AND OIL FIELD PROCESSORS: OPPORTUNITIES AND CHALLENGES (Aug. 11, 2014).

140. *Id.*

of agency actions.¹⁴¹ The foundational case law in this area applies an analysis under the Administrative Procedure Act and *Chevron v. Natural Resources Defense Council*.¹⁴² Under *Chevron*, a reviewing court must consider whether a provision in the text is ambiguous and then determine whether the agency's interpretation is reasonable.¹⁴³ This familiar standard of review, which is relatively deferential to agency determination, has arguably emboldened RFS regulated parties to exploit ambiguities to their own advantage.

In *Americans for Clean Energy v. Env'tl. Prot. Agency*, several interest groups challenged the EPA's Final Rule promulgation for 2015 General Waiver requirements.¹⁴⁴ At issue was the EPA's interpretation of the requirements for the exercise of its authority to generally waive RFS compliance based on a finding of "inadequate domestic supply." The EPA was seeking to soften the RFS requirements by interpreting the term "supply" in the statute to be broad enough to include consumer demand.¹⁴⁵ The court ultimately determined that the term "supply" meant the EPA could only consider "supply-side factors" in determining the use of its waiver authority.

Similar gaps in the applicability of the standard and the EPA's ability to waive its requirements were highlighted in *American Petroleum Institute v. Env'tl. Prot. Agency*.¹⁴⁶ Here, the EPA had issued its waiver for cellulosic biofuel to reduce the applicable volumes based on a determination that "projected volumes" would fall short of the requirements.¹⁴⁷ The court held the EPA's methodology did not take a "neutral aim at accuracy" and was an "unreasonable exercise of agency discretion."¹⁴⁸

Multiple cases have likewise examined the reasonableness of the EPA's discretion in granting or denying small refinery exemptions. The EPA's justification for granting so many of the waivers in 2017 and 2018 was due to several rulings that the EPA's process for finding "disproportionate economic hardship" was arbitrary and capricious. The Tenth and Fourth Circuits did not necessarily indicate the EPA should or should not grant more waivers. Rather, they recognized that the manner for determining whether to

141. Bob Neufeld & Rebecca Lynne Fey, *Winners and Losers: The EPA's Unfair Implementation of Renewable Fuel Standards*, 60 S.D. L. REV. 258, 297–299 (2015).

142. See 5 U.S.C. § 706 (2018) (referring to the Administrative Procedure Act); *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984) (setting forth the deferential test for reviewing agency statutory interpretation, which can yield inconsistent results). *Chevron* deference endangers the efficacy of the standard, by not imposing reasonable constraints on the agency use of their waiver authority.

143. *Chevron, U.S.A., Inc.*, 467 U.S. at 843.

144. *Ams for Clean Energy v. Env'tl. Prot. Agency*, 864 F.3d 691, 696 (D.C. Cir. 2017).

145. *Id.*

146. *Ams Petroleum Inst. v. Env'tl. Prot. Agency*, 706 F.3d 474, 481 (D.C. Cir. 2013).

147. *Id.* at 476.

148. *Id.*

give a waiver had not been reasonable. In *Sinclair v. Envtl. Prot. Agency*, the Fourth Circuit found that requiring “a threat to a refinery’s survival as an ongoing operation” exceeded statutory authority.¹⁴⁹ Both *Sinclair* and *Ergon v. Envtl. Prot. Agency* criticized the EPA’s abuse of discretion and reiterated the need for a more transparent process by which waivers should be granted.¹⁵⁰

Acting head of the EPA, Andrew Wheeler, has justified the agency’s recent liberal granting of RFS waivers, stating:

Part of the original intent of Congress was also to grant the waivers We are taking a look at that issue, but we’re trying to be much more clear and transparent as we grant any small refinery waivers. As you are aware, we have been sued twice on this for not granting enough, and we’ve lost both times.¹⁵¹

Of course, simply granting more waivers doesn’t address the root problem plaguing enforcement of the RFS. The problem arguably centers on the EPA’s seemingly arbitrary approach to determining “economic hardship” or other necessary findings to grant waivers. This arbitrariness creates uncertainty, deters private investment in renewable fuel technologies, and undermines the basic goal of the RFS to promote the long-term sustainability of the nation’s transportation energy system.

III. ANALYSIS OF THE CURRENT RFS

As described above, ambiguous statutory language and overbroad waiver authority interferes with the EPA’s effective enforcement of the RFS in ways that undermines the primary purposes of this important policy. The Trump Administration’s actions have made it increasingly apparent that the RFS will be unable to reliably and efficiently further its purposes until Congress addresses deficiencies in its RFS legislation. Specifically, statutory amendments are needed to better insulate the RFS from industry influence and to ensure that it is enforced more consistently and predictably across presidential administrations. Part III draws from basic microeconomic and public choice theory principles to clarify and shed new light on the problems plaguing the RFS.

149. *Sinclair Wyo. Ref. Co. v. U.S. Envtl. Prot. Agency*, 874 F.3d 1159, 1161 (10th Cir. 2017).

150. *Id.* at 986; *Ergon-W. Va., Inc. v. Envtl. Prot. Agency*, 896 F.3d 600, 613 (4th Cir. 2018)

151. Erin Voegelé, *Wheeler: EPA to Create Public ‘Dashboard’ on RFS Waivers* (Aug. 02, 2018), <http://www.biodieselmagazine.com/articles/2516423/wheeler-epa-to-create-public-dashboard-on-rfs-waivers>.

A. *Rent Seeking and Regulatory Capture*

In recent years, hopes of spurring innovation in the development of cellulosic and advanced biofuels through the RFS have waned as politically powerful industry stakeholders have influenced the EPA's enforcement of provisions of those technologies.¹⁵² Oil industry advocates have consistently opposed congressional actions, promoting the development of renewable fuels as a threat to their fuel monopoly.¹⁵³ Increases in amounts of non-petroleum fuel blended into gasoline or diesel consequently decrease the market shares and profits of oil companies.¹⁵⁴ The corn lobby recognizes the threat from non-corn ethanol technologies and has incentives to slow the growth of those technologies, to continue receiving favored policy treatment under the RFS.¹⁵⁵

Although the Obama Administration's enforcement of the RFS favored the petroleum industry in some ways, the Trump Administration exponentially increased its concessions to the industry shortly after Scott Pruitt took the reins at the EPA.¹⁵⁶ Under Pruitt, the dramatic increase in small refinery waivers and the major re-staffing of positions within the EPA suggest that the EPA quickly became "captured" by the industries it is meant

152. *Free-Marketers, Environmentalists Both Have Reasons to Hate the RFS* (Aug. 7, 2017), <https://www.rstreet.org/2017/08/07/free-marketers-environmentalists-both-have-reasons-to-hate-the-rfs/> ("[T]he EPA should work with Congress to correct what is a fundamentally flawed statute, with the goal of creating an environment where market innovation is encouraged, rather than creating fake markets for industries with powerful lobbyists.")

153. See Marin Katusa, *Big Oil Hates Ethanol* (Mar. 3, 2015), <https://www.caseyresearch.com/big-oil-hates-ethanol/> (explaining that oil lobbyists have orchestrated campaigns of misinformation, questionable scientific research, lawsuits, restrictive franchising agreements for gas retailers, etc. in order to maintain the idea that ethanol is bad for the air, bad for cars, and bad for consumers).

154. *Id.*

155. Russ Choma, *Ethanol Takes on Big Oil* (Aug. 26, 2013), <https://www.opensecrets.org/news/2013/08/ethanol-vs-big-oil/>. The Obama administration was also favorable to the petroleum industry. See Alex Guillen, *Obama Curbs Ethanol in Blow to Corn Growers* (Nov. 30, 2015), <https://www.politico.com/story/2015/11/breaking-news-epa-scales-back-ethanol-mandate-in-gasoline-216270>. The Obama administration had actually rolled back some of the renewable fuel standards in 2015 as a response to what the oil industry's long touted artificial 10% "blend wall". At the time, there had been antagonism toward the RFS and corn-based ethanol coming from the environmental lobby. Furthermore, due to the expansion of offshore drilling under Obama and the decreased dependence on foreign oil, the petroleum industry renewed its efforts to discredit the RFS. *Id.*

156. Pruitt resigned from the EPA in July 2018 amid various ethics scandals, but his policies have experienced full continuity under the new administrator and former coal lobbyist, Andrew Wheeler. See Ledyard King, *Andrew Wheeler, Who's Been Leading Trump Deregulatory Charge, Confirmed by Senate as EPA Chief* (Feb. 28, 2019), <https://www.usatoday.com/story/news/politics/2019/02/28/trumps-new-epa-chief-andrew-wheeler-who-replaced-scott-pruitt/3014406002/> (discussing Andrew Wheeler's efforts).

to regulate.¹⁵⁷ After granting an unprecedented 53 small refinery exemptions in 2016 and 2017, the EPA received a record number of 39 exemption petitions for 2018 from small refiners who were evidently emboldened by the EPA's new liberal interpretation of "hardship."¹⁵⁸ It is unclear what eligibility for "disproportionate economic hardship" these dozens of exemption petitions are claiming, given that 2018 was among the most profitable years on record for the petroleum industry.¹⁵⁹

Of course, the oil industry is not the only industry exerting significant influence on the EPA's enforcement of the RFS. Over the years, numerous scholars have criticized the high degree of influence the corn industry has had on American energy policy.¹⁶⁰ In the past quarter century, U.S. taxpayers have spent billions of dollars subsidizing the production of corn through ethanol-related policies.¹⁶¹ The corn-based ethanol industry has likewise exerted its influence to evade stringent environmental regulations.¹⁶² Some argue that the corn-based ethanol lobby has even managed to secure for itself subsidies that Congress specifically earmarked for advanced biofuels.¹⁶³

A lack of transparency in RIN trading activities and the EPA's general difficulties in monitoring compliance under the RFS have also undermined

157. Erin Voegelé, *Representatives of the Biofuel Industry Testify at RFS Hearing* (July 18, 2018), biomassmagazine.com/articles/15468/representatives-of-the-biofuel-industry-testify-at-rfs-hearing. The 2016 and 2017 waivers resulted in an estimated 2.25 billion gallons of renewable fuel not being blended. Lindsey Dillon et al., *The Environmental Protection Agency in the Early Trump Administration: Prelude to Regulatory Capture*, 108 AM. J. PUB. HEALTH S89, S91-S93. The enforcement capability of the EPA has also been severely restricted. The agency suffered a 31% budget cut for 2018, a 25% staffing reduction, and there was a 60% drop in civil penalties during Pruitt's first six months. Science advisory boards have also been packed with industry lobbyists in positions previously held by publicly funded scientists; Pruitt's own agenda of meetings were primarily with company and trade organizations. *Id.*

158. *RFS Small Refinery Exemptions*, <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rfs-small-refinery-exemptions> (last updated Sept. 20, 2018); see Spencer Chase, *EPA Grants Five More Small Refinery Exemptions* (Mar. 14, 2019), <https://www.agripulse.com/articles/12008-epa-grants-five-more-small-refinery-exemptions> (showing there are a large amount of exemptions).

159. See Rebecca Elliott, *Gasoline Makers are Reaping Big Profits*, WALL STREET J. (Aug. 7, 2018), <https://www.wsj.com/articles/gasoline-makers-are-reaping-big-profits-1533634201> ("American fuel makers are posting their best second-quarter profits in years, thanks to soaring domestic oil production and regional pipeline bottlenecks that are allowing them to buy crude on the cheap.")

160. See Foley, *supra* note 32 (arguing that the current "corn system" exists largely as a result of "lobbyists, trade associations, big businesses and the government").

161. *Id.*; *Federal Subsidies for Corn Ethanol and Other Corn-Based Biofuels*, TAXPAYERS FOR COMMON SENSE (June 15, 2015), <https://www.taxpayer.net/energy-natural-resources/federal-subsidies-corn-ethanol-corn-based-biofuels/>.

162. Almuth Ernsting, *Cashing in on Cellulosic Ethanol: Subsidy Loophole Set to Rescue Corn Biofuel Profits* (Aug. 8, 2016), <https://www.independentsciencenews.org/environment/cashing-in-on-cellulosic-ethanol-subsidy-corn-biofuel/>; Arnold W. Reitze, Jr., *Biofuels--Snake Oil for the Twenty-First Century*, 87 OR. L. REV. 1183, 1199, 1203 (2008).

163. Ernsting, *supra* note 162.

enforcement of the standard.¹⁶⁴ There are reports that some refiners have taken advantage of the EPA's struggles by failing to report sales of generated RIN credits or by selling falsified credits.¹⁶⁵ The EPA has attempted to respond to these issues through a "Quality Assurance Plan," but it appears that some of these practices have nonetheless continued.¹⁶⁶ The EPA's approach has largely been to require obligated parties to determine whether a purchased RIN credit is legitimate, which can be a particularly difficult burden to bear for small companies seeking to break into the ethanol market.¹⁶⁷ The RFS will be capable of fulfilling its chief objectives over the long term only if Congress finds a way to insulate the policy from the regulatory capture problems and rent-seeking behavior that currently plague it.

B. *Deficiencies in the Current RFS Waiver Structure*

The existing statutory provisions governing RFS waivers suffer from several deficiencies that have made them particularly vulnerable to abuse. Fortunately, there are ways that Congress could improve the structure of RFS waiver provisions to afford adequate flexibility to the EPA without becoming tools for industry stakeholders to avoid compliance. In a 2013 law journal article, Judge David Barron and Professor Todd Rakoff identified several principles for the structuring of waivers to effectively serve their purposes.¹⁶⁸ The article highlighted a distinction between ordinary waiver provisions and what they call "big waivers," which essentially give agencies "broad, discretionary power to determine whether the rule or rules that Congress has established should be dispensed with" altogether.¹⁶⁹ Professor Derek Black

164. Evan Halper, *Loosely Regulated Market for Biofuel Credits Spurs Speculators and Swindlers* (Mar. 26, 2018), <https://www.latimes.com/politics/la-na-pol-fuel-renewables-20180326-story.html>.

165. *See Lifestyles of RINs and Fraudsters* (May 25, 2018), <https://smarterfuelfuture.org/blog/details/rin-fraudsters/>. Instances of fraud include owning a biodiesel factory as a front for fake production of credits, reselling RIN serial numbers that had previously been sold, and selling fake numbers. The three instances mentioned totaled approximately \$200 million worth of fraud on the market. *Id.*

166. *Fraudulent RIN Cases Underscore Continuing Concerns for Renewable Fuel Credit Program*, HUSCH BLACKWELL (Oct. 17, 2016), <https://www.emergingenergyinsights.com/2016/10/fraudulent-rin-cases-underscore-continuing-concerns-renewable-fuel-credit-program/>

167. *Id.*; Christopher M. Holman, *The Renewable Fuel Standard Reimagined: Clearing a Path for Truly Advanced Biofuels*, 86 UMKC L. REV. 805, 820 (2018).

168. David J. Baron & Todd D. Rakoff, *In Defense of Big Waiver*, 113 COLUM. L. REV. 265, 271–272 (2013). *But see* Yair Sagy, *A Better Defense of Big Waiver: From James Landis to Louis Jaffe*, 98 MARQ. L. REV. 697, 697 (2014) (the only response to Barron and Rakoff's article on big waiver).

169. Baron & Rakoff *supra* note 168, at 267; *see also* Judson N. Kempson, *Star-Crossed Lovers: The Department of Education and the Common Core*, 67 ADMIN. L. REV. 595, n. 168 (2015) (comparing the impact of Flexibility Waivers on the development of State educational standards under the

built upon this idea, adding that when Congress conditionally grants “big waiver” authority, a heightened standard of scrutiny is warranted to preserve constitutional limits on the power of executive agencies.¹⁷⁰ However, the case law on statutory waivers and the balance of powers is relatively sparse; thus, courts have largely refrained from analyzing constitutional law issues in this area as there is no clear framework for approaching them.¹⁷¹

Waiver authority is a unique administrative law problem because it involves situations in which Congress expressly gives authority to an agency to waive requirements enacted through legislation. Some “little waivers” (as Barron and Rakoff call them) are authorized only for limited circumstances to address exceptional situations, but other types of waivers vest agencies with power to effectively rewrite congressionally enacted requirements.¹⁷² These grants of “big waiver” authority to administrative agencies have become more pronounced in recent decades. In some instances, such “big waivers” can be valuable ways to give agencies the flexibility they need to operate and effectively exercise discretion and are lawful grants of legislative power.¹⁷³

However, the RFS small refinery exemption is not a “big waiver,” and EPA should not misuse it as such.¹⁷⁴ Statutory language authorizing the small refinery exemption constrains the EPA’s use of it and suggests that Congress did not intend to empower the agency to use the exemption to effectively dispense with the RFS requirements.¹⁷⁵ Unfortunately, the EPA has effectively treated the RFS waiver provision as a “big waiver” in ways that

Elementary and Secondary Education Act “ESEA” with the RFS waivers provided by the EPA); Patrick Haney, *Coercion by the Numbers: Conditional Spending Doctrine and the Future of Federal Education Spending*, 64 CASE W. RES. L. REV. 577, 600 (2013) (describing the scope of power ESEA waivers provide the Department of Education as a comparison to the similarly structured RFS waivers).

170. Derek W. Black, *Federalizing Education by Waiver?*, 68 VAND. L. REV. 607, 638 (2015). In addition to issues of agency interpretation, Black raises concerns of non-delegation doctrine, arguing that conditional big waivers heighten the clarity with which Congress must give waiver authority.

171. *Id.* at 628 (citing *Beno v. Shalala*, 30 F.3d 1057, 1064–67 (9th Cir. 1994)); *Connecticut v. Spellings*, 453 F. Supp. 2d 459, 464–65 (D. Conn. 2006); *C. K. v. Shalala*, 883 F. Supp. 991, 1001–04 (D. N.J. 1995); *Complaint, Nat’l Ass’n of Cmty. Health Ctrs. v. Shalala*, No. 1:94-CV01238 (D. D.C. June 7, 1994); *see also Recent Case*, 108 HARV. L. REV. 1208, 1211 (1995) (analyzing judicial review of the welfare waiver).

172. Baron & Rakoff, *supra* note 168, at 276–77.

173. *See id.* at 278 (describing a potential model of the “biggest waiver”).

174. *See* 42 U.S.C. § 7545(o)(7)(A), (D)–(E)(ii) (2018) (describing that the actual “big waiver” provisions include the general waiver, the cellulosic biofuel waiver, and the waiver for biomass-based diesel); *id.* § 7545(o)(9) (describing the small refinery exemption, which has characteristics that are more representative of a “little waiver” that are unfortunately used in a big way).

175. *See* 42 U.S.C. § 7545(o)(9). There is no mention of the word “waiver” in subsection (9). The exemption is not located in the subsection titled to waivers. If Congress intended for the exemption to be used as a “waiver” with the same degree of impact as the any other waiver in the RFS, it would have placed the small refinery exemption within the section on waivers. Furthermore, there is no language that suggests any issuance of a small refinery waiver would have any effect on modifying total applicable volumes while in the “Waiver” section, such impact is contemplated and accounted for.

exceed the scope of the agency's authority and undermine the goals of the RFS.

Improvements are also needed to other waiver provisions in the RFS including the general waiver, the waiver for cellulosic biofuel, and the waiver for advanced biofuels. As currently structured and interpreted, these waiver provisions also create uncertainty regarding enforcement of the RFS. Drawing from Barron and Rakoff's principles, statutory amendments are needed to clarify: (1) the "scope" of the EPA's statutorily-granted waiver power; (2) the "authority of the agency to create criteria for granting conditional waivers"; and (3) the agency's "duty to explain" and legally justify the waiver decisions it makes.¹⁷⁶ Having a workable framework for assessing effective waivers sets the boundaries of an agency's power as defined by Congress and the Constitution. Broad delegating language should not be viewed as the equivalent to "broad or unlimited power" to substitute an agency's rulemaking with laws Congress enacted.¹⁷⁷ The following materials analyze a few discrete RFS waiver issues under existing legal and policy principles, highlighting some of the deficiencies in the existing structure of these policies.

1. Waivers Contribute to Uncertainty

The availability of RFS waivers from an agency with broad discretion to grant or deny them erodes certainty and predictability in transportation fuel markets.¹⁷⁸ Indeed, the lack of consistency in the application and enforcement of the RFS is already impeding the efficient functioning of markets for renewable fuel.¹⁷⁹ Few possibilities could create more hesitation in a renewable fuel market stakeholder than the real possibility that a single administrative act could cause market demand for biofuel to instantly disappear. Of course, waiver provisions do not have to create that degree of uncertainty. For example, the biomass-based diesel waiver has never been used.¹⁸⁰ Of all the waivers embedded in the statute, it has the most restrictive

176. Baron & Rakoff, *supra* note 168, at 320, 325, 327. Congress had enacted the RFS telling the EPA to enforce a standard for renewable fuel. Congress also gave the EPA the power to waive all or part of that standard if certain circumstances arose. A framework is necessary in order to understand how these two delegations of authority relate to one another. To determine how much deference a court reviewing the EPA's action must give, it would look to the scope of the delegation and the criteria of the specific provision to determine if the EPA's waiver action was justified.

177. Black, *supra* note 170, at 677 ("[T]he EPA's regulation of the environment may appear limitless, but statutory language explicitly narrows the scope in which broad delegating language operates. The EPA does not possess the power to regulate the environment in general.").

178. Neufeld & Fey, *supra* note 141, at 300–301.

179. *See id.* at 307 (describing the EPA's negative impact on merchant refiners as a result of imposing its RFS2 authority).

180. CONG. RESEARCH SERV., R44045, THE RENEWABLE FUEL STANDARD (RFS): WAIVER AUTHORITY AND MODIFICATION OF VOLUMES 1, 5 (2019).

grant conditions. Even if it were granted, there would be no possibility of the standard being waived for more than 120 days in total.¹⁸¹ The specific limitations in the biodiesel waiver provisions, if included in the other waivers, could help shore up market demand and private investment in renewable fuel markets.

Industry stakeholders' use of the small refinery exemption excused those stakeholders from having to supply roughly 2.25 billion gallons of renewable fuel in 2018, significantly decreasing the demand for these products.¹⁸² The negative impact of these exemptions is felt not only by the ethanol industry but also by oil refiners who did not receive exemptions. In fact, some refiners have suffered losses because the abundance of granted exemptions eroded market demand for RIN credits.¹⁸³ Such government-induced unpredictable market shifts generate inefficiency for market participants and can ultimately slow the growth of healthy, reliable renewable fuel markets.

2. Interpreting the Scope of Waiver Authority under the RFS

Ambiguous statutory terms governing the EPA's authority to grant waivers are troubling, in part because they ultimately require courts to determine the scope of the agency's waiver powers.¹⁸⁴ Federal agencies, such as the EPA, generally may only waive Congressionally enacted requirements if Congress has expressly given them power to do so. In *MCI Telecommunications Corp. v. AT&T*, the U.S. Supreme Court held that a simple Congressional authorization for the Federal Communications Commission to modify requirements applicable to common carriers did not carry the same power as the power to waive a statutory requirement.¹⁸⁵ Accordingly, the Court held that the Commission could not completely exempt common carriers from regulation because a decision to do so would exceed its authority.¹⁸⁶ Broad waiver authority appears to only be available to an agency if a statute expressly gives that agency power to "waive" or issue a waiver.¹⁸⁷ In the case of the RFS, 42 U.S.C. § 7545(o)(7) suggests that Congress intended to grant the EPA some authority to modify requirements or grant waivers within certain constraints outlined in the statute.¹⁸⁸ However, the EPA is arguably being far too permissive in its

181. See 42 U.S.C. § 7545(o)(7)(E)(ii)–(iii) (2018) (describing the waiver and extension processes for biomass-based diesel).

182. Voegelé, *supra* note 157.

183. *Id.*

184. *Waiving Chevron Deference*, 132 HARV. L. REV. 1520, 1527–28, 1533–34 (2019).

185. *MCI Telecomm. Corp. v. Am Tel. & Tel. Co.*, 512 U.S. 218, 234 (1994) (noting the difference between modification and waiving requirements)

186. *Id.*

187. See *id.* (discussing the Commission's ability to waive).

188. 42 U.S.C. § 7545(o)(7) (2018).

interpretation of these constraints in ways that are exceeding the agency's power.

An analog to the *MCI Telecommunications* case is found in the "modification of applicable volumes" section of the RFS.¹⁸⁹ This section gives the EPA Administrator authority to modify fuel standard requirements if certain criteria are met.¹⁹⁰ However, the modification section does not expressly give authority to issue a waiver. The scope of authority granted under these modification provisions is narrower than the general, cellulosic biofuel, and biomass-based diesel waiver provisions.¹⁹¹ Authority to modify volume requirements is functionally equivalent to the authority to fully waive those requirements.

Evidence that the EPA is exceeding its statutorily-granted authority is also arguably visible in connection with the small refinery exemption, which is also not found in the subsection entitled "Waivers."¹⁹² Referencing only the possibility of a "temporary exemption" or "extension of exemption" for "disproportionate economic hardship," the location of the small refinery provision within the statute and the absence of waiver language in connection with it imply a narrower scope of granted authority.¹⁹³ The EPA's recent use of these provisions to liberally excuse refiners from compliance arguably exceeds these more narrowly drawn powers. However, litigation in courts aimed at establishing this and constraining the EPA's discretion is risky and expensive. Improvements to RFS legislation more clearly constraining EPA waiver authority would help alleviate this problem.

3. Comparing the RFS Waiver Provisions to Waivers Elsewhere in Federal Law

The deficiencies in the RFS waivers are easier to recognize when contrasted with more effective waivers found elsewhere in federal law. A government agency executing legislative mandates has a continuing duty to fulfill the purpose of a mandate, even if the agency has authority to waive compliance with those mandates in certain situations.¹⁹⁴ Accordingly, the existing academic literature suggests that two key ingredients in effective delegations of broad waiver authority are "procedural and substantive restrictions on the agency's waiver power."¹⁹⁵ The Montana Renewable

189. *Id.* § 7545(o)(7)(F).

190. *Id.*

191. *Id.* § 7545(o)(7)(A), (D)–(E) (explaining, respectively, the general waiver, cellulosic biofuel waiver, and biomass-based diesel waiver provisions).

192. *See id.* § 7545(o)(9)(A)–(B) (describing small refinery exemptions, not waivers).

193. *Id.* § 7545(o)(9)(A).

194. Baron & Rakoff, *supra* note 168, at 325–26.

195. *Id.* at 323.

Portfolio Standard (RPS) waiver, the Federal Emergency Management Agency's (FEMA) economic hardship assistance waivers for disaster relief, and the RFS waiver for fuel additives all feature desirable provisions in this regard.¹⁹⁶ Multiple other waiver provisions within the RFS do not.¹⁹⁷

The Montana RPS contains a waiver provision for compliance that is structured to insulate it from potential abuses. The Montana RPS was enacted in 2005 as part of a legislative effort to promote renewable energy development and new economic activity in rural areas.¹⁹⁸ Under the standard, most utilities in the state must get a certain percentage of their retail electricity from eligible renewable resources, with 15% coming from renewable resources by 2015.¹⁹⁹ Importantly, the waiver provision associated with this requirement was among the most explicit in the country when the legislation was enacted and has since served as a model for other states.²⁰⁰ The waiver is “short term” and, to receive it, a utility must demonstrate it has “undertaken all reasonable steps to procure renewable energy credits under long-term contract” or that integration of renewable technologies “will clearly and demonstrably jeopardize the reliability of the electrical system.”²⁰¹ The explicit statutory purpose was manifest in this waiver provision, which makes clear there is a standard for qualifying for a waiver and that specific substantive and procedural requirements must be met.²⁰²

Another well-structured waiver provision appears in 15 U.S.C. § 2229(k)(4), which governs the FEMA firefighter assistance program.²⁰³ The statute grants broad waiver authority in cases of economic hardship and empowers the FEMA Administrator to define “economic hardship” and to otherwise “establish and publish guidelines” for the program’s implementation.²⁰⁴ FEMA issues guidelines after consulting with designated experts and taking into account various statutory “considerations.”²⁰⁵ Compared to the ambiguous definition of economic hardship in the RFS, the FEMA definition of economic hardship is clear and specific. Such

196. K.S. CORY & B.G. SWEZEY, NAT'L RENEWABLE ENERGY LABORATORY, TECHNICAL REPORT NREL/TP-670-41409, RENEWABLE PORTFOLIO STANDARDS IN THE STATES: BALANCING GOALS AND IMPLEMENTATION STRATEGIES 17 (2007); 15 U.S.C. § 2229(k)(4)(B); Baron & Rakoff, *supra* note 168, at 340–41.

197. K.S. Cory & B.G. Swezey, *supra* note 196, at 15.

198. *Renewable Resource Standard*, DSIRE, <https://programs.dsireusa.org/system/program/detail/384> (last visited Oct. 26, 2019).

199. *Id.*

200. *See* Energy Independence and Security Act of 2007, Pub. L. No. 110-140 (legislation enacted as a demonstration to the states for economical utility renewable sources).

201. K.S. Cory & B.G. Swezey, *supra* note 196, at 17.

202. *Id.*

203. 15 U.S.C. § 2229(k)(4) (2018).

204. *Id.*

205. *Id.*

Congressional guidance can make it easier for courts to evaluate whether an agency's interpretation and action are within intended bounds.

Statutory language clearly prohibiting deviations from the state purposes increases the likelihood that agencies will exercise their waiver powers inappropriately. Barron and Rakoff suggest a baseline presumption for courts to adopt when addressing issues of "big waiver" use:

[T]he statute should provide, or, if silent, should be understood to provide, for big waiver only insofar as it is in furtherance of the same basic purposes as the substantive statutory provisions to be waived [S]ilence should not be understood as an occasion for the agency to resolve the ambiguity, such that it may identify reasons more favorable to the exercise of the big waiver power.²⁰⁶

Even within the codified statute of the RFS are desirable waiver provisions for other programs. For instance, provisions in the RFS authorize the Administrator to "temporarily" waive a fuel additive requirement regulation if several clear requirements are met.²⁰⁷ Additionally, granting the waiver must be "in the public interest," such as in the event of a projected temporary shortfall in fuel additive supply with no other means of addressing the shortfall.²⁰⁸ Even after the Administrator finds that a waiver is warranted, the waiver is permissible only if it features several constraints.²⁰⁹ Specifically, it must be limited to the "smallest geographic area necessary," be effective for no more than 20 days, have a "transitional period . . . for the shortest practicable time period necessary," apply equally to all parties in the regulated system and follow the delivery of public notice to "all parties in the motor fuel distribution system, and local and State regulators" in affected regions.²¹⁰

The waiver provisions related to fuel additive regulations in § 7545(c) provide a stark contrast to those governing other types of fuel-related waivers. The scope of the waiver is clear: it is temporary, has clearly defined criteria for making determinations, requires joint decision-making, and provides guiding examples and good statutory rules of construction. The chances that the EPA will construe the provisions of the statute in line with Congressional intent, and that any competent court will find such

206. Baron & Rakoff, *supra* note 168, at 335.

207. Specifically, the statute requires "consultation with, and concurrence by, the Secretary of energy" determining that "extreme and unusual" supply circumstances exist, such circumstances are the result of an event that "could not reasonably have been foreseen or prevented" and was not related to a lack of "prudent planning" on the part of regulated parties. 42 U.S.C. § 7545(c)(4)(C)(ii).

208. *Id.*

209. *Id.* § 7545 (c)(4)(C)(ii)-(iii).

210. *Id.* § 7545 (c)(4)(C)(iii)(I)-(V).

interpretation reasonable, are greatly improved. Predictability and certainty for parties affected by the regulation is also considered through the second part of the waiver provision which sets a time limit to the waiver and requires advance notice.²¹¹ The EPA is also given guidelines for modifying criteria should a waiver be granted allowing the Administrator to modify the transition period by shortening it, and to determine what is absolutely “necessary” to address circumstances for the waiver.²¹² Rather than giving the EPA or a federal court free reign to decide what a “reasonable” interpretation of its authority may be, the language of the statute allows the EPA to more effectively carry out its duty to explain any action it may take to modify Congressional standards.²¹³

Inseparable from the need to create clear and effective criteria for the grant of waivers is the duty of an agency to justify its action once a waiver authority has been exercised. After being subject to public scrutiny through the EPA’s abuse of the small refinery exemption, Andrew Wheeler, recently confirmed head of the EPA, admitted, “As one of the former congressional staffers that helped write . . . [the RFS small refinery exemption provision,] I wish we would have spent a little bit more time on some of the details now that I’m helping to implement it.”²¹⁴ The duty to explain is also harder to fulfill when clarity is lacking and no explicit procedural requirements exist for granting a waiver or denying one. Any reform in the RFS could benefit from substantive and procedural requirements that explicitly embody the statutory purpose of the legislation: to have an actual standard—one that is not so easily undermined by politics of non-enforcement or regulatory capture.

C. The Economic Failings of the Current RFS

The current RFS and the EPA’s approaches to enforcing it are not only questionable under the law, they are also inefficient in ways that are delaying the advancement of the nation’s renewable fuel industry. By excessively incentivizing corn-based ethanol production over other more renewable fuel strategies, the RFS leads to inadequate investment in advanced biofuel technologies. The EPA’s unpredictable use of waivers under the RFS also creates market uncertainty that further deters private investment in renewable fuels.

211. *Id.* § 7545 (c)(4)(C)(iii)(II), (V).

212. *Id.* § 7545 (c)(4)(C)(iii)(III).

213. *Id.* § 7545 (c)(4)(C)(iii).

214. Voegele, *supra* note 151.

1. Over-subsidization of the mature corn ethanol industry negatively impacts the growth of advanced biofuels

Advanced biofuels need similar long-term incentives for corn to meet the statutory goals of the RFS. Viewing the development of ethanol as a fuel within the theoretical model of the product life cycle and product innovation suggests that similar market incentives to corn need to exist for advanced and cellulosic biofuel to meet their statutory goals. Generally, the life cycle of a product in its later stages is marked by a leveling out of firms offering the product followed by eventual market consolidation and stabilization.²¹⁵ After the RFS was implemented, the number of conventional ethanol firms grew sharply and eventually came to a mature stage characterized by increased production efficiency and stabilization of new actors entering the market.²¹⁶ While the RFS mandate has incentives that spurred the development of an economically sustainable corn-based biofuels industry during the initial stages, the effects of the policy are not as significant now that conventional ethanol can be considered an established industry.²¹⁷ This long history of corn subsidies has allowed the corn ethanol industry to become the powerful and well-established force it is today.

Numerous policymakers and scholars have criticized the role that the corn industry has played in the development of the American biofuel industry.²¹⁸ The vast majority of the ethanol manufactured in the United States comes from corn feedstock, and the environmental effects of commercially grown corn have long been concerning.²¹⁹ Over the last 30 years, taxpayers have spent tens of billions of dollars subsidizing the production of corn ethanol.²²⁰ Just between 1995 and 2010 alone, subsidies for corn totaled approximately \$90 billion, not including indirect subsidies through the RFS mandates.²²¹ Congress even recognized how heavily

215. Jay P. Kesan et al., *An Empirical Study of the Impact of the Renewable Fuel Standard (RFS) on the Production of Fuel Ethanol in the U.S.*, 2017 UTAH L. REV. 159, 182 (2017) (documenting the development of forty-six varied products price, output, sales and change in number of firms over the life of each product). There are similar life cycle phases for manufacturing industries identifying five distinct stages: 1) introduction to market with new firms rapidly entering the market, 2) sharp growth of firms, 3) leveling out of firms characterized by similar numbers of firms entering as well as exiting the market, 4) sharp decline in the number of firms and 5) eventual stabilization, consolidation, with almost no new entry. *Id.*

216. *Id.* at 160.

217. *Id.*

218. *Id.* at 163–64.

219. RENEWABLE FUELS ASS'N, *supra* note 61, at 8–9; Foley, *supra* note 32 (estimating total corn subsidies at \$90 billion between 1995 and 2010).

220. *Fact Sheet: Federal Subsidies for Corn Ethanol and other Corn-Based Fuels* (June 15, 2015), <https://www.taxpayer.net/energy-natural-resources/federal-subsidies-corn-ethanol-corn-based-biofuels/>.

221. Foley, *supra* note 32.

propped up corn was in its 2008 farm bill which prohibited corn ethanol from qualifying for energy title spending.²²² In response, corn ethanol producers avoided these prohibitions by convincing the USDA to add “ethanol blender pumps to its list of projects” that qualify for funding through the Rural Energy for America Program.²²³ Scattered throughout various federal programs are a broad range of subsidies and special treatments for the corn industry.²²⁴

Decades of heavy government support for corn-ethanol industry have helped mature the industry in ways which, today, slow cellulosic and advanced biofuels markets growth. Though the federal government highly subsidizes advanced and cellulosic biofuels, the total assistance they have received over the years is negligible when compared to that of corn-based ethanol.²²⁵ Years and years of sustained corn subsidies allowed the industry to mature to where it can produce more corn on the same land at less cost, producing a competitive edge for ethanol.²²⁶ Under the current system, it is unlikely that advanced biofuels industry will grow to levels comparable to conventional ethanol. These industries need available private financing and ongoing guaranteed government assistance, like the corn industry received, to establish them.

2. The Current RFS Leads to Market Uncertainty Hindering Investment in Advanced Fuels.

The RFS and its unpredictably granted waivers create unnecessary policy uncertainty that hinders private investment in renewable fuels. This policy uncertainty also distorts gasoline and corn-based ethanol markets. Because the EPA’s issuance of waivers has been inconsistent since EISA was passed, some commodities market experts have been unwilling to factor in the RFS in their forecasts. Generally, uncertainty negatively impacts markets, retarding economic growth.²²⁷ Investors are more risk-averse during times of uncertainty, which can hamper the development of innovative technology.²²⁸ Policy uncertainty pushes investors to take a “wait and see” approach that

222. *Federal Subsidies for Corn Ethanol*, *supra* note 220.

223. *Id.*

224. *Id.*

225. *Compare id.* (explaining corn subsidies) with *Updated Report: Federal Subsidies for Biofuels and Biomass Energy* (Dec. 1, 2017), <https://www.taxpayer.net/energy-natural-resources/federal-subsidies-biofuels-biomass-energy/>.

226. Kesan et al., *supra* note 215, at 201.

227. *See generally* Scott R. Baker et al., *Measuring Economic Policy Uncertainty*, 131 Q. J. ECON. 1593, 1633 (2016).

228. *See generally* Libing Fang et al., *The Effect of Economic Policy Uncertainty on the Long-Term Correlation Between U.S. Stock and Bond Markets*, 66 ECON. MODELLING 139, 139-140 (2017).

can stagnate development.²²⁹ These common responses to uncertainty typically dampen growth.²³⁰

Data describing recent investments in advanced biofuels supports this analysis. For instance, the United Nations Environment Programme (UNEP) report on global trends in renewable energy investment showed that investment in advanced biofuels fell by over a third from 2013 to 2014, due to uncertainties. The report stated, “chronic uncertainty overshadow[s] the US market.”²³¹ The same UNEP report for 2015 stated that conflicting regulations in the U.S. made advanced ethanol producers shift focus to more secure biochemical production.²³² Again, U.S. policy uncertainty was specifically listed as a deterrent for investors from the industry.²³³ With the transition of administrations in 2016, investment in biofuels slumped 60% from previous years, in part because of questions surrounding the RFS.²³⁴ In 2017, biofuel investment declined to its lowest level on record while the number of waivers the EPA issued skyrocketed.²³⁵ At least one leading scholar on the RFS has stated that the program’s waivable mandate is failing to induce investments, and without policy changes creating greater market certainty the U.S will fail to meet its advanced biofuel goals.²³⁶

Clearly, uncertainty has negatively impacted investments in advanced biofuels, but there is evidence that RFS uncertainty has also negatively impacted other related industries. In a prepared statement before the Senate, one oil company executive lamented that, “EPA interpretation of the waiver language has caused some confusion and concern . . . Several changes to the

229. SIMON GILCHRIST, JAE W. SIM & EGON ZAKRAJŠEK, UNCERTAINTY, FINANCIAL RESTRICTIONS, AND INVESTMENT DYNAMICS 1 (Nat’l Bureau of Econ. Res., Apr. 2014).

230. STEVEN J. DAVIS, REGULATORY COMPLEXITY AND POLICY UNCERTAINTY: HEADWINDS OF OUR OWN MAKING 15–16 (2017).

231. FRANKFURT SCH. OF FIN. & MGMT., GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2015 76 (2015).

232. *Id.* at 65.

233. FRANKFURT SCH. OF FIN. & MGMT., GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2016 69–70 (2016).

234. FRANKFURT SCH. OF FIN. & MGMT., GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2017 75 (2017).

235. FRANKFURT SCHOOL OF FIN. & MGMT., GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2018 52 (2018); *see also* cases interpreting the scope of waiver provisions and ambiguous criteria: *Am. Petroleum Inst. v. Evtl. Prot. Agency*, 706 F.3d 474, 481 (D.C. Cir. 2013) (EPA waiver conditions interpreted for the cellulosic biofuel waiver as to how “projected volumes” for a given year would be determined); *Ams. for Clean Energy v. Evtl. Prot. Agency*, 864 F.3d 691, 712 (D.C. Cir. 2017) (waiver triggered if the requirement would harm the economy or environment or there is limited supply); *Ergon-W. Va., Inc. v. Evtl. Prot. Agency*, 896 F.3d 600, 601 (4th Cir. 2018) (waiver is triggered when the requirement would cause hardship to a small refinery).

236. BRAD BABCOCK, ROLE OF THE RFS IN INDUCING INVESTMENT IN CELLULOSIC BIOFUELS REFINERIES (2014); *Biofuels for Energy Sec. and Transp. Act of 2007*, Hearing Before the Comm. on Energy and Nat. Res. U. S. S., 110th Cong., 40 (2007) (statement of Red Cavaney, President and Chief Executive Officer, American Petroleum Institute).

waiver language would help to correct these problems.”²³⁷ Uncertainty as to whether the EPA will waive compliance hurts oil companies’ ability to predict their markets. The credit program can effectively alleviate short term supply issues with ethanol, but also creates market uncertainty for the corn industry.²³⁸ Another major complaint of oil industry stakeholders is the lack of clarity in the granting of waivers has resulted in some refineries obtaining insider information from the EPA.²³⁹ Using the information to secure waivers, in excess of the average, creates an unfair market advantage.²⁴⁰ This “insider trading” is epitomized by a waiver granted to a refinery owned by Carl Icahn, a member of the Trump administration.²⁴¹ Icahn’s waiver specifically has drawn the ire of some Senate members.²⁴² Ironically, during his short stint as also an administration member, Icahn himself called the RFS system “rigged.”²⁴³

IV. RECOMMENDATIONS FOR IMPROVING THE RFS

The most promising potential means of addressing problems with the current RFS waivers are relatively straightforward. Congress must revise the general and advanced biofuel waiver provisions to more clearly limit the EPA’s discretion and reduce inconsistencies across administrations. Congress should also eliminate the small refinery waiver, which has no valid justification. Statutory language that requests stringent judicial review of waiver grants could also help promote more consistent implementation. Amendments to statutory provisions related to the RIN credit system could help to discourage the inefficient practice of gaming through stockpiling.

237. *Biofuels for Energy Security and Transp. Act of 2007*, Hearing Before the S. Comm. on Energy and Nat. Res., 110th Cong. at 40 (2007).

238. GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2018, *supra* note 235, at 52.

239. Erin Voegelé, *EPA Releases Data on Small Refinery Hardship Waivers* (Sept. 20, 2018), <http://ethanolproducer.com/articles/15622/epa-releases-data-on-small-refinery-hardship-waivers>; see also Jarrett Renshaw & Chris Prentice, *Exclusive: U.S. EPA Grants Refiners Biofuel Credits to Remedy Obama-era Waiver Denials* (May 31, 2018), <https://www.reuters.com/article/us-usa-biofuels-waivers-exclusive/exclusive-epa-grants-refiners-biofuel-credits-to-remedy-obama-era-waiver-denials-idUSKCN1IW1DW> ((noting complaint that the EPA is giving an advantage to a narrow piece of the market).

240. *Id.*

241. Jarrett Renshaw, *Senators ask Billionaire Icahn for Refinery Waiver Details* (May 9, 2018), <https://www.reuters.com/article/us-usa-biofuels-icahn/senators-ask-billionaire-icahn-for-refinery-waiver-details-idUSKBN1IA13K>.

242. *Id.*

243. Laura Blewitt & Zachary Mider, *Icahn Calls on EPA to Fix ‘Mother of All Short Squeezes’* (Aug. 15, 2016), <https://www.bloomberg.com/news/articles/2016-08-15/carl-icahn-calls-on-epa-to-fix-mother-of-all-short-squeezes>; Jennifer Dlouhy & Mario Parker, *Refiner Bankruptcy Adds to Pressure to Overhaul Biofuel Program* (Feb. 1, 2018), <https://www.bloomberg.com/news/articles/2018-02-01/refiner-bankruptcy-adds-to-pressure-to-overhaul-biofuel-program>.

Further, Congress should better incentivize non-corn ethanol investment through subsidies, or other means, to push the RFS's advanced biofuel goals.

A. *Revising the RFS Waivers*

Congress could greatly improve RFS's effectiveness by incorporating elements of other RFS waiver provisions. There must be clear guidelines for understanding Congressional grants of waiver authority.²⁴⁴ The *Chevron* two-step analysis, finding ambiguity and then assessing reasonableness, produces inconsistent results. Various case law interpreting RFS waiver provisions recognize these inconsistencies.²⁴⁵ If the EPA and other agencies are to be insulated from partisan political considerations and corporate capture, provisions should be construed as objectively and faithfully to the legislation as possible.²⁴⁶ Effective waivers consider both the agency's perspective when determining its scope of action given by Congress and rationales under judicial review.²⁴⁷ Both the general waiver and the advanced biofuel waiver lack these essential characteristics.²⁴⁸

1. Narrowing the General and Advanced Biofuel Waivers

As previously discussed, a good statutory waiver must have clearly defined limits to be effective. Litigation over the cellulosic biofuel and general waivers fails to provide any legal clarity on how such waivers should be interpreted.²⁴⁹ Clearer procedural and substantive constraints on these waivers are needed to finally enable them to function effectively.²⁵⁰

244. Black, *supra* note 170, at 670 (“If Congress ‘wishes to assign to an agency decision of vast . . . political significance,’ Congress must ‘speak clearly.’”) (citing *Util. Air Regulatory Group v. Envtl. Prot. Agency*, 134 S. Ct. 2427, 2444 (2014)).

245. *See, e.g.*, *Ams. for Clean Energy v. Envtl. Prot. Agency*, 864 F.3d 691, 707 (D.C. Cir 2017) (finding that the EPA's interpretation of the “inadequate domestic supply” waiver was inconsistent with the CAA); *Am. Petroleum Inst. V. Envtl. Prot. Agency*, 706 F.3d 474, 479 (D.C. Cir 2013) (stating that the EPA's interpretation of the RFS waiver to “promote growth” in the cellulosic biofuel industry was inconsistent with the text of the CAA); *Sinclair Wyo. Ref. Co. v. Envtl. Prot. Agency*, 887 F.3d 986, 988 (10th Cir. 2017) (concluding that the EPA incorrectly interpreted the hardship exemption in the CAA).

246. *Barron & Rakoff, supra* note 168, at 335 (explaining that the statute “should be understood to provide, for big waiver only insofar as it is in furtherance of the same basic purposes as the substantive statutory provisions to be waived . . .”).

247. *Id.* at 319–320.

248. *See* 42 U.S.C. § 7545(o)(7) (2018).

249. *See Am. 's for Clean Energy*, 864 F.3d at 710 (challenging the 2015 General Waiver conditions interpretation by the EPA of “inadequate domestic supply”); *Sinclair Wyo. Ref. Co.*, 874 F.3d at 1159 (finding that the EPA incorrectly interpreted the RFS hardship exemption in the CAA); *Ergon-W. Va., Inc. v. U.S. Envtl. Prot. Agency*, 896 F.3d 600 (4th Cir. 2018) (questioning the process for granting small refinery exemptions for “disproportionate economic hardship”).

250. *See* *Baron & Rakoff, supra* note 168, at 323 (recognizing careful drafting in regard to the significant substantive and procedural requirements for granting waivers within the Affordable Care and the No Child Left Behind Act).

Procedural limits impose a process the parties must follow to protect waiver provisions from misuse and provide adequate notice. The RFS waivers should require mandatory consultation with other agencies, concurrence or consent from other agencies and affected parties, publication of basis for granting waivers, notice to all obligated parties of any waivers under consideration, time limits on the effective period, and geographical or jurisdictional limits on the application of a waiver.²⁵¹

Additionally, effective waivers require substantive limits. A waiver provision could have a list of items that cannot be waived, or a list of scenarios that are precluded from application for a waiver.²⁵² Definitions of “hardship” or “extreme circumstances” provide guidance to an agency and reviewing courts. Illustrations should include both positive and negative examples, what are anticipated situations for grant of waiver. Furthermore, illustrations should include what situations should be categorically excluded, and pre-determined eligibility criteria, such as who can request waivers.²⁵³ If the agency is required to show a determination, then burdens of proof and relevant factors should be explicit. Like the Montana RPS, applicants could demonstrate they have taken all reasonable steps to comply with the standard, or that issuance of the waiver be in furtherance of the statutory purposes.²⁵⁴ This and the other aforementioned statutory changes, related to the waivers, would address fundamental problems with the general waiver. This includes waivers for cellulosic and advance biofuel, which creates greater market certainty and thereby helps to improve the overall effectiveness of the RFS.

2. Eliminating the Small Refinery Exemption

Any Congressional amendment aimed at improving the RFS and its waiver structure must also eliminate the small refinery exemption. The scope of the EPA’s authority under this exemption is unclear, as it has enabled the EPA to exempt refiners from supplying roughly 2.25 billion gallons of ethanol under Scott Pruitt.²⁵⁵ Under Pruitt, the EPA effectively waived 15% of total compliance requirements; even the exemption was never intended to

251. 42 U.S.C. § 7545(c)(4)(C)(v); *see also* Lauren Moxley, *E-Rulemaking and Democracy*, 68 ADMIN. L. REV. 661, 663–64 (2016) (discussing advances technology has made in more effect notice-and-comment process to enhance the democratic function of such processes to notify and receive input from all stakeholders affected by agency action).

252. *E.g., Ams. for Clean Energy*, 864 F.3d at 730 (including exclusions such as, include “supply-side factors” would help to bring clarity before an interpretation was challenged and a court would step in).

253. 42 U.S.C. § 7545(o)(9). While this section only made small refiners eligible for a waiver, there should also be more eligibility requirements and clearer eligibility requirements within a waiver. Such criteria determine a threshold as to who could potentially receive the waiver.

254. MONT. CODE ANN. § 69-3-2004(11) (2019).

255. Voegelé, *supra* note 157.

be used in this manner.²⁵⁶ Procedural and substantive limits in the legislation are practically nonexistent.²⁵⁷ “Disproportionate economic hardship” is undefined, and absolutely no criteria or examples are given to the agency to interpret the provision.²⁵⁸ While the initial blanket exemption ended in 2010, the extension granted to petitioners have no time limits or transitional period.²⁵⁹

The continued existence of the small refinery exemption is even more troubling given that there are arguably no compelling policy reasons today for providing exemptions to small refiners. Declines in refineries have leveled off significantly in recent years, and many refineries are now enjoying record output and profits.²⁶⁰ In light of these changes and the recent abuses of the small refinery exemption, the exemption and its many troubles must be eliminated.

3. Legislating Judicial Deference for Use of Waiver Authority

The RFS and its effectiveness would be further strengthened with statutory language instructing courts not to give broad deference to the EPA in its grant of waivers. *Chevron* deference is improper for RFS waivers because waiver authority implicates greater Constitutional concerns. Use of waiver is not the same as agency rulemaking or legislative interpretation because an agency has the power to re-write legislation. When an executive agency acts in a legislative capacity, deference is not enough to enforce the principle of separation of powers. A default pattern collectively suggested by Barron, Rakoff, and Black could be applied to the waiver provisions in the RFS, yielding more desirable outcomes:

- i. Deference should be afforded to the requirements Congress established, not the agency action taken to rewrite those requirements. When Congress writes express standards into law, agency action should not be accorded deference under *Chevron*.²⁶¹

256. *Id.*

257. 42 U.S.C. § 7545(o)(9).

258. *Id.* § 7545(o)(9)(B).

259. Compare *id.* § 7545(o)(7)(E)(ii) (describing that bio-mass based diesel waivers are limited to 60-day periods) with *id.* § 7545(o)(9) (“A small refinery may at any time petition the Administrator for an extension of the exemption under subparagraph (A) for the reason of disproportionate economic hardship.”).

260. Andrews et al., *supra* note 139, at 17–18 (explaining that changes in refineries, profits, and industry consolidations indicate circumstances that initially existed to justify the small refinery exemption are no longer relevant).

261. Baron & Rakoff, *supra* note 168, at 331–32.

- ii. The agency must show why use of the waiver better satisfies the statutory purpose under current circumstances than adherence to the Congressional rules—with deference to the initial rules.²⁶²
- iii. The scope of an agency’s authority will not be subject to its reasonable interpretation. The judiciary will review questions of scope independently.²⁶³

This default pattern has the effect of placing more pressure on both the Executive and Congress to seek explicit, specific, and clear waiver provisions. A re-draft of the general waiver and the cellulosic biofuel waiver would be required to pass muster under an analysis that is deferential to the initial Congressional requirements.

B. Restructuring the RIN Credit System to Deter Strategic Behavior

Congress should amend the statutory language governing the RIN credit system to better deter industry abuses within the system. Among other games, oil companies currently buy credits and hold them, manipulating market demand for ethanol. This inconsistency in demand has, in part, led to the closure of several advanced ethanol plants.²⁶⁴ Additionally, the current credit system is not effective at deterring blenders from buying ethanol, earning the credit, and then selling the ethanol to other blenders as a way of avoiding RFS obligations. One way of reducing these problems would be to make credits available only after blending has taken place and to limit the lifespan of credits to a year. Changing when credits are generated would effectively deter parties from “selling along.” Capping the lifespan of credits would limit the ability of companies to game the market through stockpiling credits. Both options would keep parties from skirting their RFS obligations using RIN.

C. Encourage Cross Investment and Ethanol Crop Diversification

To fully advance the general goals of the RFS, Congress should strengthen market incentives for investments in advanced biofuels. Corn-

262. *Id.* at 332.

263. Black, *supra* note 170, at 642 (referring to the importance of a “scope analysis” to narrowly construe delegations of authority given by Congress to administrative agencies).

264. *See, e.g., More on Why DuPont Closed its Cellulosic Ethanol Plant* (Nov. 22, 2017), <https://www.proag.com/news/dupont-closed-cellulosic-ethanol-plant/> (explaining that the DowDuPont cellulosic ethanol plant closed because it was not economically feasible).

based ethanol's dominance is primarily driven by its long history of subsidies. The most rational critiques of ethanol fuel are a result of the monoculture system which has developed in the U.S. One study has concluded that corn may not be viable in the future as a crop, due to the unavoidable climate change that is already taking place.²⁶⁵ Generally, relying on a single crop as a fuel feedstock limits the ability of ethanol to strengthen U.S. fuel security. To deal with the issue of mono-cropping, Congress should revise existing legislation to specifically incentivize cross-investment for advanced ethanol and alternative crop growth.

Some critics of advanced ethanol argue that the industry currently gets more than enough support from the federal government.²⁶⁶ While it is true that advanced ethanol receives sizable government subsidies, they are small compared to the aggregate incentives the corn-based ethanol industry has received. Corn subsidies need to be diversified from corn toward advanced ethanol and to other sugar-rich crops that can produce more ethanol on less acreage.²⁶⁷ Using special incentives to drive the transition from a monocrop toward other types of ethanol will create valuable diversification within the ethanol industry.

V. CONCLUSION

Although the RFS is more dysfunctional today than ever, there are relatively straightforward ways to significantly address its woes and transform it into an effective and valuable renewable energy policy. Statutory changes that clearly and specifically limit the EPA's waiver discretion, address problems with the RIN credit system, and incentivize more investments in non-corn ethanol technologies could do much to improve the RFS and advance its primary goals. There is substantial evidence that ethanol is a viable and clean automotive fuel source for the U.S. The RFS could return to its original purpose if the general and advanced biofuel waivers are limited; EPA discretion is statutorily cabined; the small refinery waiver is eliminated; stringent review is statutorily implemented; the credit system is narrowed; and non-corn and advanced ethanol is correctly subsidized and incentivized. With the implementation of these proposals, the RFS can be

265. See generally Michelle Tigchelaar et al., *Future Warming Increases Probability of Globally Synchronized Maize Production Shocks*, 115 PROC. NAT'L ACAD. SCI. 6644 (2018) (examining future yields of corn).

266. Jonathan Foley, *It's Time to Rethink America's Corn System* (Mar. 5, 2013), <https://www.scientificamerican.com/article/time-to-rethink-corn/>.

267. Al Fin, *Why Sugar Beets are Preferable to Corn for Ethanol Production* (Dec. 16, 2010), <https://oilprice.com/Alternative-Energy/Biofuels/Why-Sugar-Beets-Are-Preferable-To-Corn-For-Ethanol-Production.html>.

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