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To understand the Renewable Fuels Standard (RFS) and its impacts, we must start with the problem it was developed to solve. The motivation behind the Energy Independence and Security Act (EISA) of 2007, which included today's RFS, was to cut U.S. oil use. Cutting oil use remains as urgent a priority now as it was then. The Union of Concerned Scientists has developed a plan to cut projected U.S. oil use in half over the next twenty years by moving forward aggressively on oil saving technologies including efficiency and innovative technologies such as better biofuels. The Renewable Fuel Standard is a key existing policy to cut oil use and reduce greenhouse gas (GHG) emissions based on smart goals of (1) producing more biofuels; (2) improving biofuels; and (3) moving beyond food as a resource to produce biofuels. Significant environmental problems caused by the expansion of food based fuels limit their potential as an oil saving and climate mitigation solution, and realizing the goals in the RFS requires the large scale commercialization of cellulosic biofuels. This commercialization is proceeding at a slower rate than anticipated when the RFS was developed, so the U.S. Environmental Protection Agency (EPA) will need to be flexible, and adapt their administration of the policy in light of changing circumstances. However, Congress provided EPA with the necessary flexibility, so legislative changes are not needed. In fact legislative changes would be counterproductive, as they would undermine, or at the very least, delay, the commercial scale-up of cellulosic biofuels which are required to realize the goals of the RFS.

Thank you for the opportunity to testify about the important challenges facing biofuels policy today. My name is Jeremy Martin. I am a senior scientist working on biofuels policy at the Union of Concerned Scientists (UCS). UCS is the nation's leading science-based nonprofit putting rigorous, independent science to work to solve our planet's most pressing problems.

I have been asked to address the environmental impacts of the Renewable Fuel Standard (RFS). But we can't look at the RFS in a vacuum; we need to understand what challenge the RFS was developed to solve.

The motivation behind the Energy Independence and Security Act (EISA) of 2007, which included today's RFS, was to cut U.S. oil use. Cutting oil use remains as urgent a priority now as it was then. Despite increased domestic production and new unconventional oil resources, the economic, environmental, security and climate problems caused by our oil use have not decreased during the 5 years since the passage of the RFS. Indeed oil prices remain high and unstable, oil producing regions remain critical security concerns, oil spills continue, and the costs of extreme weather events made more damaging by climate change continue to mount. So the need to move forward on strategies to reduce oil use remains critically important.

The Union of Concerned Scientists has developed a plan to cut projected U.S. oil use in half over the next twenty years by moving forward aggressively on oil saving technologies in all oil using sectors[1]. Our plan starts with efficiency, but reaching our goal also requires innovation on better biofuels, electric vehicles, and smarter ways of doing business. No single technology or policy is adequate to make the progress we need, but by moving forward on all these areas we can make real progress on a challenge that is as urgent today as it was 5 years ago.

The Renewable Fuel Standard is a key existing policy to cut oil use by expanding the use of biofuels. Because of the RFS and other policies, the gasoline we use in the country today already has almost 10%

[1] See the UCS Half the Oil plan, at halftheoil.org.

ethanol, primarily from corn. But neither gasoline nor corn ethanol is the fuel of the future. Cellulosic biofuels (made from waste products and environmentally friendly perennial grasses) will allow us to continue to expand the use of biofuels as an oil savings solution, without putting added pressure on food, water, or the climate. Smart implementation of the RFS, together with additional policies aimed at accelerating the commercialization of cellulosic biofuels, is key to the success of these efforts.

The goals of the RFS are smart goals

The RFS is based on 3 important and well-crafted goals:

- **More Biofuels**: Expanded production of clean biofuels, together with efficiency and other innovative technologies, can cut our consumption of oil, reducing the problems our oil use causes our economy, our security and our climate.
- **Better Biofuels**: The RFS is not static; rather, it requires the biofuels industry to get cleaner over time, so that the biofuels called for in the RFS in future years are different, and cleaner, than those of today. Moreover, the RFS is based on full lifecycle impact of biofuel production, including the impacts that large-scale biofuel use has on agriculture and land use change in the United States and around the world.
- **Beyond Food**: The RFS recognizes the limited potential to use food as fuel. For this reason the big targets - the 36 billion gallon by 2022 headline number - relies on cellulosic biofuel, made from non-food biomass, more than it relies on corn based ethanol.

The challenges caused by today's biofuels

Despite having smart goals, it is important to acknowledge that neither the RFS, nor its implementation to date, have been perfect. The rapid expansion of corn ethanol over the last decade, under a variety of policies culminating in the EISA 2007 adjustments to the RFS, along with the expansion of vegetable oil-based biodiesel, primarily in the European Union, has profoundly altered global agricultural markets.

These changes are contributing to higher food prices in the U.S. and the developing world, accelerating deforestation, and exacerbating other problems like water pollution caused by corn farming.

The implementation of the RFS to date has had at best a limited positive impact on greenhouse gas (GHG) emissions for two reasons. First, the conventional biofuels the RFS has brought to market at higher volumes have primarily been food-based biofuels such as corn ethanol and biodiesel made from soybean oil. These offer limited direct GHG benefits, and when their indirect impact on the U.S. and global agricultural system is considered, the benefits are further reduced. Second, because the availability of corn and vegetable oil to make these fuels is limited, the opportunity to expand the use of these resources to a much larger scale is also limited. Moreover, diverting an ever larger share of agricultural output to energy markets would have serious negative impacts on both food markets, and on agricultural expansion and deforestation, and this limits the GHG benefits we can obtain from these fuels.

The completeness and accuracy of lifecycle analysis is essential to ensuring the RFS delivers on its climate mitigation potential. And because biofuels have such a profound impact on agricultural markets, including indirect land use change in the lifecycle is necessary to getting an accurate assessment. This is by its nature a complex analysis, and we have offered EPA numerous technical suggestions over the last several years, but on balance EPA has done much to advance the state of the art in this field. One area that merits special attention going forward is the market mediated impacts of volume targets. In short, the impact of using 5 billion bushels of corn to make fuel is materially different than using 7, even if the feedstock remain the same. Relying on the same lifecycle assessment will miss this important distinction. Using the tools EPA has developed for individual pathways will provide an analytical basis for deciding when expanded mandates will meet the GHG thresholds and further the goals of the RFS, and when they will instead lead to counterproductive fuel shuffling, for example promoting circular trade in ethanol with Brazil. We address this in more detail in Appendix B.

The last five years have brought into much clearer focus the implications of biofuels policy for food markets in the U.S. and worldwide. Policy-driven demand for biofuels is now a top-line concern in global agricultural markets, rather than a footnote. The recent Agricultural Outlook from the Organization for Economic Co-operation and Development (OECD) and Food and Agriculture Organization of the United Nations (FAO) highlights that decisions EPA has to make on seemingly obscure RFS implementation details will be major drivers for some of the world's largest commodities (corn, sugar, vegetable oil)[2]. Making sure these decisions are based on a sound analysis of these implications is the focus of our recent comments to EPA on the 2013 volume rule[3], and we anticipate continued engagement along these lines going forward.

While the impact of the RFS on corn prices has been a primary focus in recent years, as we look forward the impact on vegetable oil markets is also becoming increasingly relevant. Demand for biodiesel feedstocks like vegetable oils and animal fats moves through the global markets in complex ways, because the oils and fats themselves are not the most valuable product driving either soybean farming or meat production. But when you look at the trade flows on a global scale, it is clear that the source of extra oils on the world markets is palm oil. This means that, at the end of the day, excessive expansion of fuels made from oils and fats is accelerating the devastation caused by the expansion of palm oil plantations onto peat forests in Southeast Asia. These issues are discussed further in our report on vegetable oils and deforestation[4], and in our recent comments to the EPA.

Finally, it is worth noting the impact of the expansion of corn ethanol has had on water pollution. As demand for ethanol has increased we have seen larger and larger plantings of corn, intensifying the

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[2] Organization for Economic Co-operation and Development (OECD) and Food and Agriculture Organization of the United Nations (FAO) Agricultural Outlook 2012-2021. 2012a. Increased productivity and a more sustainable food system will improve global food security. Online at http://www.oecd.org/site/oecd-faoagriculturaloutlook/.

[3] Union of Concerned Scientists. 2013. Comments to EPA's Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards. Online at http://www.ucsusa.org/assets/documents/clean_vehicles/UCS-Comments-on-RFS-2013-Volumes.pdf

[4] Union of Concerned Scientists. 2012. Recipes for success: solutions for deforestation-free vegetable oils. Online at http://www.ucsusa.org/assets/documents/global_warming/Recipes-for-Success.pdf

pollution of surface and ground water across the corn belt, and down the Mississippi into the Gulf of Mexico and in the Chesapeake Bay. These issues are discussed in our report "The Energy-Water Collision: Corn Ethanol's Threat to Water Resources[5]".

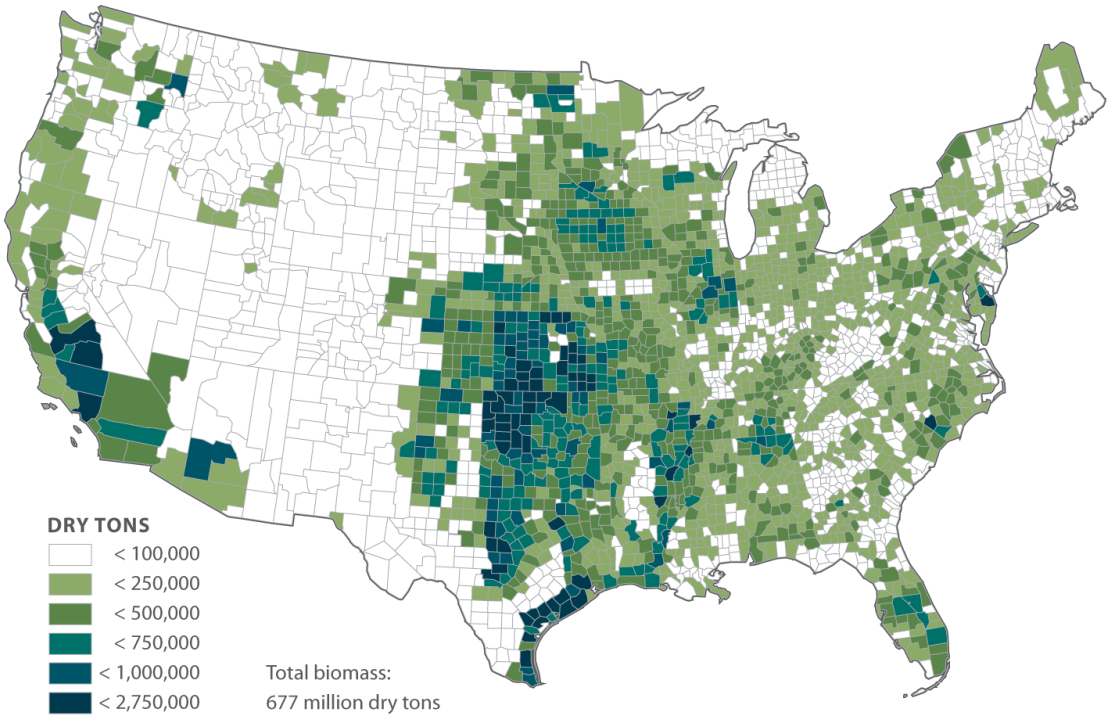
For all these reasons, the path forward on the RFS has to be different than the path we have been on. Further expansion of corn ethanol, or a large shift toward biodiesel, is not a viable path forward. But that doesn't mean we should abandon the goals of the RFS and lock in a future of 90% gasoline and 10% corn ethanol.

The promise of biomass based fuels

In contrast to the challenges of food based fuels, the opportunities to expand non-food cellulosic biofuels are substantial. According to our recent analysis[6], the domestic resources to produce biomass are far in excess of what is required to meet the 16 billion gallon target for cellulosic biofuels in 2022.

[5] Union of Concerned Scientists. 2011. The Energy-Water Collision: Corn Ethanol's Threat to Water Resources. Online at http://www.ucsusa.org/assets/documents/clean_energy/ew3/corn-ethanol-and-water-quality.pdf

[6] Union of Concerned Scientists (UCS). 2012. The promise of biomass: clean power and fuel – if handled right. Online at *http://www.ucsusa.org/assets/documents/clean_vehicles/Biomass-Resource-Assessment.pdf*.



Cellulosic biofuel technology can turn waste materials diverted from landfills, or agricultural residues like corn stalks, into valuable fuel that will displace gasoline without increasing the use of corn, vegetable oil or other food-based feedstocks. Beyond these waste resources, environmentally friendly perennial grasses can also provide large quantities of biofuel, and in so doing can expand the opportunities for farmers to produce biofuels feedstocks beyond the corn belt to many more states. Moreover, expanding the role of perennial grasses in our agricultural system can offer important environmental benefits. Perennial grasses reduce erosion and pollution from fertilizer and enhance fertility by sequestering carbon in the soil. The expansion of corn ethanol has expanded and intensified corn production, which is harming water quality in the Midwest, the Gulf of Mexico and the Chesapeake Bay, but producing the same fuel with perennial grass feedstocks can improve water quality and turn biofuels from a problem into a solution. Our agricultural system would benefit from a larger role for perennial grasses and smaller role for corn and soybeans, and shifting our biofuels policies away from food based fuels and toward biomass based fuels can support a transition that is good for our agricultural system, good for our transportation system and good for our climate.

The first commercial scale cellulosic biofuel facilities are starting up now in Florida and Mississippi, and several more are under construction in Iowa and Kansas. This is a major milestone, and it would not have happened without the RFS. Each new cellulosic facility creates jobs in local communities as well as clean fuel and valuable coproducts like renewable electricity. When the cellulosic biofuel industry is at the scale targeted by the RFS, there will be more than one hundred new facilities in communities around the country.

Cellulosic biofuel feedstocks require fewer inputs than corn to produce, and the process to convert them into fuel can also run with very low fossil fuel inputs or GHG emissions. The net result is very low lifecycle GHG emissions. But the real reason cellulosic biofuels hold so much promise is that the scale of the resources we have to produce them is also very large, which is why it makes sense that the majority of the growth of the RFS between 2013 and 2022 targets cellulosic biofuels. Recovering waste oils for use as biodiesel can also produce a very low GHG lifecycle, but the scale of the waste oil resources is limited, so the total GHG mitigation opportunity is also relatively small. To realize the full GHG mitigation potential of the RFS requires commercial scale cellulosic biofuel production.

While the opportunities and the progress on cellulosic biofuels are encouraging, the commercial scale-up is delayed compared to the schedule described in the RFS. It will take time to scale up a new fuel industry, as it did for both the oil and corn ethanol industries. And the economic headwinds of the last few years didn't help. But regardless of the reason, the gap between the schedule laid out in 2007 and the actual scale-up means EPA needs to adapt their administration of the RFS going forward to the circumstances we face today.

Whether to repeal, reform or preserve the RFS

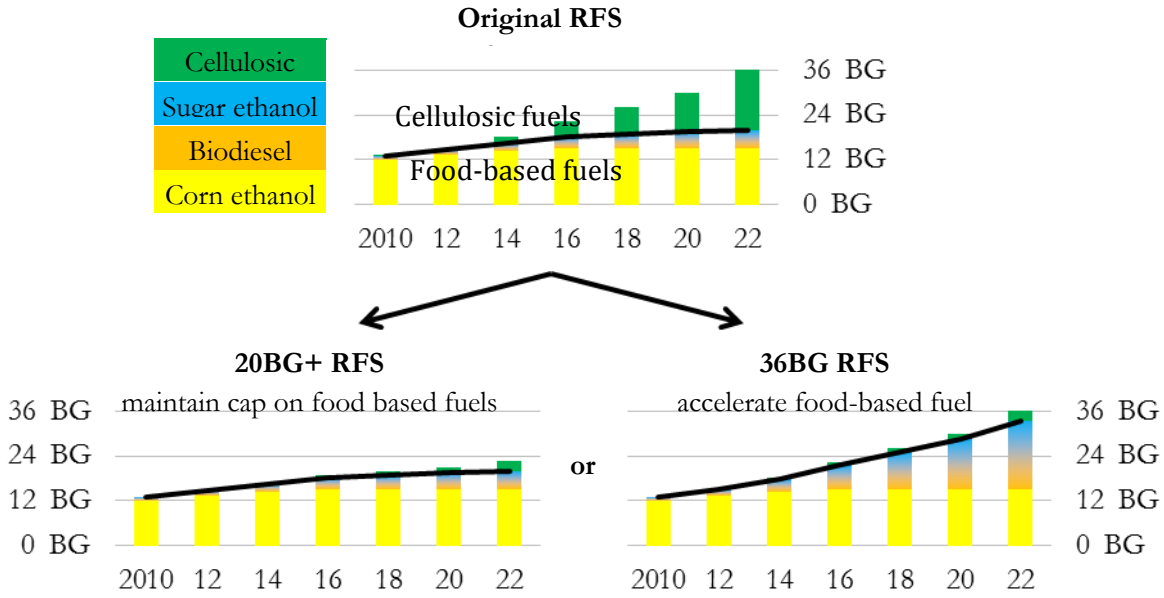
The question of whether to repeal, reform or protect the RFS is central to the current debate, and for the reasons I have already articulated we believe the RFS is an important policy tool and should remain in place. With regard to reform, the question is more subtle, but ultimately we are not in favor of any

legislative changes to the RFS at this time. There are three main reasons we come to this conclusion: first, rolling back the corn ethanol mandates in the RFS will not solve the problems the RFS and other policies have caused, second, revising the RFS will chill investment in cellulosic biofuels right as the first facilities are coming on line, and third, the RFS has the built-in flexibility needed for EPA to address the real challenges facing implementation through an administrative process, while preserving the framework that will keep the biofuels industry moving toward necessary oil savings and climate solutions.

- **Reversing the RFS will not solve the problem**: Policies – including not just the RFS, but tax policy, trade policy, agricultural policy, and policy on fuel additives - certainly played a major role in creating theproblems associated with the rapid scaleup of corn ethanol in the last decade. However, reversing course on the RFS will not solve these problems. By most independent analyses, 10% ethanol blends are here to stay, with or without the RFS. So failing to deliver on the full vision of the RFS means we stay where we are, with corn ethanol and gasoline, but with no prospect of moving to cleaner biofuels going forward. Rather than locking in the status quo, the smart choice is to keep moving forward on the longer-term goals of the RFS, the goals of better biofuels that go beyond food.
- **Amending the RFS:** Amending the RFS might seem to offer the opportunity to keep what works and fix what is broken, but the truth is more complicated. First of all, the nested structure of the RFS, and the flexibility obligated parties have to comply using different fuels, links together different categories such that changing or eliminating parts of the policy governing conventional biofuels will also have a major impact on investment in advanced and cellulosic biofuel production. For example removing the conventional mandate while keeping in place the advanced mandate will be more likely to encourage a counterproductive circular trade with Brazil than it will to support development of new advanced biofuels production in the U.S.. And even a well-crafted revision will put a hold on investments in advanced and cellulosic biofuels as the

legislative and regulatory process is underway, which is especially ill-timed given the critical phase the cellulosic biofuel industry is in today as it begins commercial scale production.

- **The RFS has the flexibility needed to tackle today's challenges:** The RFS was designed with a great deal of flexibility, especially with regard to the second phase of the policy that shifts from expansion of existing biofuels (corn ethanol, biodiesel and sugarcane ethanol) to non-food based cellulosic biofuels. Many critical analyses of the RFS are based on the assumption that EPA will ignore the flexibility Congress provided, and will expand mandates from just over 15 billion gallons (BG) in 2012 to more than 20 in 2015 and 36 in 2022. EPA has the clear authority to reduce the rate of growth between now and 2015 by more than half, and to reduce the 2022 target from 36 billion gallons to 20 billion gallons plus whatever quantity of cellulosic biofuel is in production (20BG+ RFS in figure below). The challenges of implementation will be substantially reduced if EPA adopts this more gradual approach, which we have shown schematically below, and describe in more detail in Appendix A below.



Clearly the EPA needs to be more aggressive than it has been in using the flexibility it has under the law to address the delay in commercial scale-up of cellulosic biofuels. EPA should also take a more flexible approach in other areas. We argued last year that the drought was an instance that

merited a more flexible approach (see Appendix C for details) and other challenges including the blend wall may also require a flexibility that keeps the policy moving in the right direction, but adapts to reflect the current constraints in agricultural markets, the vehicle fleet, and the fueling infrastructure.

A Smart Path Forward

I started my testimony highlighting the role of biofuels as part of comprehensive strategy to cut projected oil use in half over the next twenty years, and despite the challenges facing the implementation of the policy in the few years, the scale-up of cellulosic biofuels and the success of the RFS remain vital to making progress on these important goals.

The next step toward delivering on the potential of the RFS is for EPA to start using the flexibility Congress gave them in the administration of the RFS. The magnitude of the cellulosic shortfall was small in the last few years, but it grows rapidly from 2013 forward. In light of tight markets for agricultural commodities – not just corn but sugar and vegetable oil as well – and the infrastructure issues like the blend wall, there are major challenges coming by 2015 that will require EPA to show more flexibility than they have to date.

We are urging EPA to seize the opportunity, and to do a significant rulemaking, looking not just at annual volume levels, but at resetting expectations for the next phase of the policy, from 2016 to 2022. Working with stakeholders, and in concert with the Department of Energy (DOE) and the United States Department of Agriculture (USDA), EPA should develop a roadmap that delivers on the important goals of the RFS, but is realistic about the competing uses of agricultural commodities, the rate at which cellulosic production capacity can scale up, and constraints in our vehicle and fueling infrastructure.

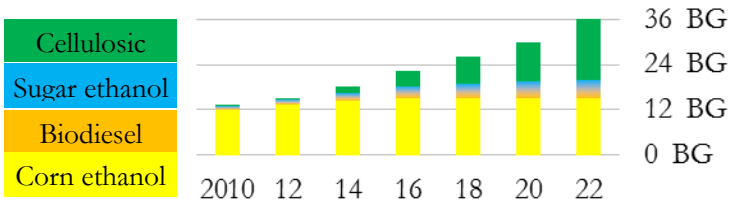
Additional policies can certainly help us move forward with the solutions we need to meet the goals of the RFS and the broader goal of cutting oil use. In the context of biofuels, it is clear that policies supporting investment in cellulosic biofuel production capacity will speed the realization of these goals. Other

policies that support the development of biomass feedstocks, and support innovation in new fuels and technologies can also help.

We are not moving forward as fast as we hoped to be in 2007, but the RFS is still pointing us in the right direction. To keep moving forward we need to provide the regulatory stability that will protect the early investments in the advanced biofuels industry, and support further investment to bring the technology to larger scale.

Appendix A: A flexible path forward for RFS Implementation

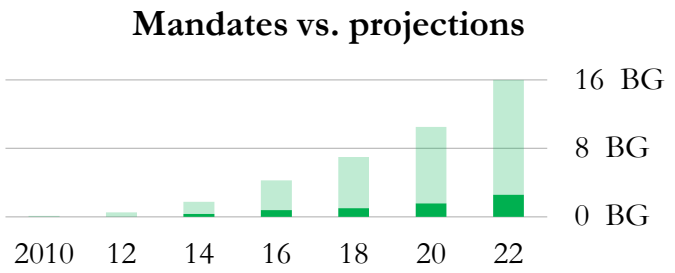
The RFS is a more flexible policy than many people appreciate, and Congress was smart to give EPA the authority to adapt the second phase of the policy to changing circumstances, and move us forward in a pragmatic way. Now EPA must use that flexibility and provide more clarity on the path ahead. To start with, EPA should acknowledge that 36 billion gallons (BG) is no longer a realistic target for 2022.



In fact, a careful reading of the RFS reveals that it not really a 36 billion mandate for 2022 at all. It is more accurately described as a mandate for 20 billion gallons, plus whatever level of cellulosic biofuel production is actually achieved, up to a maximum of 16 billion gallons (call it a 20BG+ RFS for short). Of this, 15 billion gallons comes from conventional biofuels like corn ethanol, which is already built out and for the most part locked into fuel markets. There is also a mandate for non-cellulosic advanced biofuels, fuels like biodiesel, sugarcane ethanol, and some newcomers like ethanol from grain sorghum. This mandate grows steadily to 5 billion gallons in 2022, which may sound modest compared to 15 billion gallons of corn ethanol, but is actually a very rapid expansion from where these fuels are now. So that adds up to 20 billion gallons. But the largest part of future mandate growth was supposed to come from cellulosic biofuels.

However, the scale-up of cellulosic biofuels is not happening at the rate anticipated in the original RFS schedule. Even with robust investment and steady growth, cellulosic biofuel production capacity in 2022

will probably be closer to 2 billion gallons than 16 BG (projection data in the figure below is from the Energy Information Administration's 2012 Annual Energy Outlook[7]).



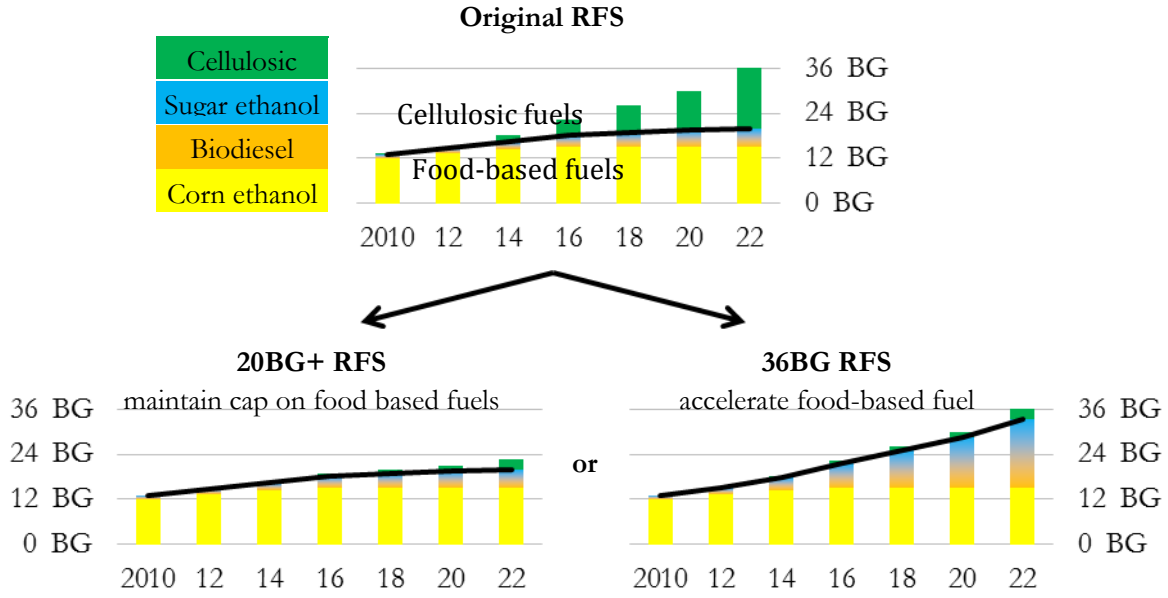
The RFS anticipated this possibility, and requires the EPA to adjust the mandates annually in line with projected capacity, a requirement reaffirmed in the recent court ruling[8]. So in total the real minimum mandate for 2022 is likely to be closer to 22 billion gallons than 36, and it will be 2030 before we are likely to see a full 36 billion gallon mandate reached.

EPA has an important decision to make

EPA has the authority to backfill this cellulosic shortfall in part or in full, by expanding the mandates for biodiesel, sugarcane ethanol and other non-cellulosic advanced biofuels. This is described schematically in the figure below. On the left is the path forward if EPA adjusts the advanced and conventional mandates by the same amount as the cellulosic mandate. This maintains the same growth rate for non-cellulosic advanced biofuels, and the same impact on food markets, as in the original RFS schedule. But without 16 billion gallons of cellulosic biofuel, the 20BG+ RFS totals in 2022 will be closer to 22 billion gallons than 36. To reach 36 billion gallons will likely take at least until 2030. On the right is the trajectory if EPA does not adjust the advanced mandate with the cellulosic mandate, and tries to stay on track for 36 billion in 2022 (the 36BG RFS). To accomplish this requires the food based advanced

[7] Energy Information Administration. 2012. Annual Energy Outlook 2012.
[8] American Petroleum Institute v. U.S. Environmental Protection Agency, 12-1139, U.S. Court of Appeals for the District of Columbia Circuit (Washington).

biofuels like sugar ethanol and vegetable oil based biodiesel to grow to more than 18 billion gallons, instead of the 5 billion gallons in the original schedule.



Doing this might seem to keep us closer to the original schedule, but it comes at the expense of dramatically expanding the use of food based fuels. Our analysis[9], and that of agricultural economists from Illinois[10] to the OECD[11], demonstrates that the actual consequences of trying to make up for the missing cellulosic biofuels with biodiesel or sugarcane ethanol will lead to unintended and counterproductive outcomes. These include a massive circular ethanol trade with Brazil, exchanging billions of gallons of our corn ethanol for Brazilian sugar ethanol, and mandates for biodiesel that exceed available resources in the U.S., and, indirectly, cause increases in production of palm oil in Southeast Asia that would accelerate deforestation with emissions that undermine the goals of the RFS. Trying to stay on the original schedule without the needed cellulosic biofuel production capacity also creates major problems for our vehicle and fueling infrastructure.

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[9] For more details, see our comments on U.S. Environmental Protection Agency's "Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards" 78 Fed. Reg. 9282 (February 21, 2013) [EPA-HQ-OAR-2012-0546]

[10] Department of Agricultural and Consumer Economics, University of Illinois Urbana-Champaign. 2013. Domestic Biodiesel versus Brazilian Ethanol Revisited. Online at *http://farmdocdaily.illinois.edu/2013/01/domestic-biodiesel-versus-brazilian.html*.

[11] OECD/FAO Op. cit.

Appendix B: Lifecycle Analysis

The EPA has done a great deal to advance the state of the art in this field. There were a number of specific areas in which my own expert judgment differed from EPA's, on which we submitted comments during the relevant rulemaking processes. But on balance it is a great strength of the RFS that eligibility is based on a rigorous assessment of the full lifecycle, including significant indirect sources of emissions caused by land use change.

In terms of future analysis, EPA needs to apply the same rigorous lifecycle thinking to the impact of setting volume targets that it has to individual fuel pathways. Our analysis suggests that expanding the mandate for non-cellulosic advanced biofuel would not deliver the 50% GHG reductions required for the advanced mandate because of market mediated effects. Specifically, under present market conditions increased near term use of Brazilian ethanol in the U.S. will likely come at the cost of decreased use of sugarcane ethanol in Brazil, as Brazilian consumers switch to U.S. corn ethanol or gasoline. Likewise, increased U.S. use of vegetable oil based biodiesel is likely to have more impact on palm oil production in Southeast Asia than it does on soybean production in the U.S., as vegetable oil consumers around the world adjust to changing prices and availability. In either case the 50% GHG threshold required for advanced biofuels is not likely to be met if the mandates are expanded dramatically. EPA should take these factors into consideration when making decisions about how aggressively to expand the mandates, and only move forward when the required thresholds for GHG reductions are met[12].

Because the lifecycle analysis process is time consuming and requires extensive input from stakeholders and experts, we suggest EPA conduct a thorough analysis and rulemaking in 2013 and 2014, and use that analysis as the basis for setting concrete criteria that would be used to decide on subsequent annual volume determinations in the 2016 to 2022 timeframe. Proving this type of forward looking guidance

[12] See Union of Concerned Scientists. 2013. Comments to EPA's Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards. Online at, http://www.ucsusa.org/assets/documents/clean_vehicles/UCS-Comments-on-RFS-2013-Volumes.pdf

tied to measurable market factors (in agriculture, trade, fuel production and infrastructure) would provide all the stakeholders affected by the RFS more visibility to make their own plans.

Appendix C: 2012 corn ethanol waiver request

UCS submitted comments urging EPA to adjust the mandate for 2013 in light of the drought, and we disagreed with their decision not to grant any waiver[13]. The economic analysis EPA relied on for their decision found that at blending levels up to 10% ethanol (E10), changes in the mandate would not substantially change the actual amount of ethanol production, and therefore would not have resulted in significant relief for other users of corn. By and large we agree with this analysis, and several independent analysts came to similar conclusions. However, while the opportunity to provide relief was limited, the analysis suggested it was not insignificant. In light of this we encouraged EPA to make a modest 15% adjustment to the 2013 mandate. We argued that such an adjustment would have reduced the risk that the mandate hinders the market-based rationing of the diminished corn crop in 2013. However, we argued against a larger waiver, since larger adjustments wouldn't have provided additional relief, and would destabilize the RFS.

The analysis that EPA used to reach their decision to reject the 2012 waiver requests was particular to the circumstance in the ethanol market that year. Two key factors, the incentive of blenders to blend up to E10, even in the absence of a binding mandate, and the presence of a large stock of carry-forward RINs from over compliance in previous years provided compelling reason to doubt that a waiver would provide relief. Perhaps the most compelling evidence came in the form of the very low RIN prices for conventional ethanol that prevailed at that time, suggesting that even at those low prices obligated parties were not interested in avoiding their compliance obligation.

[13] See our comments to US Environmental Protection Agency's "Request for Comment on Letters Seeking a Waiver of the Renewable Fuel Standard" 77 Fed. Reg. 52715 (August 30, 2012) [EPA-HQOAR-2012-0632; FRL-9721-7]

The circumstances upon which EPA based its analysis in the 2012 waiver decision are unlikely to be repeated. The low RIN prices which prevailed at the time of the decision have given way to higher prices, which suggest that obligated parties would reduce ethanol use in the event of a waiver. This is to say that market conditions beyond E10 are different in important ways than they are with mandates below E10. The current RIN prices suggest that the RFS is starting to work as designed, to support the use of biofuel in excess of what would have occurred without the policy. This is a feature of the RFS design, rather than a bug. An implication of this feature is that under these circumstances EPA waivers will be expected to significantly alter fuel markets, which will give EPA the opportunity to provide relief in future crisis that their analysis suggested they lacked last year.

Because of the importance of biofuel policy to agricultural markets, it is imperative for EPA to be flexible in their implementation of the RFS, and to take into consideration of the impact of fuels policy to these markets. While last year's drought was a significant event, the decisions EPA has to make about the future course of the RFS are even more important. It is illustrative of the profound impact of EPA decisions on U.S. and the world agricultural markets that the OEC and FAO devoted an entire chapter of their global long-term agricultural outlook to biofuels, and about half of that to evaluating the future of the RFS[14].

[14] OECD/FAO Op. cit.