Written Testimony of:

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"The 21st Century Transportation Fuels Act"

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Good morning Chairman Shimkus, Ranking Member Tonko, and members of the Subcommittee. My name is Brooke Coleman. I am the Executive Director of the Advanced Biofuels Business Council.

The Advanced Biofuels Business Council (ABBC) represents worldwide leaders developing and commercializing next generation, advanced and cellulosic biofuels, ranging from cellulosic ethanol made from agricultural residues to advanced biofuels made from sustainable energy crops and municipal solid waste. Our members include those operating production facilities, those augmenting conventional biofuel plants with "bolt on" or efficiency technologies and those developing and deploying the technologies that make advanced biofuel production a commercial reality, including some of the largest cellulosic ethanol and advanced biofuel enzyme production facilities in the world.

Thank you for the opportunity to provide feedback on the "Discussion Draft: The 21st Century Transportation Fuels Act" released by the Committee in November. It certainly does make sense to start thinking about fuel energy issues over the next several decades. There are clear benefits of increasing the production and use of renewable fuels, optimizing fuel performance and improving market readiness for higher octane, lower carbon and cleaner fuel. In addition, we appreciate the recognition

that vehicle technology, supply chains, refueling infrastructure and fuel content must be synchronized to optimize outcomes for American consumers. While we support several provisions in the discussion draft as policy goals, other parts of the proposal undercut any potential for those provisions to promote innovation and growth in the American renewable fuels industry. Our concerns are detailed below.

1) **The Act, as currently constructed, would not grow the renewable fuels sector and could lead to renewable fuel use and air quality backsliding**

Global oil markets are (collusively) price-controlled by OPEC and are extremely consolidated and vertically integrated domestically. The absence of free market forces in the liquid fuel marketplace is a problem for the advanced biofuels industry (and other innovators) because non-competitive marketplaces do not properly facilitate and reward innovation. The absence of free market forces is also a problem for the 1st generation biofuels sector as price competitiveness does not necessarily lead to increased demand, which in turn dampens biofuel industry growth and employment.

At its core, the proposal would replace the Renewable Fuel Standard (RFS) with an octane standard. In theory, renewable fuels like ethanol are in the best position to succeed under an octane standard because ethanol is (by far) the cheapest source of octane available today. In practice, and unfortunately, it is in the oil industry's long-term financial interest to marginalize competition and buy (petroleum-based) octane enhancers from themselves, even if it means lower downstream profits in the immediate term. Replacing the RFS with an octane standard removes the legal requirement to use renewable octane while overlaying a massive new (market control) incentive for the oil industry to figure out how to add octane to gasoline *without* relying on renewable fuels.

If history is any indication, the oil industry will go to great lengths to avoid using renewable fuels. Ethanol was in the best position to benefit from the 2.0% oxygen standard required by the Clean Air Act Amendments of 1990 to reduce harmful tailpipe emissions. Instead, the oil industry chose to

reform natural gas into a new oxygen-containing additive called MTBE, which saturated 85 percent of the market for oxygenates nationwide.[1] MTBE use turned out of the be a national environmental disaster, polluting thousands of public and private drinking water aquifers in dozens of states. Oil companies knew of the drinking water risks of using MTBE but used the chemical anyway for obvious reasons: to avoid using renewable fuels.[2]

As instructive as MTBE history is, there is perhaps no better example than current market dynamics. Ethanol is trading at roughly $1.24 per gallon against a wholesale gasoline price of roughly $1.45. Ethanol sells at an even steeper discount to non-ethanol octane enhancers, as evidenced by the fact that gasoline without ethanol (E0) is at least ~40 cents per gallon more expensive than ethanol blends. And yet, the demand for ethanol has not increased in response to its price advantages.

The oil industry claims that it cannot increase ethanol use due to regulatory and infrastructural constraints. This is untrue. E15 is approved for all 2001 and newer automobiles, representing roughly 90 percent of the vehicles on the road today. E15 has fueled several billion consumer miles without any issues. It is sold in 30 states today. And yet, its volumetric share of market is increasing only where policy and ancillary programs drive it. The real issue is the oil industry does not want to facilitate more ethanol use – irrespective of price – to preserve its control over the fuel gallon and the gas pump. The 21st Century Transportation Fuels Act's proposed shift to non-renewable octane would leave the renewable fuels industry 100 percent exposed to the oil industry's desire to control the entire gallon of fuel.

The situation is more concerning when ones considers the actual octane standard – 95 RON – being proposed. The American Fuel & Petrochemical Manufacturers' (AFPM) President and CEO Chet Thompson confirmed before the U.S. House Energy and Commerce Subcommittee on the Environment earlier this year that the oil industry could meet a 95 RON standard without more ethanol using today's

[1] https://thehill.com/opinion/energy-environment/386543-repeating-history-with-octane-biofuel-standards-is-huge-mistake
[2] http://articles.latimes.com/2002/apr/17/local/me-mtbe17.

technology. A recent EIA report was even more direct, concluding that oil refiners would have "no problem" meeting a 95 RON standard without additional ethanol.[3] Specifically, the report states that making higher octane gasoline at the refinery "is well within the range of normal operations;" and, "…existing domestic refineries should have no problem meeting the (95 RON) requirements;" and, even later in the phase-in period in 2027, refiners "…appear to be able to meet the increased 2027 octane requirements with minor operational adjustments. No industry-wide capital intensive projects would be needed to meet the 2027 requirements."[4]

When the oil industry avoids using more biofuels to meet octane standards – or worse, backs out current use – it must increase aromatics content in gasoline. Independent vehicle emissions testing at UC-Riverside showed that higher concentrations of aromatics increase tailpipe emissions of particulate matter (PM) and black carbon (BC).[5] Ethanol is a direct substitute for aromatics in gasoline and keeps aromatic fractions lower. The study concluded: "[o]ur results show that reduced aromatic concentrations are associated with reduced PM mass and (more importantly) reduced BC from [direct injection] vehicles. Thus, increasing the ethanol fraction in gasoline could help to reduce climate and human health impacts attributed to particle emissions from GDI vehicles." Opening the door for oil companies to avoid aromatics displacement very clearly has serious air quality risks.

2) The Act, as currently constructed, would increase gas prices

It is difficult to quantify the gas price impacts of a hypothetical fuel scenario without access to the real refinery costs of avoiding ethanol use in part or all together. However, it is very clear that the 21st Century Transportation Fuels Act would increase gas prices.

[3] https://www.eia.gov/analysis/octanestudy/pdf/phase2.pdf.
[4] https://www.eia.gov/analysis/octanestudy/pdf/phase2.pdf.
[5] https://www.greencarcongress.com/2015/08/20150818-ucr.html

First, ethanol is ~ 20 cents per gallon cheaper than wholesale gasoline and is more than 20 cents per gallon cheaper than alternative, petroleum-based octane enhancers. The price impact of ethanol is plainly evident when you compare the current average per-gallon prices of E85 ($2.02), E15 ($2.35), E10 ($2.45) and E0 gasoline without ethanol ($2.82).[6] The reason is simple – substitutes for ethanol are significantly more expensive than ethanol. It is true that oil companies could theoretically avoid increasing pump prices by using more ethanol. But as discussed in the previous section, this outcome would require the oil industry to act against its economic self-interest, which is not occurring in the marketplace today *with the RFS* and did not occur before the RFS was enacted when the federal government enforced a very similar "performance-based" oxygen standard.

3) The Act, as currently constructed, would increase carbon emissions

The RFS is – indirectly, to date – a renewable octane/cetane requirement. The 21st Century Transportation Fuels Act would phaseout the renewability requirement *and* the greenhouse gas (GHG) requirement contained in the RFS. As discussed, oil companies will use more petroleum additives instead of biofuels, because it's in their economic self-interest.

Substituting petroleum-based additives for biofuels in current or future markets will produce GHG backsliding because independent analysis confirms that most types of first- and second-generation biofuels reduce greenhouse gas emissions, in many cases by very large amounts. This includes analysis conducted by U.S. EPA, the California Air Resources Board (CARB), the U.S. Department of Energy, the U.S. Department of Agriculture and top energy labs such as Argonne and Oak Ridge National Laboratories. For example, peer-reviewed analysis coming out of the U.S. Argonne National Laboratory shows that all types of ethanol – the type of renewable fuel usually scrutinized for its GHG emissions – have significantly lower lifecycle greenhouse gas emissions than petroleum, even with penalties for

[6] www.e85prices.com

indirect land use change. It is worth highlighting that the Argonne National Laboratory developed the GREET model, which remains the gold standard for modeling carbon lifecycle emissions from fuels (and is the analytical basis for the California Air Resources Board Low Carbon Fuel Standard as "CA-GREET"). Many of these biofuels are significantly more carbon reductive than technologies often regarded to be the most innovative (electric drive, hydrogen). Some cellulosic ethanol facilities can deliver fuel to market with more than a 90 percent greenhouse gas emissions reductions.

Well-to-Wheels Greenhouse Gas Emissions Reduction

Relative to Average Petroleum Gasoline (including indirect land use change)

WTW GHG emission reductions	Corn	Sugarcane	Corn stover	Switchgrass	Miscanthus
Including LUC emissions	19–48% (34%)	40–62% (51%)	90–103% (96%)	77–97% (88%)	101–115% (108%)
Excluding LUC emissions	29–57% (44%)	66–71% (68%)	89–102% (94%)	79–98% (89%)	88–102% (95%)

Source: Argonne National Laboratory[7]

The carbon benefits of increasing the use of renewable fuels are even greater when you consider real world conditions – i.e. the fact that renewable fuels replace higher carbon marginal (rather than average) gallons of petroleum. To illustrate, Petrobras chief Jose Sergio Gabrielli has declared that "the era of cheap oil is over." This means that oil companies have shifted to an increasing reliance on more expensive and riskier "unconventional" fuels – including tight oil (e.g. the Bakken), deep water (e.g. Gulf of Mexico, Deep Water Horizon) and Canadian tar sands (e.g. Keystone) – to meet the global demand for fuel energy.[8] Unconventional oil is harder to find and can result in serious ecological problems (earthquakes, drinking water contamination, ecosystem destruction in the case of the Gulf). These fuels are also more carbon intensive than the "average petroleum" often used to compare the carbon value of renewable fuels. There are many recent studies that have looked at the real world

[7] See http://iopscience.iop.org/1748-9326/7/4/045905/pdf/1748-9326_7_4_045905.pdf
[8] See http://www.eia.gov/forecasts/aeo/MT_liquidfuels.cfm#crude_oil

"marginal" impact of increasing the use of renewable fuels. One of the more extensive is a 2014 analysis conducted by Life Cycle Associates in California, which concluded that first-generation ethanol – assessed by EPA in 2010 to be 21 percent better than 2005 petroleum with regard to lifecycle GHG emissions – is 32 percent better than 2012 average petroleum and 37-40 percent better than petroleum derived from tar sands and fracking. The report recognizes that using less renewable fuel, as would be the case with the current proposal, will increase the use of these unconventional types of oil:

> The majority of unconventional fuel sources emit significantly more GHG emissions than both biofuels and conventional fossil fuel sources … [t]he biggest future impacts on the U.S. oil slate are expected to come from oil sands and fracking production … significant quantities of marginal oil would be fed into U.S. refineries, generating corresponding emissions penalties that would be further aggravated in the absence of renewable fuel alternatives." *Source: Life Cycle Associates, January 2014*

These findings are consistent with recent (lower resolution) assessments by federal agencies. For example, a recent report released by the Congressional Research Service (CRS) found that Canadian oil sands are 14-20 percent more carbon intensive than the 2005 EPA baseline.[9] As such, it is an inescapable reality that any proposal to increase renewable fuel blending is a proposal to reduce U.S. consumption of high carbon intensity, unconventional oil. If the high-carbon-intensity marginal gallon of oil is displaced by cellulosic ethanol, the carbon benefits are enormous.

4) The advanced biofuel provisions in the discussion draft would provide some level of improved certainty but have a fatal flaw that would undercut investment and market growth

The 21st Century Transportation Fuels Act does provide some level of predictability for advanced biofuels producers when it comes to setting volumetric standards and feedstock. Unfortunately, the volumetric predictability comes in the form of a provision long advocated by the oil industry; namely,

[9] See http://www.fas.org/sgp/crs/misc/R42537.pdf

the setting of cellulosic biofuel standards based on prior year actual production. We strongly oppose the adoption of this provision under current and any future renewable fuel regimes.

The problem with setting the cellulosic biofuel standard based on prior year production is it puts the growth trajectory of cellulosic biofuels largely in the hands of the oil industry.

In order to secure investment to build advanced biofuel plants and build capacity, interested parties must be able to demonstrate likely demand for the biofuel product. In a free market, the demand case would center around beating the incumbent on quality and price. But, as discussed, fuel markets are not free markets. The RFS – by virtue of its forward-looking forecasting – endeavors to correct this market flaw and sends a signal to the marketplace that RFS-eligible production coming online will be built into the program.

Even with the RFS, prospective plant developers must often also present an off-take agreement or other commitment from the oil industry to buy the biofuel if produced. If the RFS is phasing out, there will be more weight put on off-take agreements with the oil industry. If the oil industry knows it can control cellulosic biofuel development by avoiding commitments to buy cellulosic biofuel, and that the federal cellulosic biofuel blending requirement will be curtailed based on this behavior, the 21st Century Transportation Fuels Act would be modifying a key (forward-looking) aspect of current renewable fuel policy to create a further disincentive for the oil industry to enter into agreements with advanced biofuel innovators. Essentially, it hands the keys of the car to the oil industry. This is why the American Petroleum Institute (API) has long-supported this RFS modification. Even with exceptions to the rule in isolated cases in which the oil industry is not the off-take partner, cellulosic biofuel production capacity growth would become the exception rather than the rule.

5) **The market readiness provisions – i.e. vehicle warranties for ethanol, pump infrastructure and Reid Vapor Pressure (RVP) – are good policy; however, biofuel market readiness is of diminished value to our industry if the driver to deliver renewable fuel to market is removed**

We appreciate the committee's recognition of many of the market readiness challenges we have as we try to compete with the incumbent oil industry and penetrate the supply chains dominated by oil for more than a century. Thankfully, we are starting to make progress on key aspects of consumer access. And the provisions contained in the proposal are many of the right ones.

However, our future success depends on two market facets working in concert: the incentive to produce renewable fuel and the ability for consumers to use it. The value of making progress in our ability to dispense ethanol (cellulosic ethanol included) in pumps and use it in cars is diminished – or eliminated – if the policy or market drivers critical to making the fuel available to dispense/use disappear as part of the process. The Act proposes to improve one facet but eliminate the other.

As discussed, a (competitive) price-driven market could be the production and investment driver, if it existed. The RFS properly administered cures the motor fuel marketplace of its competitive shortcomings. Replacing the RFS with an octane standard – especially one allowing the oil industry to easily replace renewable octane and control the trajectory of cellulosic biofuel growth – practically ensures that even if the biofuel market readiness requirements contained in the Act are met by the auto and oil industries on time, additional renewable fuel will not be there to be pumped and used. As such, the market readiness provisions in the proposal offer little value in their legislative context, and little balance when it comes to assessing the Act as a whole.

Conclusion

While there are clear benefits of opening motor fuel markets to mid-level ethanol blends and providing more certainty for cellulosic biofuel innovators, the 21st Century Transportation Fuels Act does

so in a way that would: (a) create a perverse incentive and allowance for oil companies to avoid using renewable fuels; (b) allow the oil industry to control the trajectory of the cellulosic biofuels industry; and, (c) result in many deleterious impacts for consumers, including worsened air quality, increased carbon emissions and higher prices at the pump.

While it is clear why the oil industry supports replacing the RFS with an octane standard, it is unclear why certain automobile companies agree. Improving octane as an additive measure – on top of the RFS – would give the auto industry the cleaner fuel it seeks to facilitate more efficient engines while ensuring that the carbon and air quality benefits of the RFS are maintained. The RFS additive approach would also protect billions of dollars of investments already made to facilitate the RFS and the manufacturing jobs in more than 30 states directly tied to the enaction and enforcement of the RFS.

The RFS is indispensable because it makes the renewable content requirement in motor fuel explicit for an incumbent industry disinclined to use renewable fuels. It makes competition possible in an otherwise non-competitive market. While it is true that success for our industry under the current RFS regime is tied to key decision-making by regulators and legislators in a challenging political environment – year after year – it would be a huge mistake to ease that burden by shifting it to our competitors in the oil industry via octane standards they can already hit and modifications to the cellulosic biofuel standards they can control. We do not need a change in legislative approach that would still fail to ensure good administration. We need better administration of current (good) law.

Thank you for the opportunity to speak with you today, and I look forward to your questions.

See: Addendum A

Addendum B

Addendum A:

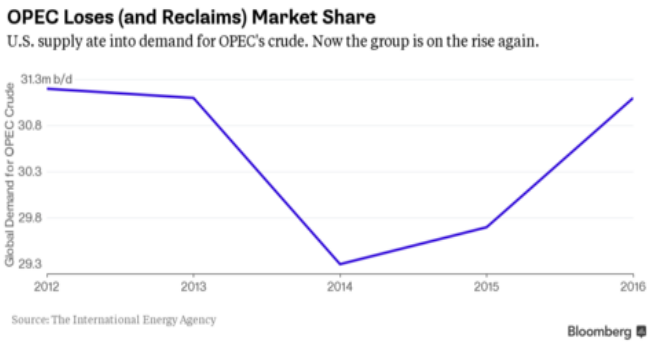
How the RFS Cracks Open a Non-Competitive Market for Biofuels

Non-competitive and non-price driven markets are almost impossible to predict regarding future demand opportunity, because the market does not behave based on free market fundamentals and the creation of a better product does not necessarily translate into market demand. This lack of predictability increases investment risk – or makes risk difficult to assess precisely – which in turn drives investment and potential strategic partners to other sectors.

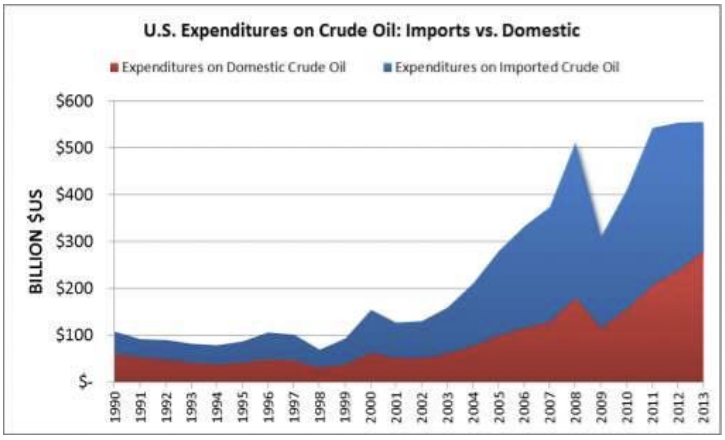
Recent trends are a case in point for why proper RFS implementation is so important to the development of advanced biofuels. Certain members of OPEC decided in late 2014 to allow global crude oil prices to slip in part to stop competition from emerging U.S. domestic tight oil production and reclaim market control. In simple terms, colluding to lower the price of oil changes the economics on U.S. oil (and other fuel) production, which struggled to compete with collusively depressed oil prices in the 2014-16 timeframe.

A recent Bloomberg report entitled "OPEC Is About to Crush the U.S. Oil Boom" notes that the strategy worked during that period.[10] And an OPEC September 2015 report openly acknowledged the effort and its effects: "In North America there are signs that US production has started to respond to reduced investment and activity. Indeed, all eyes are on how quickly US production falls."[11] As U.S. domestic oil production slowed, dependence on OPEC oil turned directionally and increased again through 2016. The figure below shows how quickly Saudi Arabia recovered market share in the wake of artificially depressed oil prices.

[10] See: http://www.bloomberg.com/news/articles/2015-10-20/after-year-of-pain-opec-close-to-halting-u-s-oil-in-its-tracks.
[11] See: http://www.opec.org/opec_web/static_files_project/media/downloads/publications/MOMR_September_2015.pdf



Even with "new" U.S. oil production, the vulnerability of the U.S. economy to foreign oil dependence is all about price. OPEC will inevitably reduce output at some point, and crude oil prices will increase sharply. If the U.S. continues to consume far more oil than it produces (inevitable) and oil prices increase (inevitable), consumers will continue to spend enormous sums of money on foreign oil and the U.S. economy will continue to suffer at the hands of its dependence on foreign oil. The magnitude of the economic drain can be staggering. Americans transferred nearly $1 trillion to OPEC members during the oil price spike of 2008, in just 6-8 months. The figure below demonstrates how increasing U.S. oil production does not necessarily protect the U.S. economy and consumers from unsustainable and dangerous levels of spending on foreign oil.

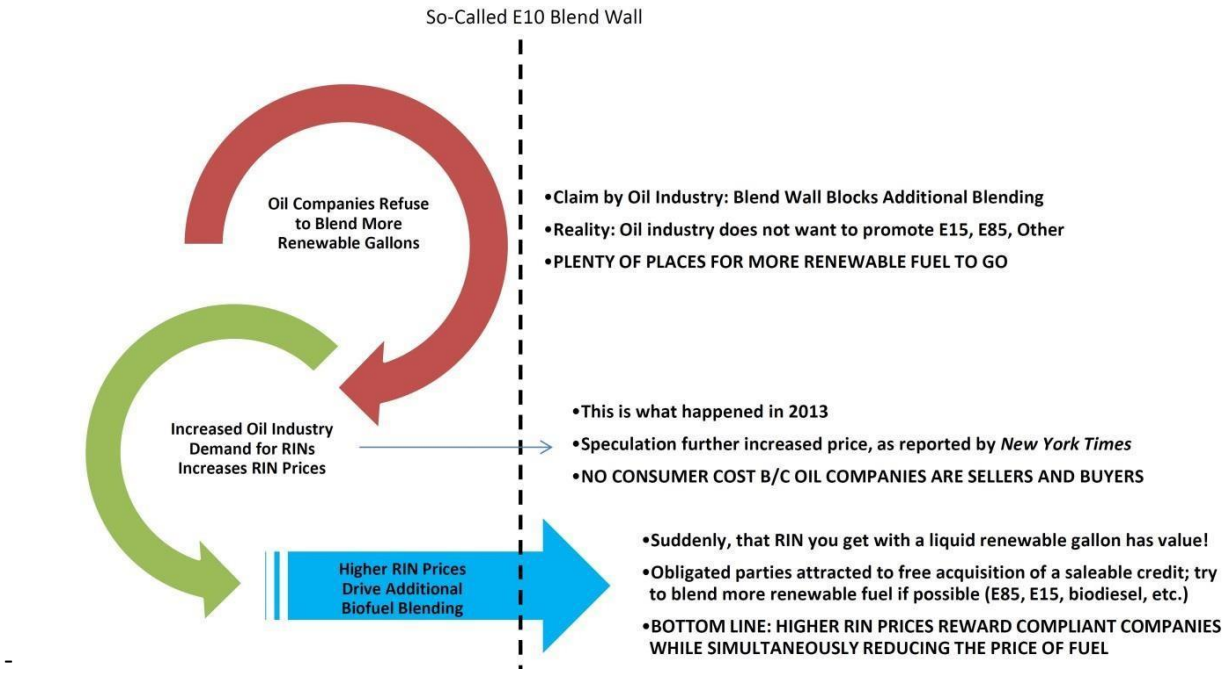


With the RFS, Congress sought to bolster energy independence and security by increasing the amount of clean, renewable fuel used in the domestic transportation fuel pool. The RFS is an aggressive

but flexible program that requires obligated parties to blend increasing volumes of various types of renewable fuel over time. The RFS does what a free market would do on its own: reward innovation.

The effectiveness of the program essentially boils down to how EPA manages market demand for Renewable Identification Numbers (RINs). The primary value of the RIN program, other than facilitating compliance and some level of compliance flexibility, is its ability to increase market access for renewable fuels. That is, when an oil company refuses to blend more liquid biofuel, they can buy a RIN on the open market instead. If a significant number of oil companies refuse to blend liquid gallons and seek RINs on the open market, RIN trading and values increase because of this affirmative non-compliance. Higher RIN prices then provide an extra incentive for other obligated parties to blend physical quantities of (liquid) renewable fuel, because they acquire a (now more) valuable and salable RIN with each gallon of renewable fuel purchased.

How RINs Work to Facilitate Objectives of RFS



Source: ABBC Presentation, Third Way Briefing, U.S. Senate Briefing

Addendum B:

If RFS administration improves, cellulosic biofuels have significant growth opportunities

When the RFS is properly administered, there is enormous growth opportunity for advanced and cellulosic biofuels.

First and foremost, gasoline demand is increasing, not decreasing. We saw the highest gasoline consumption rate ever recorded in the United States in 2018.[12] Gasoline consumption also reached a record high in 2016, breaking the previous record from 2007. Consumption is consistently matching that level and expected to reach another record high in 2019.[13] Advanced and cellulosic biofuels cut emissions in every gallon and insulate U.S. consumers from the price impacts of the global oil market.

The potential upside for cellulosic biofuels – from a production capacity perspective – is enormous. According to the Sandia National Laboratory, the U.S. could produce 75 billion gallons per year of cellulosic biofuels (one subset of the advanced biofuel industry) without displacing food and feed crops.[14] This would be enough cellulosic biofuel alone to displace more than half of gasoline demand. A Bloomberg analysis looked at select regions in the world to assess the potential for next generation ethanol production.[15] The study found that eight regions – Argentina, Australia, Brazil, China, EU-27, India, Mexico and the United States – could displace up to 50 percent of their demand for gasoline by 2030 making cellulosic ethanol from a very small percentage of its each region's agricultural residue supply alone.

[12] See https://www.eia.gov/petroleum/weekly/gasoline.php, June 20, 2018

[13] See https://www.eia.gov/outlooks/steo/marketreview/petproducts.php; June 20, 2018.

[14] See https://share.sandia.gov/news/resources/news_releases/biofuels-can-provide-viable-sustainable-solution-to-reducing-petroleum-dependence-say-sandia-researchers/.

[15] See http://www.novozymes.com/en/sustainability/benefits-for-the-world/biobased-economy/white-papers-on-biofuels/Documents/Next-Generation%20Ethanol%20Economy_Executive%20Summary.pdf

It is both an exciting and challenging time for the cellulosic biofuels industry and the advanced biofuel industry as a whole. The technology is commercially ready, and the industry is deploying at commercial scale. We are embarking on the process of securing efficiencies that can only be achieved via commercialization (i.e. the "experience curve") and economies of scale. When the corn ethanol industry started building plants, their production costs exceeded their feedstock costs by a large margin. However, corn ethanol producers have reduced their production costs by roughly 60 percent since the first commercial plants were built in the 1980s. Likewise, some solar companies have seen a similar 60-70% production cost reduction in just the last ten years, as capacity has increased significantly.

The U.S. is in position to lead the world when it comes to the development of advanced, low carbon biofuels. And yet, we face as much policy uncertainty as we ever have before, almost always generated by fabricated claims about renewable fuels and the RFS. Incumbents in the fuel energy space are going after our tax provisions, our farm bill programs, and of course, the RFS. It is important to understand that this is happening because of the effectiveness, rather than ineffectiveness, of these programs to drive consumer choice at the pump.

While cellulosic biofuel deployment continues to make steady progress against strong headwinds created by oil politics, the central point of impedance for our industry is not the law itself but administration of the law. It is common for cellulosic biofuel critics to point to the fact that development of the fuel has been years in the making and the industry has not yet achieved large-scale commercial success. However, a closer look at the development timeline tells a different story:

- Cellulosic biofuel included in RFS2, signed by President Bush in December 2007
- The "rules of the road" are not established until 2010 via the RFS2 final rule

- The Obama Administration stops enforcing the law – i.e. does not publish or enforce blending requirements – from 2014-2016; in the immediate aftermath and recovery from a 100-year recession

- In the immediate aftermath of getting the RFS back on track in 2016, it is uncovered that former EPA Administrator Pruitt had issued dozens of small refinery exemptions to refiners, some of which are not small or experiencing hardship.[16] These actions marked a massive expansion of EPA's previous use of its waiver authority. The improperly granted waivers destroyed biofuel demand across all biofuel types and rolled back the amount of renewable fuel blended into our transportation fuel ~2 billion gallons to 2013 levels. EPA has also granted several retroactive waivers, further destroying biofuel demand and forgave 500 million gallons of a single refiner's obligation as part of a bankruptcy proceeding.[17] To make matters worse, EPA has still failed to act on a 2017 Court remand to add 500 million gallons back into the 2016 RVO.[18]

- In 2016-2017, EPA staff identified ethanol made from corn fiber as a cellulosic biofuel exceeding expectations and forecasts. And yet, registrations for the individual corn fiber companies seeking to be eligible for D3 RINs are still held up in the regulatory process at EPA, creating a self-fulfilling prophecy in which cellulosic biofuels are held out of the marketplace due to regulatory delay. The 2018 RVO and the 2019 RVO include very low targets for corn fiber ethanol in part because the registrations have not been awarded.

[16] See https://www.reuters.com/article/us-usa-biofuels-epa-refineries-exclusive/exclusive-epa-gives-giant-refiner-a-hardship-waiver-from-regulation-idUSKCN1HA21P.
[17] See https://www.reuters.com/article/us-usa-biofuels-waivers-exclusive/exclusive-epa-grants-refiners-biofuel-credits-to-remedy-obama-era-waiver-denials-idUSKCN1IW1DW.
[18] See https://www.cadc.uscourts.gov/internet/opinions.nsf/5F1D8BC9815C4C698525816B00543925/$file/16-1005-1686284.pdf.

There are signs of improvement.

EPA is now moving to permit year-round sales of E15. E15 adoption – as essentially a 3-season fuel – has helped cellulosic ethanol makers demonstrate growing ethanol demand, which can be a challenge for investors to internalize in a complex, regulated market. However, the unavailability of E15 in the summer has dampened retailer interest in making the arrangements to offer the fuel at all. Permitting year-round E15 use would open markets to cellulosic ethanol, reduce harmful emissions and create economic growth.

Some have argued that the cellulosic ethanol industry does not need a growing overall ethanol marketplace to succeed since second-generation ethanol can theoretically displace first-generation ethanol in a constrained marketplace. This is a well-meaning, but illogical, argument for two primary reasons. First, the biofuel industry is inherently linked together. As shown in a Third Way report, most cellulosic ethanol first movers are also first-generation ethanol producers.[19] As such, any policy that requires second-generation ethanol production to displace first-generation ethanol essentially requires cellulosic ethanol first movers to cannibalize their current business model. Ethanol companies are not going to innovate to undercut their own existing technology any more than solar and wind companies would invest hundreds of millions of dollars in better panel and turbine technology if they were only allowed to displace existing solar panels and wind turbines. Notably, it is the revenue from first generation technology that is often being used to develop second generation technology advanced biofuel technology. And project investors – many of which have existing stakes in these companies – are not going to undercut current assets either. Second, the primary objective of U.S. biofuel policy – embodied in part by EISA 2007 – is to curb foreign oil dependence (i.e. energy independence/security rather than independence from U.S. production of conventional biofuels).

[19] See http://www.thirdway.org/report/cellulosic-ethanol-is-getting-a-big-boost-from-corn-for-now

EPA is cleaning up its waiver process. While it is too early to predict outcomes, it has been reported that EPA is reviewing and will structure a more transparent Small Refinery Exemption (SRE) review process. Increased scrutiny over the waiver process, which must continue, should improve outcomes for the biofuels industry given the clear intent of the statute.