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Energy and Commerce Committee  
U.S. House of Representatives  
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Washington, DC 20515

The Honorable Henry A. Waxman  
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Submitted via email at: rfs@mail.house.gov

RE:  POET-DSM Advanced Biofuels, LLC comments on the U.S. House of Representatives Committee on Energy and Commerce white paper on the Renewable Fuel Standard (RFS) and “Agricultural Sector Impacts”

POET-DSM Advanced Biofuels, LLC (hereinafter, “POET-DSM”) is pleased to comment on the white paper on the RFS and “Agricultural Sector Impacts” the Energy and Commerce Committee released on April 18, 2013 (hereinafter, White Paper). The White Paper is the second in a series of analyses by the Committee on the RFS.

About POET-DSM

“POET-DSM Advanced Biofuels is a 50/50 joint venture, created by POET, LLC ("POET"), based in Sioux Falls, South Dakota, and Royal DSM ("DSM"), based in the Netherlands. The joint venture is targeted to begin operation in early 2014 of its first commercial-scale cellulosic ethanol facility, located in Emmetsburg, Iowa, called Project LIBERTY.” The capital expenditure by the joint venture in project LIBERTY amounts to approximately $250 million.

DSM is a global Life Sciences and Materials Sciences company. DSM has more than 140 years of experience in biotechnology development and a proven track record of scaling up industrial operations. With its integrated technology package the company is the industry technology leader in converting cellulosic biomass to ethanol using proprietary enzymes and yeasts.

POET, the largest ethanol producer in the world, is a leader in biorefining through its efficient, vertically-integrated approach to production. The 25+ year-old company has an annual capacity of more than 1.6 billion gallons of ethanol from 27 production facilities nationwide. POET is also the world’s largest producer by volume of distillers’ dried grains with solubles (DDGS), a highly nutritious animal feed produced as a co-product of ethanol production. POET first began producing its trademarked Dakota Gold distillers’ grains product in 1993. POET now produces more than 4.2 million tons of Dakota Gold per year and exports 800,000 tons a year to more than a dozen countries.

POET also owns and operates a pilot-scale cellulosic ethanol plant in Scotland, South Dakota, which uses corn stover as a feedstock.

The POET-DSM joint venture intends to extend cellulosic technology to the remaining 26 plants in the POET network. With this joint venture, POET and DSM expect to lead the industry in fulfilling one of the central goals of Congress when it created the RFS program: the large-scale development of cellulosic ethanol.

Preface

The RFS has begun to have its intended impact of increasing the use of domestically-produced renewable fuels. The RFS is also meeting Congress’ goals for the standards of enhancing our nation’s energy security, providing a much-needed source of rural employment, and reducing the emissions of greenhouse gases and other harmful pollutants from gasoline. These goals are manifested in the clear targets that Congress set for renewable fuels in the RFS, as well as the purposefully narrow RFS provisions for when targets can be waived or reduced. As currently structured (and if allowed to work as-is), the RFS will continue to provide the benefits that Congress desired when it strengthened the RFS requirements in 2007.

POET-DSM appreciates the opportunity to comment on this White Paper on Agricultural Sector Impacts. When the RFS is properly understood, it is clear that the RFS has provided significant net benefits to rural America. As the White Paper notes, there is “no question that the RFS has provided benefits for America’s corn farmers by strengthening demand for corn.” Furthermore, the White Paper also finds that most renewable fuel production facilities “are located in rural agricultural areas.” In building the nation’s largest ethanol production network, POET has pioneered a new business model using farmers, communities, and other stakeholders as the primary investors in ethanol plants, allowing ethanol production to give back even more to the communities and states where plants are located. Additionally, as stated above, POET is the world’s largest producer by volume of DDGS, providing highly nutritious animal feed as a co-product of ethanol production.

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2 For more information on POET, see http://www.poe.com.
Discussion of specific questions

POET-DSM’s subsequent comments focus on questions 3, 4, and 6-9 in the White Paper.

3. Was EPA correct to deny the 2012 waiver request? Are there any lessons that can be drawn from the waiver denial?

Yes, EPA was correct in denying the 2012 waiver request. Importantly, in recognizing the significance of the RFS, Congress carefully crafted the circumstances in which EPA can grant a waiver request. In particular, Clean Air Act § 211(o)(7)(A) limits the relevant waivers to those situations where “implementation of the [RFS] requirement would severely harm the economy or environment of a State, a region, or the United States.” EPA correctly found that the RFS would not severely harm the economy or the environment of any state, region or the United States.

While agricultural commodity prices could be expected to be impacted by a severe drought as was experienced in 2012, the RFS itself was shown to have little if any impact on those prices (and thus the economy). Accordingly, EPA was correct in denying the waiver request.

Importantly, EPA denied the waiver because it generally found that “waiving the RFS requirements would not change the overall level of corn ethanol production or overall U.S. ethanol consumption in 2012/2013 because in the event of a waiver the market would demand more ethanol than the RFS would require.”\(^3\) Notably, EPA recognized the high-octane benefits of ethanol, as well as its clean attributes including low sulfur content and low aromatics (benzene) content.\(^4\)

Additionally, EPA also appropriately recognized that an RFS waiver would reduce the production of distillers grains (a co-product when making ethanol), which would likely increase feed prices over what they would otherwise be.\(^5\)

Significantly, EPA concluded that “it is unlikely that implementation of the RFS would cause any degree of harm to the economy.”\(^6\) EPA appropriately concluded:

“Though EPA fully recognizes the harmful impact to the economy from the 2012 drought, the evidence before the agency does not support a finding that implementation of the RFS would likely or even probably cause harm

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\(^4\) Id. at 70,760.

\(^5\) Id. at 70,770. A study by Cardno-ENTRIX found the same issue. Id. at 70,769.

\(^6\) Id. at 70,775.
to the economy over the 2012/2013 time period and certainly the
evidence does not reach the generally high degree of confidence required
for issuance of a waiver under section 211(o)(7)(A).”

The key lesson to be learned from the 2012 drought is just how resilient the agricultural
sector is, and just how little adverse impact the RFS itself had on agricultural commodity prices
versus other market forces. Furthermore, increases in farm productivity and the development
of cellulosic feedstocks (which can be designed to be drought resistant) should help to mitigate
the impacts of future droughts. It is also worth noting that while the drought tightened
domestic grain supplies significantly, global grain supplies remained adequate throughout the
world.

Additionally, greater use of increased ethanol blends (including E15, mid-level ethanol
blends such as E16-E50, and even higher level ethanol blends such as E85 used in flex-fuel
vehicles) can provide for an effective means of meeting increased future RFS targets.

While much ethanol demand can continue to be driven by market forces (and the high
octane, clean-burning attributes of ethanol), the RFS nevertheless provides an important,
predictable, source of demand for ethanol and other biofuels in an otherwise monopolized fuel
sector. Additionally, the RFS requires refiners and other incumbent interests that currently
dominate the transportation fuel value chain blend domestically-produced and
environmentally-friendly fuels into the nation’s fuel supply. These RFS requirements are critical
to incentivize the significant investment necessary for demonstrated, but nevertheless cutting-
edge, technology such as cellulosic biofuels.

4. Does the Clean Air Act provide EPA sufficient flexibility to adequately address any
effects that the RFS may have on corn price spikes?

Importantly, corn prices can “spike” for various reasons, independent of the RFS. Indeed, generally all types of commodity prices may spike, for reasons including financial
speculation or otherwise. The important point is that, should the RFS itself ever be the cause of
spikes that would severely harm the economy, the RFS provisions at Clean Air Act § 211(o)(7)(A)
already provide the necessary statutory authority to address any such problems. The RFS has
been designed correctly, and no changes are required to the RFS.

Furthermore, it should not be assumed EPA will fail to respond to a waiver request
when needed. As an example of EPA action under the RFS, the agency can and has made use of
provisions under CAA § 211(o)(7)(D) to reduce cellulosic biofuel targets when projected
cellulosic biofuel production in an upcoming year is below the applicable RFS target. By

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7 Id. (emphasis in original)
contrast, the 2012 waiver requests were denied by EPA because the petitioners provided no grounds—and no supporting facts were identified—that would justify EPA granting such waivers.

6. What role could cellulosic biofuels play in mitigating the potential effects of the RFS on corn prices?

Cellulosic biofuels are produced using feedstocks that have very little value in markets today, sources such as corn stover, wheat straw, energy grasses, wood, or municipal solid waste. These feedstocks can involve by-products of crops that may not otherwise be used (such as corn stover), or don’t involve additional crop areas at all (such as wood or municipal solid waste), or are grown on lower-grade crop areas that may not be suitable for other types of production (such as energy grasses). Thus, cellulosic feedstocks should have no negative impacts on corn or other grain commodity prices.

As noted above, POET and DSM have entered into a $250 million joint venture to complete construction on one of the nation’s first commercial-scale cellulosic ethanol facilities in late 2013. The joint venture intends to extend the technology to the remaining 26 plants in the POET network. Furthermore, EPA’s recent proposed rule on the 2013 RFS requirements has described in detail the status of a number of upcoming cellulosic ethanol production facilities.8

To put the potential for cellulosic ethanol into perspective, a U.S. Department of Energy report has estimated more than one billion tons of biomass is available in America that could produce enough cellulosic ethanol to replace nearly a third of the country’s gasoline use.9

It is critical to recognize that if the RFS target volumes are reduced (by an unwarranted Congressional intervention into the RFS as currently structured), this could have severe, adverse consequences on renewable fuel producers as well as the entire rural, agricultural community. Regulatory predictability (i.e. maintaining the RFS as-is) is essential to encourage continued investment in cellulosic and other advanced biofuels. As noted above, the RFS is critical to creating biofuels demand to incentivize the significant investment that must be made in cutting-edge technology such as cellulosic biofuels.

The critical role of existing, first-generation biofuels facilities in supporting cellulosic and other advanced biofuels also must be understood. Many biofuels producers rely on revenue streams from existing facilities to justify the investment in next-generation facilities. Furthermore, existing and advanced biofuels facilities can also have physical synergies. For

example, POET-DSM can expand cellulosic production through a “bolt-on model” whereby a cellulosic facility is sited next to an existing grain-based facility, thereby making use of existing infrastructure, including electricity, water, railroad access, and biomass supply (e.g., corn stover from a similar footprint of farms that supplies corn to the pre-existing ethanol facility). This bolt-on model can provide for the rapid scale-up of cellulosic ethanol production, and is currently being utilized at the POET-DSM Emmetsburg, Iowa facility that is slated to begin production within a year. Maintaining the RFS as-is is necessary to ensure an adequate market to recognize the promise of cellulosic biofuels.

Finally, it should not be assumed that any particular change in corn prices is due to the RFS. As EPA has found, “the market price of corn is influenced by a variety of factors, including among other things macroeconomic factors like oil prices, international demand for coarse grains, crop production in different corn-growing countries, fertilizer costs, and weather conditions that affect crop production levels.” And, as noted above, generally all types of commodity prices may spike, for reasons including financial speculation or otherwise. Additionally, a key (over-stated) concern regarding the RFS and corn prices has been in relation to animal feed prices. DDGS, an important by-product of ethanol production, provides a highly-nutritious animal feed that helps to reduce feed prices.

7. What impact are cellulosic biofuels expected to have on rural economies as the production of such fuels ramps up?

Cellulosic biofuels are poised to create significant economic opportunities for rural economies not only through the production of renewable fuel but also through feedstock development.

POET-DSM’s Project LIBERTY, under construction today and set to open in early 2014, will produce 20 million gallons of cellulosic biofuel annually, ramping up to 25 million gallons using crop residue (corn cobs, leaves, husk, some stalk). That one plant represents an initial investment of $250 million largely spent in the U.S. on construction and capital equipment. $150 million of that is a direct investment from the European company DSM, demonstrating the potential for bringing foreign dollars into the U.S. It also has the following economic impacts:

- 200+ construction jobs
- Dozens of direct jobs for plant operation
- Local tax revenue of more than $1 million annually during operation
- Nearly $4 million in direct, indirect and induced workers’ earnings annually

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More than $24 billion (mid-range estimate) in total economic impact over a 20-year period for the state of Iowa\textsuperscript{11}

Just using this one cellulosic feedstock – corn crop residue – these benefits could be quickly replicated by adding the technology to the more than 200 grain-based ethanol plants operating in the U.S. Beyond that, additional cellulosic feedstock can spark similar benefits in every state.

Presently at least six companies are building plants for cellulosic ethanol with a private investment of well over $1 billion. To meet the RFS targets for cellulosic biofuel, hundreds of facilities will be needed, which will represent a significant investment in the U.S. POET-DSM is working with banks, retirement funds and other investment vehicles globally to attract this capital to the US. Regulatory consistency is critical to attracting this money.

Of course, farmers are taking a critical role in cellulosic biofuel production, and as such they will be another prime beneficiary which in turn can provide added Federal revenues through income taxes and reduced farm subsidies to farmers.

POET-DSM’s plant in Iowa will process 770 tons of biomass each day of operation. Farmers primarily within a 35-mile radius are contracting with POET-DSM to bale approximately one ton of biomass per acre, leaving the remaining three tons on the field for nutrient replacement and erosion control. This is a new revenue crop that comes without any significant planting considerations; it is already being grown.

Farmers contracting with POET-DSM are anticipating $12-$14 million dollars in new farm revenue annually for approximately 400-500 local farmers.\textsuperscript{12} Early biomass harvesting activity has already prompted economic activity around Emmetsburg. A number of custom harvest operations have been created, often by young local residents eager for the opportunity to start a career in agriculture. Additionally, a new farm implement dealer, Woodford Equipment, opened near the construction site and is specifically serving farmers harvesting for Project LIBERTY. The broader development of cellulosic ethanol can be expected to bring billions of dollars of investment and income to farm communities.

8. Will the cellulosic biofuels provisions succeed in diversifying the RFS?

Yes. If the RFS is solidly supported by the Federal Government, diversification will be seen in the sources of feedstocks being used as well as the regions the biofuels are produced in.


\textsuperscript{12} Id.
Every state has biomass so every state will be able to experience the economic benefits of this emerging industry. Although the overall RFS targets continue to grow from now through 2022, almost all of the growth occurs in the mandates for “advanced biofuel,” a portion of which is comprised of cellulosic biofuel. The ability to use corn ethanol to meet RFS requirements is essentially capped at 15 billion gallons per year.\textsuperscript{13}

A recent EPA proposed rule noted that corn-ethanol production capacity in 2012 was 14.9 billion gallons.\textsuperscript{14} Given that corn ethanol production is essentially at the maximum mandated level of the RFS, the RFS itself should not generally incentivize additional corn ethanol production. By the very structure of the current RFS, as cellulosic biofuels use increases, the RFS will diversify in terms of feedstocks used to generate renewable energy.

As this White Paper recognizes, “significant investments have been made in cellulosic biofuels production facilities.” These investments are resulting in various commercial scale cellulosic ethanol production facilities coming on line, including the POET-DSM Emmetsburg facility. Thus, not only does the regulatory structure of the RFS itself result in greater feedstock diversification, but this diversification is happening \textit{in practice} as well. Thus, the RFS should be left to work as-is, without restructuring biofuels targets.

9. \textbf{What is the scale of the impact of the RFS on international agricultural production and global land use changes?}

Many factors can influence world grain prices, including the price of oil, market speculation, weather, and the growing demand for meat worldwide. The impact of the RFS on world grain supply is often misstated. As the World Bank noted in a review of the 2008 commodity price spike, “… worldwide, biofuels account for only about 1.5 percent of the area under grains/oilseeds. This raises serious doubts about claims that biofuels account for a big shift in global demand.”\textsuperscript{15}

Nonetheless, International agricultural production has benefitted in recent years from a fair market price for grain due to a variety of factors, with previously idled cropland coming

\textsuperscript{13} By definition, an advanced biofuel cannot include ethanol derived from corn starch (referred to herein as “corn ethanol”). \textit{See} CAA §211(o)(1). Thus, the “cap” on the use of corn ethanol to meet RFS requirements can be derived by subtracting the “Advanced biofuel” target in section 211(o)(2) from the total “Renewable fuel” target in that same section.


back into production and a strong incentive for international producers to invest in new technology and more efficient production techniques.

Consequently, the United States’ role among the four major corn exporting nations has fallen from 76.7% in 2005 to 28.1% last year. Meanwhile the other three countries – Argentina, Brazil and the Ukraine – have adopted larger roles in the export market.

This was possible thanks to increased corn production outside the U.S., and it is the natural result of fair market prices for agricultural commodities. For decades, U.S. crop support programs contributed to depressed corn prices below the cost of production. While U.S. farmers were able to survive thanks to government support, many foreign countries could not afford to supplement farm incomes. Farm land worldwide went idle, and the rest of the world became dependent on grain primarily from the U.S. According to Stanford University research, more than a billion acres of agricultural land has gone idle worldwide in the last century.\(^\text{16}\)

With recent price improvements, previously idled land is coming back into production, allowing countries to become more self-sufficient.

For example, USDA data shows that corn production in Argentina increased 61% between 2005 and 2012 (from 622 million bushels in 2005 to more than 1 billion bushels last year). Brazil improved by 81% (from 1.6 billion bushels to 2.9 billion). The Ukraine improved corn production by 190% (from 282 million bushels to 824 million), and China increased its production 49% (from 5.5 billion bushels to 8.2 billion).

Given that ethanol production is not a primary driver of world grain prices, any role in “land use change” is questionable. Nonetheless, increasing corn acres in other parts of the world, for whatever reason, is not evidence of “land use change.” It is the result of previous crop land coming back into production. It is clear that the new acres are not “low-yield” acres because as new corn production has increased, so have corn yields in these countries, according to USDA. Looking at the four major corn-producing countries noted above, shows yield increases.

- Argentina: 17%
- Brazil: 48%
- Ukraine: 11%
- China: 13%

This supports the fact that productive farm land is being used to increase corn supplies and that farmers around the world are now able to improve their farm practices to get more

grain from each acre. This does not qualify as land use change, because it is not a new use for the land.

The other aspect of land use change that is often wrongly attributed to biofuels is that of deforestation in the Amazon Rainforest. The truth is that deforestation rates in the Amazon have consistently fallen since the Renewable Fuel Standard came into effect, from 7,341 square miles annually in 2005 to 1,798 square miles last year. The 2012 rate represents the lowest deforestation rate since record-keeping began in 1980.\(^\text{17}\)

Conclusion

In conclusion, the RFS has been a significant success and—left as it is—will provide even more of the economic, energy security, and environmental benefits that Congress intended to promote, including significant benefits to the agricultural sector.

POET-DSM would welcome the opportunity to further discuss these issues and solutions to the nation’s transportation energy needs, and the significant benefits that the RFS has brought to the agricultural sector.

Sincerely,

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