Environmental and Energy Study Institute

October 10, 2012

The Honorable Lisa Jackson
Administrator, Environmental Protection Agency
1200 Pennsylvania Ave, NW
Washington, DC 20460

Re: Docket ID No. EPA-HQ-OAR-2012-0632

Dear Administrator Jackson:

On behalf of the Environmental and Energy Study Institute (EESI), I offer the following comments for your consideration concerning the requests from the governors of Arkansas and North Carolina (and others) to temporarily waive the Renewable Fuel Standard (RFS) in the wake of this summer's devastating drought and heat wave.

EESI is a not-for-profit organization dedicated to promoting an environmentally and economically sustainable society. EESI seeks to advance energy efficiency and renewable energy (including sustainable biomass energy) as critical components of climate change mitigation and adaptation strategies.

The economic and environmental toll from this summer's extreme weather is still mounting and has spread beyond the dozens of states that were directly impacted. The federal government has a critical role to play in helping affected farmers, livestock and poultry producers, and communities survive this natural disaster and get back up and running. The Obama Administration has already taken some important steps under existing authorities to help mitigate the harm,[1] but there are many more ways that the federal government could help (if Congress would act), which would be more effective in addressing the true scale of the damage.

However, in EESI's assessment, waiving the RFS would not be an effective way to mitigate the harm from this natural disaster. It is unlikely that waiving the RFS would significantly reduce the harm caused by the heat wave and drought to livestock and poultry producers and consumers over the next twelve

[1] USDA, News Release, September 19, 2012, *USDA Expands Drought Assistance to 22 States*, http://www.usda.gov/wps/portal/usda/usdahome?contentid=2012/09/0300.xml&contentidonly=true

months, but a waiver would be likely to compound and spread additional harm to other states and sectors of the national economy. Of greatest concern is that it may deter needed investment and delay infrastructure development in more environmentally sustainable, climate-friendly advanced biofuels.

Extreme weather caused the harm, not the RFS. The governors blame the RFS for harm to their livestock and poultry industries and consumers, when, in fact, it was this summer's extreme weather, likely intensified by climate change,[2] that has caused the harm. Were it not for this natural disaster, the United States would be harvesting its largest corn crop in history right now. Based on the spring planting, before the drought set in, farmers expected to harvest more than 14.7 billion bushels of corn in 2012 - almost 20 percent more than in 2011.[3] This would have been more than enough to meet the nation's needs for food, feed, export markets and renewable fuel.

The effects of the extreme weather are harming the corn ethanol industry, too, and the industry is already responding to market conditions – without a waiver -- by reducing its production and use of corn. The economic damage is not limited to crop, livestock, poultry, and dairy producers. Many ethanol plants have shut down or reduced production due to the high price of corn and negative profit margins for many. Corn is the biggest input cost in the corn ethanol industry, just as it is for the livestock and poultry industries. Energy Information Administration (EIA) data indicate that corn ethanol production dropped almost 15 percent between early June and early October,[4] and, over the same period, the ethanol industry reduced its stocks by more than 11 percent.[5] In addition, corn ethanol exports declined during the first six months of 2012 and are expected to continue declining,[6] and ethanol imports have increased.[7] [8] If nothing changes in the months ahead, total corn demand from the ethanol industry alone will be reduced ten percent, according to USDA[9] and FAPRI[10] estimates. These trends are already putting downward pressure on corn prices.

---

[2] James Hansen, Makiko Sato, Reto Ruedy, "Perception of Climate Change," Proceedings of the National Academy of Sciences, August 2012, http://www.pnas.org/content/early/2012/07/30/1205276109.full.pdf+html

[3] USDA, *World Agricultural Supply and Demand Estimates (WASDE)*, July 11, 2012 http://usda01.library.cornell.edu/usda/waob/wasde//2010s/2012/wasde-07-11-2012.pdf

[4] USEIA, *Weekly U.S. Oxygenate Plant Production of Fuel Ethanol*, September 26, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPOOXE_YOP_NUS_MBBLD&f=W

[5] USEIA, *Weekly Ending Stocks of Fuel Ethanol*, September 26, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPOOXE_SAE_NUS_MBBL&f=W

[6] "Drought to Hit Ethanol Exports, Not Gas Prices: EIA," *Reuters*, August 8, 2012, http://www.reuters.com/article/2012/08/08/us-ethanol-gasoline-drought-idUSBRE8771HO20120808

[7] USEIA, *Weekly U.S. Imports of Fuel Ethanol*, September 26, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPOOXE_IM0_NUS-Z00_MBBLD&f=W

[8] Robert Wisner, Agricultural Marketing Resource Center, Iowa State University, "Brazil Ethanol Developments and Implications for U.S. Ethanol Industry," *AgMRC Renewable Energy & Climate Change Newsletter*, October 2012, http://www.agmrc.org/renewable_energy/ethanol/brazil-ethanol-developments--implications-for-the-us-ethanol-industry/

[9] USDA, *WASDE*, September 12, 2012, p. 12 http://www.usda.gov/oce/commodity/wasde/latest.pdf

[10] Food and Agricultural Policy Research Institute (FAPRI), University of Missouri, *August 2012 Baseline Update for U.S. Agricultural Markets*, FAPRI-MU Report #06-12, http://www.fapri.missouri.edu/outreach/publications/2012/FAPRI_MU_Report_06_12.pdf

The greatest impact of the short corn crop, among the various uses of corn, is likely to be on carry-over stocks (-38%), corn exports (-19%), and the ethanol industry (-10%) compared to 2011. In comparison, the use of corn for animal feed is expected to decline by only about six percent, according to USDA estimates.[11] Some of the reduced use of corn for feed may be made up from wheat and barley supplies. This was a good crop year for both. Additional shortfall may be made up from corn imports.

The USDA expects U.S. corn imports to triple. Brazil, the world's third largest corn producer, has just harvested a bumper crop 29 percent larger than its 2011 record crop. Brazilian corn exports are expected to almost double to 15 million metric tons (600 million bushels) in 2012/13.[12] The rapid pace of Brazilian corn exports is already having an effect on corn prices.[13] Increased planting and good harvests in Brazil, Argentina, and South Africa (with good weather) could put more downward pressure on global corn prices in the spring of 2013.

The lack of adequate pasture and soaring feed costs due to the drought have cost livestock, poultry, and dairy producers dearly. The lack of forage has caused many livestock producers to switch to higher priced corn and other feed grains sooner than they normally would. Those who cannot afford the high feed costs have been reducing their herds early. Many are selling at a loss, as prices have declined with the surge in the cattle supply moving to feedlots. [14]

Yet, the impact of the drought on meat, poultry, and dairy production is expected to be relatively modest overall through 2013. While the harm has been severe for many individual producers, and the higher feed costs are affecting all producers, overall, the USDA does not expect severe economic harm to these industries as a whole through 2013. Beef prices are likely to decline in 2012 and then increase faster in 2013, reflecting the reduced size of the herd. High corn prices are expected to result in slightly lower poultry, hog, and dairy production in 2013. For example, the USDA estimates that total red meat production (beef and pork) is expected to increase slightly in 2012 over 2011, and then decline by about 2.9 percent in 2013. Poultry production may decline by 0.6 percent in 2012 and by another 1.4 percent in 2013.[15]

The USDA expects the impact on food inflation for consumers will be relatively modest through 2013. Higher corn prices will contribute to increased food inflation for consumers, especially for corn-intensive meat, poultry, dairy, and corn-sweetened beverages. However, the USDA expects that overall food inflation will only be slightly higher than normal for the remainder of 2012 (2.5-3.5%), and a little higher

---

[11] USDA, *WASDE*, September 12, 2012, http://www.usda.gov/oce/commodity/wasde/latest.pdf
[12] UN Food and Agriculture Organization (FAO), *GIEWS Country Briefs: Brazil*, September 19, 2012, http://www.fao.org/giews/countrybrief/country.jsp?code=BRA
[13] Rudy Ruitenberg, "Corn Spreads collapse as Brazil Exports, U.S. Crop Boost Supply," *Bloomberg Businessweek*, September 25, 2012, http://www.businessweek.com/news/2012-09-25/corn-spreads-collapse-as-brazil-exports-u-dot-s-dot-crop-boost-supply
[14] USDA, Economic Research Service, *Livestock, Dairy and Poultry Outlook*, September 18, 2012, http://www.ers.usda.gov/media/908638/ldpm219.pdf
[15] USDA, *WASDE*, September 12, 2012, p. 31, http://www.usda.gov/oce/commodity/wasde/latest.pdf

than that in 2013 (3.0-4.0%). The average rate of food inflation for the past 20 years has been 2.5-3.0 percent.[16]

The price of corn has already dropped significantly (11%) from its high in mid-August. This drop reflects both reduced anticipated future domestic corn demand and improved confidence about future U.S. and global supplies.[17] This may indicate that the crisis is already moderating, and, if this trend continues, any future harm to corn-dependent industries is likely to be less than the amount that already has been experienced to date.

The RFS provides sufficient flexibility to refiners and blenders in years when there is a short crop. The EPA allows refiners to apply surplus blending credits earned in previous years (up to 20 percent of the amount blended in a given year) to future years in lieu of the blending requirement. Refiners currently have about 2.5 billion gallons worth of renewable fuel blending credits which they can carry over and apply against the RFS requirements in 2012 or 2013. If they did this instead of purchasing more ethanol, it would reduce corn demand by more than 850 million bushels. Refiners also may defer blending ethanol in one calendar year to the following year.

Further, reduced ethanol exports and increased imports are other ways that the global ethanol market is likely to respond to higher corn and ethanol prices in the United States. This also would result in reduced demand for corn. These trends were already occurring during the first half of the year – before corn prices spiked, and continued into September.[18]

A waiver may not result in reductions in corn prices that are as large or immediate as livestock and poultry producers would like. Recent analyses from Iowa State University,[19] Purdue University,[20] and the University of Missouri[21] indicate that under certain conditions, an RFS waiver may reduce corn prices over time. However, many factors are combining to make the outcome of a waiver highly uncertain.

---

[16] USDA, Economic Research Service, *Food Price Outlook*, September 25, 2012, http://www.ers.usda.gov/data-products/food-price-outlook.aspx

[17] Luzi Ann Javier, "Corn Prices Probably Peaked After Drought Cuts U.S. Output," *Bloomberg Businessweek*, September 21, 2012, http://www.businessweek.com/news/2012-09-21/crop-prices-probably-peaked-after-drought-cuts-u-dot-s-dot-output

[18] USEIA, *Weekly U.S. Imports of Fuel Ethanol*, September 26, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPOOXE_IM0_NUS-Z00_MBBLD&f=W

[19] Bruce Babcock, Center for Agricultural and Rural Development, Iowa State University, *Updated Assessment of the Drought's Impacts on Crop Prices and Biofuel Production*, CARD Policy Brief 12-PB 8, August 2012, http://www.card.iastate.edu/publications/dbs/pdffiles/12pb8.pdf

[20] Wallace E. Tyner, Farzad Taheripour, Chris Hurt, Purdue University, *Potential Impacts of a Partial Waiver of the Ethanol Blending Rules*, for the Farm Foundation, August 16, 2012, http://www.farmfoundation.org/news/articlefiles/1841-Purdue%20paper%20final.pdf

[21] Food and Agricultural Policy Research Institute (FAPRI), University of Missouri, "Renewable Fuel Standard Waiver Options During the Drought of 2012," *FAPRI-MU Report #11-12*, October 2012, http://www.fapri.missouri.edu/outreach/publications/2012/FAPRI_MU_Report_11_12.pdf

Iowa State's Bruce Babcock finds that corn prices may fall as much as $0.58 per bushel with a complete waiver of the RFS requirements in 2013, compared to corn prices in a scenario in which a) the EPA does not issue a waiver, and b) blenders use 2.4 billion gallons of blending credits to meet the RFS.

Purdue's Wallace Tyner, Farzad Taheripour, and Chris Hurt find that the following factors need to be in place for an RFS waiver to make the most difference for reducing ethanol demand: a) high corn prices, b) low oil prices, and c) refiners having maximum regulatory and technical flexibility to stop blending ethanol. In the most extreme scenario they examined, the EPA would waive the RFS by 25 percent (3.45 billion gallons), and in addition, blenders would apply 2.6 billion gallons of blending credits to reduce ethanol production in 2013. They estimate that the price of corn may fall by as much as $1.31 per bushel below what the price would have been in a scenario in which a) the EPA does not issue a waiver, and b) blenders applied two billion gallons worth of credits to meet the RFS.

However, as they explain, there are many reasons why refiners may not want or be able to reduce ethanol blending in the short term. Ethanol has been fully integrated into fuel formulas and fuel production systems to meet both EPA air quality requirements and industry fuel performance standards. Many refiners may not have the flexibility to reduce ethanol blending in the short term, and it may be costly for some to change their fuel blending in the long term.

Both studies point out that much depends on the price of gasoline, which has risen significantly in recent months.[22] Currently, ethanol futures (~$2.40 per gallon) are much cheaper than gasoline futures (~$3.30 per gallon). Until these prices converge, refiners will not have much incentive to reduce their demand for ethanol – even with a waiver.

The University of Missouri's FAPRI report finds:

- *"Reducing the overall RFS has a small negative effect on the corn price in 2012/13 relative to the baseline because overall ethanol use and production are projected to be motivated mostly by crop and fuel market conditions in the current marketing year, not the RFS. Waiving the mandate, a minimum use requirement, has limited market impact if people were going to use almost as much as the mandate anyway."*
- *"A waiver in 2012/13 may have larger negative impacts on corn market prices in 2013/14 than in 2012/13. Extra biofuel use in one year typically can help to meet the next year's mandate. If this practice is permitted, a waiver in 2012/13 could make it far easier to satisfy the RFS in 2013/14, when limits on E10 blending make mandate compliance difficult. If the waiver also disallows counting biofuel use in 2012/13 against the mandate in the next year, then the mandate might be more difficult to meet in 2013/14. In this case, corn prices in the year after the waiver would be higher than in the baseline."*

[22] USEIA, "Crude Oil Prices Peaked Early in 2012," *Today in Energy*, http://www.eia.gov/todayinenergy/detail.cfm?id=7630&src=email

If refiners and blenders reduce the use of ethanol under an RFS waiver, the effect will be primarily to spread additional economic harm to other industries, consumers, and states. More ethanol plants would close, and many may go bankrupt. More people would be laid off. More harm would be done to rural communities where plants are based. The whole supply chain connected with these plants would by adversely affected. The price of feed near many ethanol plants would increase as production of low-cost DDGs stops, and as livestock producers are forced to switch to higher priced whole corn. And, the many other economic and environmental benefits listed below from continued RFS implementation would be lost.

Continuing to implement the RFS delivers significant direct and indirect benefits for consumers, other industrial sectors, and the general public across the country.

- Increased prices for corn and other crops benefit crop producers, which in turn increases agricultural land values, rural wealth and income.[23]
- Increased production of DDGs, a co-product of ethanol production, provides livestock producers with a lower cost (and higher value) feed alternative to using whole corn – with pre-drought DDG prices averaging 20 to 25 percent less than corn.[24]
- Blending ethanol with gasoline reduces U.S. dependence on oil imports by displacing about ten percent of the gasoline supply (by volume) and about two percent of diesel fuel with renewable biofuels.[25]
- Blending lower cost ethanol with gasoline reduces prices at the pump for all consumers and businesses, compared to what the prices would be without ethanol and with higher gasoline demand (as long as ethanol remains cheaper than gasoline to produce).[26]
- Implementation of the RFS increases national GDP, rural employment, income, and wealth due to reduced petroleum imports and increased domestic production of biofuels.[27]
- The RFS improves the U.S. balance of trade by reducing expensive oil imports.[28]
- Ethanol blending boosts engine performance with higher octane, reduces air pollution, and does not pose a risk to groundwater as do petroleum-based oxygenate alternatives such as MTBE.[29]

---

[23] Christine Stebbins, "Analysis: U.S. Bankers Say, Love It or Hate It, Ethanol Here to Stay," *Planet Ark*, September 12, 2012, http://planetark.org/wen/66455

[24] Agricultural Marketing Resource Center, Iowa State University, *Weekly Ethanol, Distillers Grain, and Feed Prices*, http://www.extension.iastate.edu/agdm/energy/xls/agmrcethanolplantprices.xlsx

[25] USEIA, *Short Term Energy Outlook*, September 11, 2012, http://www.eia.gov/forecasts/steo/report/us_oil.cfm

[26] Xiaodong Du and Dermot J. Hayes, Center for Agricultural and Rural Development, Iowa State University, "The Impact of Ethanol Production on U.S. and Regional Gasoline Markets: An Update to 2012," *Working Paper 12-WP 528,* May 2012, http://www.card.iastate.edu/publications/dbs/pdffiles/12wp528.pdf

[27] John M. Urbanchuk, *Contribution of the Ethanol Industry to the Economy of the United States*, Prepared for the Renewable Fuels Association, February 2, 2012 http://ethanolrfa.3cdn.net/c0db7443e48926e95f_j7m6i6zi2.pdf

[28] U.S. Department of Commerce, U.S. Census Bureau, *Foreign Trade, Annual Highlights: 2011*, http://www.census.gov/foreign-trade/statistics/highlights/annual.html

[29] U.S. Department of Energy, Alternative Fuels Data Center, *Ethanol Benefits and Considerations*, http://www.afdc.energy.gov/fuels/ethanol_benefits.html

- Continued implementation of the RFS reduces life cycle greenhouse gas emissions from transportation fuels today, but, even more important, it is accelerating investment in the development of more environmentally sustainable and climate-friendly biomass feedstocks and advanced biofuels for the future.[30]

A waiver would create significant uncertainty about the future of the corn ethanol industry. This may lead corn producers to plant less corn in 2013, setting up the possibility of a repeat shortfall in corn production – only this time it would be due to a policy choice instead of a natural disaster. This would harm the same people concerned this year about the high price of animal feed.

A waiver would create significant uncertainty about the future of the advanced biofuels industry. Moving beyond corn ethanol is a critical goal of the RFS. Other biomass feedstocks offer far greater bioenergy potential than corn – producing much more biofuel per acre; using less energy and other inputs; and causing less harm to the climate and the environment. These more sustainable, climate-friendly advanced biofuels are already being produced in limited quantities today, [31] but many more biorefiners are planning to break ground on plants this year and next.

The USDA estimates that to meet the RFS advanced biofuel requirement in 2022, the United States will need to build more than 500 new biorefineries, each producing 20-40 million gallons per year. Each will need to develop local sustainable biomass supply chains to collect, harvest, transport, store, and process large volumes of biomass. It could cost as much as $168 billion to build all of these biorefineries.[32] Thus, much new investment is needed now if the 2022 goal is to be met.

This is a critical time for many would-be advanced biofuel producers who are now trying to line up financing to build these new commercial scale biorefineries and biomass production systems. Unfortunately, however, policy uncertainty about the government's future commitment to the RFS is already one of the biggest obstacles to growth and investment in the industry today – compounding the already existing uncertainties about the future of the broader economy.[33] Observing shuttered corn ethanol plants, closed by an RFS waiver, will new investors in advanced biofuels feel encouraged to invest the tens of billions of dollars that are needed to achieve the RFS goals?

In conclusion, it seems that much of the harm from the drought and heat wave has already occurred, and that the crisis and prices already are beginning to moderate. Corn demand is already reduced

---

[30] Ned Stowe, EESI, "Meanwhile, the Next Generation Advanced Biofuels Industry is Scaling Up," *Sustainable Bioenergy, Farms, and Forests (SBFF)*, August 24, 2012, http://www.eesi.org/meanwhile-next-generation-advanced-biofuels-industry-scaling-24-aug-2012

[31] Ned Stowe, EESI, "Next Generation Advanced Biofuels," *SBFF*, August 24, 2012, http://www.eesi.org/meanwhile-next-generation-advanced-biofuels-industry-scaling-24-aug-2012

[32] USDA, *A USDA Regional Roadmap to Meeting the Biofuels Goals of the Renewable Fuels Standard by 2022*, June 23, 2010, http://www.usda.gov/documents/USDA_Biofuels_Report_6232010.pdf

[33] Biofuels Producers Coordinating Council, *Biofuels Producers Coordinating Council Asks President Obama to Stay the Course on RFS,* August 27, 2012, http://www.bio.org/advocacy/letters/biofuels-producers-coordinating-council-asks-president-obama-stay-course-rfs

across the major corn-using sectors, and, if demand stays lower, the rationale for waiving the RFS to protect these states from further economic harm is weakened. Future harm due to the drought with continued RFS implementation seems likely to be less than the amount of harm that has occurred already. Finally, the many significant benefits of continued RFS implementation substantially offset much of the current harm from the drought in the short- term, and indeed, **the potential long-term harm to the national economy, energy security, and future climate security from waiving the RFS will well exceed the benefits of any waiver.**

As we have seen, the EPA's rules provide sufficient flexibility for refiners to adjust their use of corn ethanol following a short crop year, and other interventions, such as an RFS waiver, should not be considered until that flexibility has been fully exercised. Finally, there are other, more effective and direct ways that the federal government can and should use to assist livestock, dairy and poultry producers and low-income consumers who are impacted by drought.

Thank you for your consideration. Please contact us if we can be of further assistance.

Carol Werner
Executive Director