

COMPLIANCE COSTS ASSOCIATED WITH THE PROPOSED RULEMAKING FOR THE RENEWABLE FUEL STANDARD

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I. Introduction

The Energy Policy Act of 2005 established a Renewable Fuel Standard (RFS) that specified for the first time a minimum amount of renewable fuel required to be used in the U.S. gasoline pool. The RFS required at least 4 billion gallons of renewable fuel to be consumed in 2006, and this was scheduled to increase to at least 7.5 billion gallons by 2012. Then, in December 2007, Congress passed the Energy Independence and Security Act (EISA), which significantly expanded the RFS (referred to as RFS2) and separated the volume requirements into four separate categories: cellulosic biofuel, biomass-based diesel, advanced biofuel and total renewable fuel. Within the total renewable fuel category, the volume of corn-based ethanol is scheduled to reach 15 billion gallons per year by 2015 and then remain at that level. The EISA also established key requirements that are not volume related, such as greenhouse gas (GHG) thresholds for biofuel facilities and a definition of renewable biomass that feedstock must meet for the biofuel produced from it to count toward the RFS.

In May 2009, the U.S. Environmental Protection Agency (“EPA”) issued a Notice of Proposed Rulemaking (NOPR) regarding the RFS and related provisions of the EISA. The NOPR laid out a number of alternative approaches for implementing provisions of RFS2, and in conjunction with a Draft Regulatory Impact Analysis (DRIA) it incorporated analyses of the impact of RFS2 on sectors of the economy such as agriculture and energy, as well as issues such as land-use change and GHG emissions.

Given the importance of the provisions of the proposed rulemaking to the ethanol industry, and by extension to corn producers, the National Corn Growers Association commissioned Informa Economics (“Informa”) to review the regulatory requirements contained in the proposed rulemaking that will affect producers of corn and ethanol, and estimate the costs associated with compliance. The results of Informa’s analysis are contained in this report.

II. Review of Reporting Requirements and Estimate of Associated Costs

A. Introduction

There are significant new requirements placed upon ethanol facility operators under the proposed rulemaking for RFS2. Two key issues the new requirements present are (1) the requirement that facilities ensure their feedstock meets the definition of renewable biomass as contained in the EISA, and (2) the requirement for ethanol production facilities to register with the EPA.

A key aspect of the EISA definition is that feedstocks must come from land that was in cultivation prior to the December 2007 passage of the legislation (there is also a provision stipulating that, for the most part, the land must have been actively managed since that date). More importantly, the EPA requires documentation from feedstock producers that the land was actively cultivated prior to December 2007. Documentation can consist of feedstock producers' written records. Depending upon the approach that the EPA ultimately requires ethanol facility operators to use (i.e., in the final rulemaking), the documentation might have to be transferred with the feedstock as it moves through the value chain from farmer to ethanol plant. Proof of the land being actively managed can consist of sales records; purchasing records for land treatments, such as fertilizer, weed control or reseeding; a written management plan; or documentation of participation in an agricultural program sponsored by a federal, state or local government agency.

The rule will assign corn to a common land unit within a farm. A common land unit (CLU) is the smallest unit of land that has a permanent, contiguous boundary, a common land cover and land management, a common owner and a common producer for agricultural land associated with USDA farm programs. CLU boundaries are delineated by relatively permanent features such as fence lines, roads, and/or waterways.

Every ethanol plant will register with the EPA every three years, and this will include having a third-party engineering firm certify the configuration of each facility. Significant but less critical issues involve the tracking of ethanol/feedstock and the associated renewable identification numbers (RINs) for any facility that expects to have multiple production pathways (mainly cellulosic and conventional ethanol produced at the same plant), as well as additional recordkeeping burdens placed on ethanol facilities. Examples of such recordkeeping are that each operation will have to submit an annual Proposed Production Outlook, and RIN reporting will be monthly instead of quarterly in the first year and then will transition to real time.

B. Background

Land that is in crops, pasture, managed tree farms and Conservation Reserve Program (CRP) is considered to be actively managed; however untouched forest, rangeland and virgin prairie land is not considered to be actively managed.

The U.S. Department of Agriculture’s (“USDA”) National Agriculture Statistics Service (“NASS”) provides data on crop acreage and CRP acreage. When 2007 total crop plus CRP acreage is compared to preliminary 2009 total crop acreage plus CRP acreage, it is estimated that U.S. acreage has declined (see Table 1). Eighteen states increased acreage by a combined 1.9 million acres while the other 32 states decreased acres by 4.3 million acres. The U.S. 2007 Census reported pasture land acreage at 35.8 million acres. It is possible some new land came into cultivation since 2007, but the practice of cropping uncultivated land is believed to be extremely limited. Due to federal and state laws that are aimed at preserving wildlife habitat, cultivating new land is very difficult.

Table 1: U.S. CRP and Crop Acreage (2007 and 2009) (Thousand Acres)

	2007	2009	Change	Percent Change
SD	18,054	18,713	660	3.65%
LA	3,154	3,390	236	7.48%
NY	2,922	3,130	208	7.12%
TN	4,566	4,736	170	3.73%
MS	5,231	5,396	165	3.15%
MN	21,348	21,463	115	0.54%
OK	11,264	11,377	113	1.01%
WY	1,803	1,865	62	3.45%
AZ	687	727	41	5.94%
SC	1,712	1,750	38	2.22%
OR	2,638	2,662	25	0.93%
NC	4,311	4,335	24	0.56%
WV	675	695	20	2.89%
OH	10,486	10,501	16	0.15%
CO	8,318	8,331	13	0.16%
ME	243	255	12	4.89%
ID	4,729	4,736	7	0.14%
MD	1,309	1,312	3	0.24%
All Others	245,706	241,379	(4,328)	-1.76%

Source: NASS

RINs can only be generated if it can be established that the feedstock came from types of land that are allowed under RFS2. All renewable fuel consumed in the U.S. is required to be documented regarding the type of land used to produce the feedstock regardless if a RIN is produced. This means a renewable fuel provider cannot forgo generating the RINs as a method to avoid land verification. Domestic and imported renewable fuel must establish a land confirmation system.

EPA is aware that newly cultivated land could be segregated for non-renewable fuel purposes, while previously cultivated land is used for renewable fuel.

USDA programs involve data collection from agricultural land owners, farmers, and forest land owners. This data cannot be accessed by the EPA or ethanol producers because of Section 1619 of the Food, Conservation, and Energy Act of 2008 (the 2008 farm bill) and USDA agencies' privacy policies. The farmer would have to provide this or other documentation to the elevator or renewable fuel producer.

USDA data could be used to signal the cultivation of new agricultural land that could find its way into renewable fuel feedstock production. A change in law would be needed to allow the USDA to be used for third-party verification or allow the USDA to release aerial maps.

If found in noncompliance with land use requirements, the ethanol plant will have to fulfill three requirements; (1) the renewable fuel producer must conduct an investigation of the number of RINs issued with the non compliance feedstock and either retire that number of RINs or forego future RINs, (2) a determination must be made as to how the feedstock was allowed to be used for RINs, and (3) the renewable fuel producer must prove it was the feedstock producer or additional sanctions might occur.

The only punishment for the farmer is threat of a lawsuit from the ethanol plant. If the farmer provides wrong documentation but the corn used to produce ethanol came off of previously cultivated land, the ethanol plant could be found in noncompliance even though no laws are broken. Additionally, unless the farmer has a large amount of new land under cultivation, he will probably be able to "shuffle" corn among buyers, delivering corn from previously cultivated land to ethanol facilities, while delivering corn from newly cultivated land to other market outlets.

C. Approaches to Meeting the Renewable Biomass Definition in RFS2

The NOPR issued by the EPA put forward several alternative approaches to ensuring RINs are generated only for renewable fuels produced from feedstocks meeting the definition of renewable biomass contained in the EISA. The following is a summary of the approaches that the EPA is considering and submitted for public comment.

- Industry Third-Party Verification Program
 - There is no known third-party organization that certifies U.S. crop land based on the status of when the land came into cultivation.
 - An industry-wide third-party program could be developed to provide verification to renewable fuel providers regarding the status of whether land on which feedstock was produced was under cultivation prior to December 2007 (i.e., previously cultivated).
 - A sample of renewable fuel producers would be audited annually.

- Examples of existing third-party organizations:
 - Roundtable on Sustainable Biofuels (RSB)
 - Better Sugarcane Initiative (BSI)
 - The Brazilian Association of Vegetable Oil Industries (ABIOVE)
 - Brazil's National Association of Grain Exporters (ANEC)
 - ABIOVE and ANEC use aerial photos to verify land cultivation, and this is cross-checked with satellite imagery.
 - Verified Sustainable Ethanol Initiative
 - Established criteria for Brazilian sugarcane ethanol industry trade association UNICA to ship ethanol to SEKAB (Swedish ethanol importer).
 - The Sustainable Agriculture Network (SAN)
 - Rainforest Alliance: Provides certification of wooded areas used for commercial development through sustainable processes in the U.S. and Latin America.
 - Only 10 million acres
 - Forest Stewardship Council (FSC)
 - Record keeping requirements for "chain of supply."
 - 22 million acres in the U.S.
 - The U.S. is divided into 9 separate regions.
- Individual Renewable Fuel Producer Verification System
 - Annual audit by a third-party.
 - Not clear if EPA or renewable fuel provider pays for auditors.
 - Requires proof from feedstock producers that the land was actively cultivated prior to December 2007. Proof can consist of feedstock producers' written records.
 - Renewable biomass includes crop production, crop residue, and actively managed trees.
 - Written certification from the feedstock supplier that the feedstock qualifies as renewable biomass.
 - Sworn forester statements that the trees on non-federal land used for cellulosic ethanol were slash or pre-commercial thinning.
- Self-Certification
 - At the time of sale or delivery, the farmer signs a contract claiming the feedstock meets RFS2 land requirements.
 - Renewable fuel producer is responsible for confirming the farmer is correct, which in effect, requires the renewable fuel producer or a third party to verify the farmer's claims through a periodic on-site visit.
 - EPA would review the renewable fuel producer's records and site provisions. Note that there are issues with EPA access to USDA Farm Service Agency (FSA) records, but individual farmers could likely access such records in providing proof to renewable fuel producers.
 - Aggregate-level USDA data could be used to signal the cultivation of new agricultural land that could find its way into feedstock production.

- Individual Renewable Fuel Producer Quality Assurance Program
 - The renewable fuel provider would develop a formal set of procedures to determine if corn delivered by a farmer came from previously cultivated land or newly cultivated land. The plan is required to document the movement of the corn from the farm to ethanol plant.
 - EPA would have quarterly unannounced third-party inspections of the Quality Assurance Program for the renewable fuel producers and the elevators and farmers that supply them.

- Industry-Wide Quality Assurance Program
 - Model is the Reformulated Gasoline Survey Association.
 - Independent verification system
 - Set rules (survey plan to be submitted to the EPA)
 - Independent surveyor
 - Establish a sampling and testing program
 - Methodology for determining when the survey samples would be collected, locations of the surveys, and number of inspections and any other EPA requirements.
 - The quality assurance program would be funded by involves parties or some subgroup (renewable fuel producers).
 - Every quarter, a sample of renewable fuel producers would be audited.

- EPA-Established Chain-Of-Custody Tracking System for Renewable Fuel Producers.
 - This is an EPA-mandated system for tracking the corn from the farm to renewable fuel provider. It is similar to certain types of identity preservation programs, except that procedures to avoid product contamination would not need to be incorporated.
 - Land information would transfer with the feedstock.
 - Renewable fuel producers would be responsible for maintaining all the chain-of-custody records.

- EPA Mapping Website
 - Feedstock providers would be able to provide a standard land parcel identification code on a bill of lading.
 - Costly system to build, especially without USDA-FSA information sharing.
 - Could be part of a verification system for proposals described above.

- EPA establishes a base level of acreage of biomass feedstocks, and the need to verify that feedstock does not come from newly cultivated land would only be triggered when this level of planted acreage is exceeded.
 - There is generally good reporting by the USDA for crops that have traditionally been used for biofuel production.
 - Still, setting the baseline could be contentious, especially for non-traditional crops.

- As long as the baseline is not breached, it is assumed that any year-to-year increase in acreage is not specifically for biofuel consumption.
- Potentially expensive for renewable fuel producers because there could be a lag in determining that the baseline was exceeded, in which case renewable fuel producers could have to retroactively comply with verification requirements.

D. Conclusions about the Approaches to Meeting the Renewable Biomass Definition in RFS2

The main differences between approaches one through six is if the verification system would be administered by an individual renewable fuel producer or industry-wide. The EPA clearly pointed out an industry wide third-party program would be less expensive because the EPA would only audit a sample instead of every operation. Furthermore, the EPA pointed to the benefits of an industry-wide quality assurance program similar to the Reformulated Gasoline Survey Association. One industry wide system that is developed by the industry with EPA approval would make the EPA's responsibility of monitoring feedstock much easier than many different systems.

Under the current proposed rules, the self-certification approach requires the collection of producer records to prove the contract the farmer signed at time of delivery is true. Since the farmer is not legally obligated to provide the records, producer records must be collected before the ethanol company buys the corn. The farmer will be required to manage the land documentation and maintain the records. In addition, the frequency of EPA audits range from a yearly sample of renewable fuel providers to quarterly audits from every renewable fuel provider.

The EPA mapping system would be very expensive and complicated to implement. The EPA questions if Congress would be willing to fund the development and operation of a mapping system.

A trigger system would be the most efficient and least expensive for the renewable fuel provider. EPA establishes a base level of acreage of biomass feedstocks, and the need to verify that feedstock does not come from newly cultivated land would only be triggered when this level of planted acreage is exceeded. The long-term agricultural land trends in the U.S. suggest it is unlikely that the baseline acreage will be exceeded through 2022.

E. Ethanol Costs Associated with Meeting the New Biomass Definition

Since these requirements are new and the costs have not previously been incurred by the industry, the associated costs cannot be determined from public reports or even from renewable fuel producers' accounting records. Accordingly, Informa conducted a survey of a sample of U.S. ethanol producers, in order to elicit opinions regarding the

costs that will be associated with the key regulatory compliance requirements. In addition, Informa conducted a survey of elevators to discover their concerns about the RFS2 and how they would accommodate the new RFS2 renewable biomass definition. Twelve ethanol companies responded that represent 20% of the total U.S. ethanol capacity. In addition, 12 grain elevator companies responded representing a wide array of operations in different regions of the country.

- Only one respondent located on the fringe of the northwestern Corn Belt knew of newly cultivated land being brought into production in their trade area since December 2007. Most people interviewed were aware of a small amount of CRP and pasture land being planted to corn (note that CRP and pasture land are considered to be actively managed according to the proposed rulemaking). The managers claim that when the price of corn was at record highs, farmers were talking about greatly expanding corn acreage until they took inventory of the limitations concerning their farming operation and laws governing bringing land into cultivation.
- A minority of the ethanol companies contacted would hire new staff or establish new recordkeeping systems in order to track whether grain delivered came from a field that had come under cultivation after 2007.
- A majority of the ethanol companies would use internal staff rather than a third-party certifier to verify feedstock suppliers' records regarding how much grain comes from previously cultivated fields. For verifying feedstock supplies that come from an elevator, internal staff might not be an option. Several elevator managers commented that they are not allowed to show records without the legal department's approval. In addition, the elevator managers are not willing to share their farmer list with a potential competitor for grain. It is very likely ethanol plants that cannot buy all their grain directly from the farmer or who do not have a longstanding relationship with an elevator will be hiring a third-party to coordinate with elevators on feedstock verification.
- A majority of ethanol companies would prefer a company level verification system to an industry-wide verification system. It should be noted that the ethanol companies are under the impression that the elevator will allow them to review the farmer's documentation. One method to solve this potential problem would be an industry-wide verification system that is compatible for the farmers, elevators, ethanol plants and EPA.
- Two of the respondents (elevators and ethanol companies) are aware of third-party certifiers, such as for organic crops, that operate in their areas.
- For ethanol companies that would have to hire employees for tracking the status of feedstock being delivered or for conducting verification programs with farmers, the typical cost would be \$60,000 per additional employee at each facility the company operates. One ethanol company representative said the true cost would be 5 employees per plant with a total cost of \$500,000. Other ethanol companies would employ improved tracking (software) systems that would typically cost \$5,000 plus an annual operating fee of \$5,000 to \$10,000.

- The expected cost of a third-party certifier varied considerably among the ethanol plants interviewed. One representative estimated the cost of a third-party operation is estimated 50% of a full-time employee for each ethanol plant, or \$30,000. One respondent believes the cost for third party verification would be \$500,000 per ethanol plant. This likely reflects the lack of experience of ethanol plants with having to use such certifiers.
- A minority of companies have used a professional engineer in the past to certify the configuration of their facilities. The cost of such services ranged from \$10,000 to \$150,000 per ethanol plant. The \$150,000 estimation is a real cost that was incurred within the previous two years.
- Two companies interviewed have plans to produce cellulosic ethanol at the same plants where they produce corn-based ethanol. Both companies indicated the design of the plants would already allow them to comply with the new RFS2 rules regarding feedstock.
- The recordkeeping system required to track the feedstocks that will be audited by the EPA received the widest array of answers. A very small ethanol company that uses non-grain feedstock does not believe the recordkeeping for the feedstocks would cost anything because their feedstocks come from a very limited group of companies. Additionally, some cooperative ethanol companies believe the current corn check off system will allow them easily to capture the required documentation. Some ethanol companies believe the annual EPA feedstock audit will cost \$500 while other ethanol companies believe \$2,000 to \$5,000. Fifty percent of the respondents believe the audits would require an additional employee and part time accountants that will cost on average \$33,833 per year. Excluding the small ethanol companies, Informa believes the discrepancy in the answers is due to a pattern that emerged. The respondents that said the EPA audits would be inexpensive assumed they would hire one or more full time employees at \$60,000 annually per ethanol plant to track the feedstock. Meanwhile, the ethanol companies that believe the EPA audits would be expensive all assumed they would not have to hire an employee to track the feedstock. The only exceptions were a cooperative that believed the staff and system are in place due to corn check off requirements and a corporation that would need an additional employee for each function.
- When the costs of tracking feedstock and participating in EPA audits are combined, a typical ethanol company will have to hire one extra employee at every plant at a cost of \$33,833 to \$60,000. The \$33,833 employee is generally for smaller ethanol plants where the staff in place will try to work more overtime to help the new employee.
- A majority of companies did not believe that other recordkeeping and reporting requirements (e.g., more frequent RIN reporting and submission of an annual Proposed Production Outlook) would result in significant additional costs. That being stated, the four ethanol companies that are actively exploring a new or improved RIN reporting system reported the cost ranges from \$20,000 to \$50,000 with one respondent at \$250,000. The \$250,000 estimation is mostly new software and the labor requirement will not be very

Compliance Costs Associated with the Proposed Rulemaking for RFS2

much. Approximately \$35,000 is more typical of what a new RIN reporting system would cost each ethanol plant if their current system is unable to handle the new RFS2 requirements.

- Only one of the ethanol plant and elevator managers believed farmers would be able to segregate corn in on-farm storage. With higher crop yields and more corn acres, corn yields more than competing crops, and on-farm storage is at a premium. In addition, a farmer would not want to effectively reduce his storage by not commingling his corn.
- Elevator managers believe a major complicating factor with the new RFS2 standard is the need for more elevator storage due to reduced elevator capacity utilization. Elevator managers were against the idea of segregating corn based on whether it comes from previously cultivated land or newly cultivated land, since the bulk handling system is designed to handle fungible crops. One elevator manager cited that elevators are paid to store grain, and their economics are based on high throughput (i.e., the number of times an elevator can turn over its inventory). Another elevator manager indicated that elevators also make money by blending different grades of corn to create a specific grade. Furthermore, with increasing crop yields, demand for elevator capacity is at a record level (see Table 2).

Table 2: U.S. Total Crop Production by Transport Region (Million Tons)

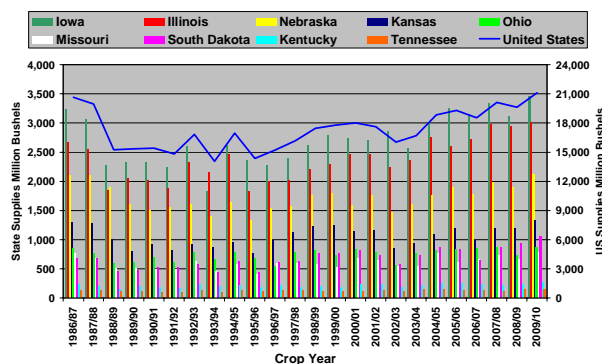
Region	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10			
								Informa ¹ 08/05/2009	USDA ² 08/12/2009	Informa ¹ 09/03/2009	Difference 2008/09
North Atlantic	4.4	6.1	7.5	6.7	7.0	7.2	8.0	7.8	7.9	8.3	0.3
Mid-Atlantic	3.8	4.9	6.4	5.4	5.6	4.7	5.6	5.5	5.5	5.7	0.1
Southeast	9.3	11.8	13.2	11.8	11.4	12.2	14.9	15.1	15.3	16.0	1.0
Lower Mississippi	26.6	28.2	34.3	25.8	27.2	38.2	35.9	37.5	37.8	38.1	2.2
OIMK	53.7	66.4	75.1	72.7	73.9	74.6	70.5	76.5	76.5	78.2	7.7
Upper Mississippi	125.3	126.8	153.2	138.9	140.3	156.5	149.7	160.5	160.3	165.3	15.6
Northern Plains	86.8	94.2	101.2	106.4	95.1	109.1	112.9	115.3	115.7	117.8	4.9
Central Plains	60.5	75.2	83.6	84.8	74.0	89.2	89.3	97.3	97.0	97.1	7.8
Texas and Oklahoma	16.1	19.4	20.2	17.4	11.2	21.5	21.4	16.6	16.8	16.2	-5.3
North Pacific	9.9	10.7	12.1	11.3	10.5	10.4	10.7	10.5	10.7	10.6	-0.1
Southwest	3.1	3.2	3.6	3.1	2.4	3.4	4.2	3.5	3.4	3.4	-0.7
Total	399.3	446.9	510.2	484.2	458.6	527.3	523.0	546.1	546.9	556.6	33.6

Projections in Bold

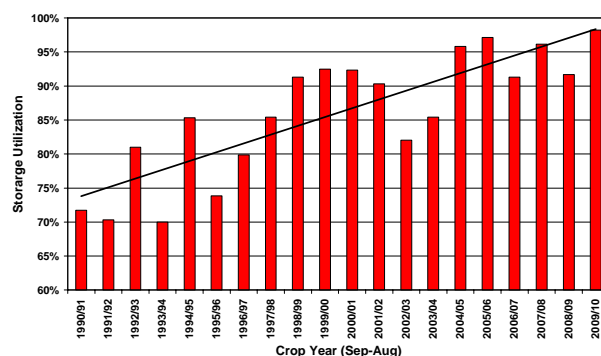
¹Informa's most likely final production estimate

²Informa's most likely final production estimate adjusted for USDA changes to corn area

Fall Grain Supplies (Sep. 1 Stocks & Fall Harvest)



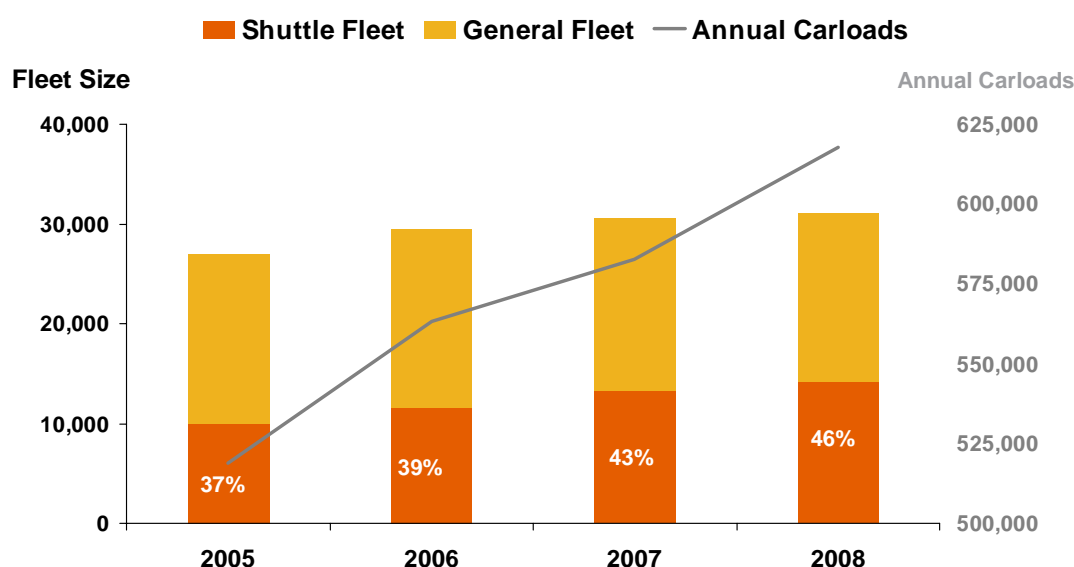
Annual Grain and Oilseed Storage Utilization



- Due to the very small amount of land brought into cultivation after December 2007 and high elevator capacity utilization, no elevator managers would segregate the corn from newly cultivated fields. If an elevator has a supply agreement with an ethanol company, the elevator might refuse corn from newly cultivated land. The ability of the farmer to sell the corn from newly cultivated land into other marketing chains further diminishes the need for corn segregation.
- Several elevator managers cited previous experience with genetically modified (GM) corn varieties that were not approved in the EU as an example of corn they similarly refused to handle. They believe by tracking only a portion of a farmer's corn sales, the farmer could easily provide documentation for corn grown on a different field within the farm that would appear to be corn grown on land that was cultivated prior to December 2007.
- The larger problem than corn segregation is the ability of farmers to deliver corn into other marketing channels without providing documentation. All elevator managers agreed they would have to receive the documentation prior to harvest, or at least before the corn went into the bin. This will result in truck drivers who do not have the paperwork being pulled out of the line. Until the farmers adjust to the new rules, the new RFS2 will be a significant hindrance, which ultimately will result in lost business as the farmer switches corn delivery to an elevator that does not require documentation. This will create a two-tier corn market: corn without documentation and corn with documentation. Therefore, the RFS2 standard creates a new level of inefficiency to the market. The amount of cost associated with the new inefficiency will depend on how the ethanol plant receives its grain, farmer options and location of the ethanol plants.
- It is generally believed a premium up to 5 cents per bushel would be required for the farmers to provide feedstock documentation. In locations where the farmers' selling options are limited to elevators who all sell to ethanol plants, the farmer would be forced to provide the information cheaper than in locations where the farmers' selling options are numerous. The belief is a premium of 2 to 5 cents per bushel premium would be required for the farmer to comply.
- The country elevators or local elevator managers believe for a handling premium of 5 cents a bushel they could provide ethanol plants with corn that has documentation. One elevator manager reported they receive a 5 cent per bushel handling charge for non-GM corn. Another elevator manager said he "will not anger the farmer for little opportunity."
- A practical problem is many local elevators complete directly with ethanol plants and do not want the ethanol plants to see which farmers provide the country elevators with grain. In addition, privacy concerns and legal concerns also limit the willingness of the country elevator to allow an ethanol plant to audit their records. In such cases, it is likely that the ethanol plant will need to use a third party to verify that the elevator supplied grain that was produced on previously cultivated fields.

- For an ethanol plant that receives all of its grain directly from the farmer and country elevator, the cost would range from zero to 10 cents per bushel. Ethanol plants that have a supply agreement with farmers could be forced to provide production documents for no charge. Ethanol plants that are owned by companies with grain elevators will be charged a fee as corn ownership changes hand. Ethanol plants that are in regions with local corn supply, but strong competition from animal operations, could be forced to pay a 10-cent-per-bushel premium.
- Terminal elevators and river elevators are far less willing to handle the required documentation for the corn needed to sell to ethanol plants, much less pay a premium. These elevators primarily receive the corn from country elevators and based on their experience with the bioterrorism laws, do not believe it is economically possible to collect the documentation. Under the bioterrorism laws, the terminal elevator is required to get the physical address for the truck drivers and country elevators. The country elevators handle the documentation for their customers. This relatively simple law resulted in major delays as new truck drivers arrived without documentation or not the right documentation. For these very large elevators dependent on high corn throughput from trucks and railcars to barges or shuttle trains for shipment to final destination, speed is the key to profitability. The potential delays associated with collecting documentation for the corn to be eligible for ethanol plants currently presents too great a risk with little reward.
- Railroads design shuttle trains to maximize efficiencies in the bulk movement of grain. For this reason, elevators with shuttle stations require a 25 cent per bushel handling fee for identity preserved crops and still believe they lose money. The new RFS2 standard introduces a vast amount of inefficiencies that are completely opposite of what the transportation providers are attempting to accomplish. For example, since 2001, grain elevators with shuttle grain capability on the BNSF railroad have increased 152%. Since 2005, the increased efficiency from shuttle trains have resulted in BNSF shipping 19% more grain with 1% fewer cars (see Figure 1). Railroads have encouraged the shift towards elevators with shuttle grain capability through pricing of their rail service.
- This could present a problem for “destination” ethanol plants located outside the Corn Belt and close to locations where ethanol is consumed. For such ethanol plants that depend on shuttle trains for corn supply, a total corn premium of 35 cents per bushel is required. One elevator manager cited a non GM corn program with a 25 cent handling fee not getting traction. During harvest, when the export trains are operating at full speed, shuttle station managers expressed doubt if they would take the time for corn land documentation.
- Another major issue brought up repeatedly by elevator managers is how strictly the new rules will be enforced. A complaint about the bioterrorism laws and other restrictions is unethical operators are able to undercut the honest operators. The end result is a lower per bushel handling cost if the EPA is creating a program without the funding needed to enforce the law.

Figure 1: BNSF Shuttle Train Fleet and Total Grain Moved



Source: BNSF Railroad

- Another risk cited by elevator managers is a lawsuit arising from ethanol company being fined because the farmer lied to the elevator.
- On the other hand, if ethanol production is profitable enough to offer more of a price premium, the farmers will flood the elevator with feedstock and associated documentation. The paperwork associated with loan deficiency payments (LDPs) always results in employees having to work overtime when the LDP is most favorable. Elevators envision the same situation for this program.

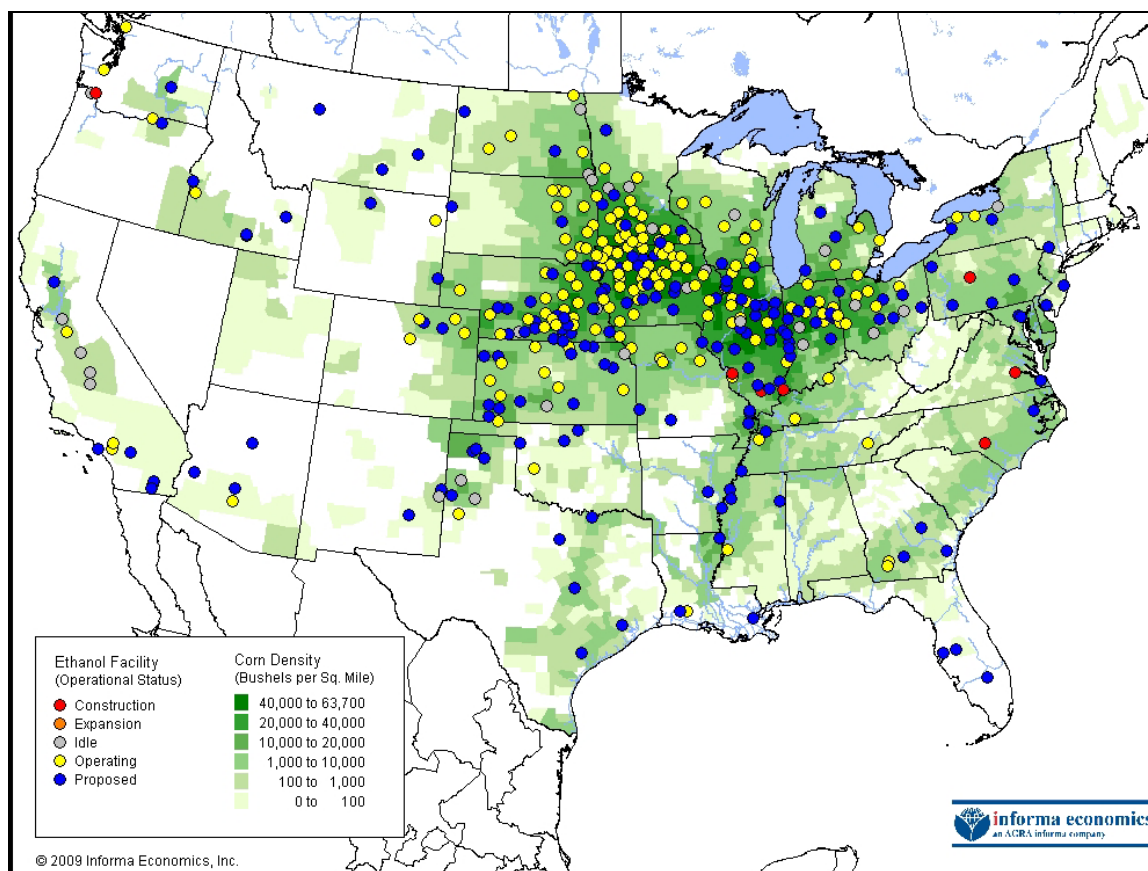
F. The Cost of the Renewable Biomass Definition on the U.S. Ethanol Industry

According to the Renewable Fuels Association (RFA) ethanol plants that use grain for feedstock and that are located outside the expanded Corn Belt account for 1.3 billion gallons of nameplate capacity out of 13.0 billion gallons, or 10.3% of total capacity. Ethanol plants located in the Corn Belt that use grain for feedstock, account for 11.7 billion gallons of nameplate capacity. The expanded Corn Belt includes IA, IL, IN, KS, KY, MI, MN, MO, ND, NE, OH, SD, and WI. The main difference between destination ethanol plants and ethanol plants located in the Corn Belt (see Figure 2) is destination plants are more dependent on railroads and, to a lesser extent, barge companies.

Also according to the RFA, ethanol plants that use seed corn, cheese whey, potato waste, wood waste, beverage waste, and sugar cane bagasse for feedstock account for only 24.9 million gallons of nameplate capacity out of 13.0 billion gallons, or less than one tenth of a percent of total capacity. Seed corn ethanol plants are not concerned

about the new regulations because seed corn is already an identity preserved crop. In addition, the relatively small size and fewer customers limit the complexity of record keeping.

Figure 2: U.S. Corn Production and Ethanol Map



The start-up cost to implement the changes required by the RFS2 will cost a typical ethanol plant \$2,177 per million gallons of capacity (see Table 3). Managers of Corn Belt ethanol plants with less than 60 million gallons of capacity tend to be cooperative owned and expect their start-up cost to be \$873 per million gallons of capacity. Managers of Corn Belt ethanol plants with more than 60 million gallons expect their start-up cost to be \$2,845 per million gallons of capacity.

The major reason for the discrepancy is many cooperative ethanol plant managers believe they already have systems sufficient for feedstock tracking in place. As a result, the estimated cost for tracking feedstocks is \$1,570 per million gallons less than larger ethanol plants (see Table 3).

Managers of large ethanol plants in the Corn Belt believe that upgrading software to handle the eventual real time RIN production is an investment that must be made. Several managers of small ethanol plants in the Corn Belt are hoping the existing RIN reporting systems will be sufficient.

Table 3: New RFS2 Start-up Costs for Ethanol Plants (Dollars per Million Gallons)

Type of Ethanol Plant	Size (million gallons)	Cost for Tracking Feedstock	RIN Reporting	Total Cost
		Start-up Cost Per Million Gallons		
Small Non Grain	25	-	-	-
Corn Belt Ethanol Plants (60 Million Gallons and Over)	7,541	1,610	1,235	2,845
Corn Belt Ethanol Plants (Under 60 Million Gallons)	4,153	40	833	873
Destination Ethanol Plants	1,345	1,335	1,165	2,500
Total	13,063	1,080	1,098	2,177

Source: Survey of ethanol plant managers

The annual cost to implement the changes required by the RFS2 will cost a typical ethanol plant \$4,272 per million gallons of capacity for total feedstock costs other than handling, and \$27,978 per million gallons for handling charges (see Table 4).

Managers of Corn Belt ethanol plants with less than 60 million gallons of capacity tend expect their total feedstock cost other than handling to be \$1,201 per million gallons of capacity. Manager of Corn Belt ethanol plants with more than 60 million gallons expect their total feedstock cost other than handling to be \$5,842 per million gallons of capacity.

Like the start-up costs, the managers of small ethanol plants in the Corn Belt believe they can obtain and verify the feedstock records for much less money (\$710 per million gallons) than the large ethanol plants in the Corn Belt (\$4,013 per million gallons).

The cost of third party engineering to certify the configuration of the ethanol plant is believed by managers of large ethanol plants in the Corn Belt (\$1,449 per million gallons) to be much greater than managers of small ethanol plants in the Corn Belt (\$120 per million gallons).

Handling charges are estimated to be 2.5 cents per bushel for corn bought directly from the farmer, 7.5 cents per bushel for corn purchase from a country elevator, and 35 cents per bushel for corn procured through a shuttle station. The end result is a handling charge of \$127,737 per million gallons for destination ethanol plants, \$19,161 for large ethanol plants in the Corn Belt, and \$11,861 for small ethanol plants in the Corn Belt.

Table 4: New RFS2 Annual Costs for Ethanol Plants (Dollars per Million Gallons)

Type of Ethanol Plant	Size (million gallons)	Annual Cost Per Million Gallons						Total Feedstock Cost	Handling Charge	Total Cost
		Cost for Tracking Feedstock	Cost for Feedstock Verification	Cost for Feedstock Audits	Third Party Engineering	Total Feedstock Cost				
Small Non Grain	25	-	-	-	-	-	-	-	-	-
Corn Belt Ethanol Plants (60 Million Gallons and Over)	7,541	1,745	2,268	380	1,449	5,842	19,161	25,002		
Corn Belt Ethanol Plants (Under 60 Million Gallons)	4,153	332	378	371	120	1,201	11,861	13,062		
Destination Ethanol Plants	1,345	1,498	1,937	378	1,217	5,029	127,737	132,767		
Total	13,063	1,267	1,628	376	1,000	4,272	27,978	32,250		

Source: Survey of ethanol plant and elevator managers

G. Conclusions Regarding Regulatory Compliance Costs

At the farm level, the cost of RFS2 will mainly take the form of extra management and recordkeeping time associated with the renewable biomass definition. For a minority of farmers who have new land under cultivation, there might also be some costs associated with inefficiencies of trying to store corn (and soybeans) from newly cultivated land separately. Participants in the survey of ethanol operations and grain elevators expressed the opinion that farmers would require a premium of up to 5 cents per bushel to offset the costs of providing feedstock documentation.

This is at the low end of premiums that have typically been received by farmers for such value-enhanced corn types as non-genetically-modified or high-extractable-starch corn, which in the past have had premiums ranging from 5 cents per bushel up to 15-20 cents per bushel; however, there are no intrinsic qualities that will differentiate commodity corn going to ethanol facilities from corn going to other uses, and there is no need for contract production and no crop yield discrepancies that could cause farmers to charge more of a premium.¹ In the case of ethanol feedstock under RFS2, the premium is primarily for the effort associated with documentation.

It is also possible that in some geographic areas, farmers will not be able to charge any premium, and costs will be forced down to the farmer level of the supply chain. This could occur, for example, in an inland area where ethanol facilities are the main buyers of corn and there are no large livestock operations, shuttle-train-loading elevators or river elevators.

Depending upon the approach that the EPA ultimately requires ethanol facility operators to use, the land documentation might have to be transferred with the feedstock as it moves through the value chain from farmer to ethanol plant. Proof of the land being actively managed can consist of sales records; purchasing records for land treatments, such as fertilizer, weed control or reseeding; a written management plan; or documentation of participation in an agricultural program sponsored by a federal, state or local government agency. The rule requires the farmer to assign corn to a common land unit within a farm.

Ideally, the farmer will register with potential buyers before harvest. If a farmer wants to sell corn to an ethanol plant or an elevator that sells corn to ethanol plants, the farmer will have to be sure the documentation is with the truck driver. During harvest, time is at a premium and delays can be extremely expensive. The added confusion the RFS2 rule creates will result in increased cost to the farmers, in cases when truck drivers forget the paperwork or brought the wrong paperwork. In addition, the storage of the paperwork and possible audits result in increased costs and loss of privacy.

Based on the surveys of ethanol operations and grain elevators, it is estimated that the up-front cost to the ethanol industry for compliance with the new RFS2 regulations will

¹ U.S. Grains Council, *Value Enhanced Corn Report 2005/06*

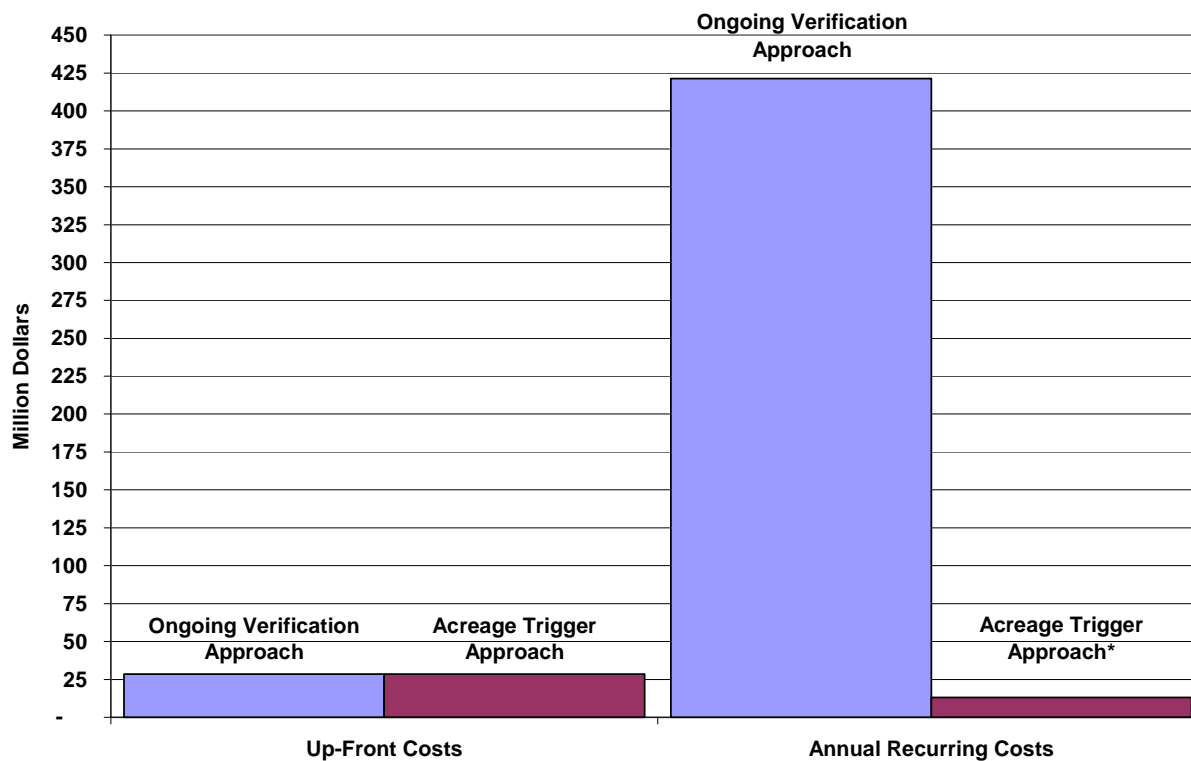
be approximately \$30 million, but the annually recurring compliance costs will be approximately \$420 million. (Based on the current size of the ethanol industry, this annual cost is equivalent to 3.2 cents per gallon, or 8.8 cents per bushel of corn used in ethanol.) It should be noted that these estimates are based on costs to a “typical” ethanol plant, and some of the people surveyed cited higher costs, particularly regarding up-front costs. This assumes that in the final rulemaking, the EPA will require an approach in which individual ethanol operations will be required to obtain documentation for feedstock and participate in verification processes and audits on an ongoing basis.

If a baseline level of production of biomass feedstocks has to be exceeded for the recordkeeping requirements to be triggered, then the up-front cost of approximately \$30 million would still have to be incurred by the industry in case the baseline level were exceeded in any given year. If reporting were triggered, then the cost in that individual year would still be \$420 million. However, for the ethanol industry, the trigger might be based on whether corn acreage in a given year exceeds acreage in 2007, the year the EISA was passed. Notably, due to high prices, corn acreage in 2007 was 93.5 million acres, the highest level since the 1940s. Based on the trajectory of corn yields, ethanol production and other domestic and export uses of corn, Informa does not expect that U.S. corn acreage will exceed 93.5 million acres during the next decade, assuming normal weather in the U.S. and other major crop-producing countries. Accordingly, it would be expected that only the up-front cost would be incurred by ethanol plants in this case, and the annual cost associated with feedstock procurement would not be triggered. Only the relatively minor costs associated with registering facilities, reporting RINs more frequently and producing and annual production outlook would be incurred. These costs are estimated at roughly \$15 million annually (see Figure 3). (Informa also expects total U.S. crop acreage, including CRP, to remain under 2007 levels throughout the forecast period.)

The implementation of the requirements associated with the renewable biomass definition also could create a two-tier corn market in the U.S., with one price for ethanol plants and another price for other users. It should be noted that elevators would incur a cost for the portion of corn not sold to an ethanol plant.

An ethanol plant’s competitiveness will depend on handling charges. For the 10% of ethanol plants that are dependent on shuttle train service for feedstock, the new feedstock requirements will dramatically reduce competitiveness.

Figure 3: Up-Front and Annually Recurring Costs Associated with Regulatory Compliance under EPA Approaches



* Assumes acreage does not exceed trigger for reporting.

Source: Survey of Ethanol and Elevator Managers