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August 5, 2011

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Via electronic mail to lcfssustain@arb.ca.gov, mwaugh@arb.ca.gov, and cspranger@arb.ca.gov

Re: National Biodiesel Board Comment on draft LCFS Sustainability Principles, Criteria, and Indicators

Dear Mike and Carmen:

As the Air Resources Board (ARB) develops sustainability requirements for fuels as part of the Low-Carbon Fuel Standard (LCFS) program, we respectfully request that staff keep the following points in mind:

- This is a highly complex issue. As such, we, as strongly as possible, urge the ARB to not rush the development of these criteria. Some have discussed having a draft regulation publicly available by the end of the year. We can see no way this is feasible if the end product is to be credible and effective.
- It is important to recognize protections that currently exist in the form of laws, regulations, and voluntary programs that are specifically designed to prevent negative environmental, social, and economic impacts. Duplication and interference with these policies and programs should be avoided.
- Any additional regulatory requirements placed upon fuel producers or obligated parties should be considered only after clear, documented evidence is presented demonstrating specific negative impacts are likely to occur as a result of the LCFS. It must be demonstrated that enforcement of existing requirements does not mitigate probable impacts. It must further be demonstrated how any additional requirements as part of the LCFS will specifically and directly address probable negative impacts. This type of fact-based process would help ensure that new regulations address issues that are not currently being mitigated in some other way.
- When developing criteria, the ARB should take into consideration the fact that sectors of the fuel industry differ significantly with respect to feedstocks, supply chains, etc. A “one size fits all” approach to certification of biofuels, or any fuels for that matter, will not lead to a successful outcome. In essence, what is most important is that a policy is put in place that leads to sustainable fuels being used in the California marketplace, not the process by which sustainability is determined (see farm-level certification). For example, it would be impossible

for producers of Canola biodiesel to comply with the regulation as drafted. Considering the fact that Canola has been given high marks for GHG reduction by both U.S. EPA and the ARB and that it is grown in countries that are highly evolved agriculturally (U.S. and Canada), is it desirable to remove that product from the marketplace simply because some are smitten with a specific process for determining sustainability Only allowing approval through direct certification would be akin to writing into the LCFS a preference for biofuels from dedicated energy crops when biofuels from coproducts and byproducts actually have the most desirable sustainability profile.

- The ARB should ensure that any additional regulatory requirements placed upon fuel producers or obligated parties can be implemented without adding undue cost to commercial operators, consumers, or regulating agencies. ARB should ensure that it is physically and economically possible to comply with the proposed regulation, and that doing so will not cause unintended negative consequences. ARB should also ensure that the agency has adequate resources to review, process, and approve certificates in an accurate and timely manner. This includes professional review of environmental impact statements and environmental management plans as mentioned in the draft principle document.
- Sustainability criteria must be applied equally to all fuels in use in the California marketplace. To date, ARB has drafted principles, criteria, and indicators for biofuels. The ARB has, however, failed to address the negative impacts of crude oil extraction, transport, refining, and distribution. The ARB has also failed to address the negative environmental impacts of natural gas extraction or the production of electricity via coal, nuclear, or hydroelectric dams. All energy alternatives must be evaluated uniformly to avoid exclusion of certain fuels, which will be displaced in the market by fuels of unknown impact. Failure to adhere to this principle would leave the ARB susceptible to a legal challenge.

<u>NBB supports sustainability principles.</u>

In a general sense, the National Biodiesel Board (NBB) agrees with the 12 sustainability principles adopted in the ARB draft regulation. In fact, the members of the National Biodiesel Board adopted a very similar set of sustainability principles in February of 2009. We find that these principles are consistent with those being considered by numerous organizations, including ISO (International Standards Organization). We do, however, have serious concerns with regard to numerous details of the criteria and indicators drafted by the ARB. We recognize that drafting such detailed criteria and indicators is a very difficult task considering the numerous factors that must apply to numerous feedstocks, and biofuel production strategies from diverse regions of the world. We note that, worldwide, no organization, including voluntary certification schemes, has yet implemented sustainability criteria and indicators to the level of detail suggested by the ARB draft. A priority in developing criteria, indicators, and mechanisms for enforcing them must be to ensure that such mechanisms are practical to implement for commercial producers of low carbon fuel. The priority to ensure practical implementation of the LCFS should be placed on commercial fuels that are realistically poised to meet California's GHG reduction targets.

The U.S. biodiesel industry is a prime example of a commercially viable advanced biofuel that stands ready to supply significant volumes of U.S. EPA-certified, low carbon fuel. U.S. biodiesel, from a diversity of feedstocks, has a favorable carbon intensity value (as determined by the ARB), and lifecycle data currently exists to prove it meets the sustainability principles.

Farm-level certification is not practical for the most sustainable fuels.

The farm-level certification proposed by some stakeholders is not practical to implement for today's commercially viable fuels. Farm-level certification can be applied only to dedicated energy crops. With all due respect, those supporting farm-level certification lack an understanding of biofuels that only use coproducts and byproducts of other industries. The U.S. biodiesel industry supplies the most sustainable liquid fuel available. This high level of sustainability derives from many factors including diversity of feedstock utilization, superior GHG reduction, and the efficient utilization of wastes, byproducts, and coproducts of other industries. The vast majority of biodiesel produced in the U.S. comes not from dedicated feedstocks, but from coproducts and byproducts of other industries. The synergies between biodiesel production and the production of food, livestock, and animal feed are what provide biodiesel with sustainability benefits that cannot be matched by other fuel options. Biodiesel minimizes the environmental impact and maximizes the positive economic and social impact by optimizing the use of underutilized and undervalued coproducts. These benefits have largely been recognized for biodiesel produced from animal fats and used cooking oil. The same relationship also applies for vegetable oils like soybean oil and Canola oil. Oilseed crops are not planted for the production of biodiesel.

Coproducts have important sustainability benefits.

This coproduct relationship delivers environmental benefits because no crop land and no inputs, such as water, nutrients, and energy are dedicated to the production of renewable energy. This coproduct relationship optimizes the beneficial uses from crops that will be planted anyway to satisfy demand for livestock feed and other uses. An analogy describing this coproduct relationship could be roommates sharing an apartment. The rent and utilities (land and inputs) are fixed costs. By sharing the same space, heat, and light, etc., multiple roommates (food and energy products) can enjoy the benefits of the same apartment without multiplying the input costs (rent & utilities) they would experience if they lived in separate apartments.

In the case of soybeans, 80 percent of every bean is nutritious protein meal used to feed livestock. Twenty percent of every bean is oil that can be used for biodiesel. Based on 2010 production data, approximately one percent of the total soybean harvest (by mass) was used for biodiesel. These ratios are not expected to change significantly as the biodiesel industry matures. Oilseeds, such as soybeans are planted to meet protein demand for livestock feed. Growth in biodiesel volumes will come from more efficient utilization of existing wastes and additional vegetable oil produced as a result of yield increases on existing acres, growing demand for livestock feed, and decreasing demand for high-trans-fat vegetable oils.

The federal RFS prohibits land conversion for the purpose of producing renewable fuel. USEPA requirements notwithstanding, simple economics dictate that the production of oilseed crops correlates with the demand for protein meal, and cannot expand solely in response to demand for vegetable oil. It is impossible for oil demand to drive the planting of oilseed crops in North America. Biodiesel demand in the U.S. has demonstrated a moderate increase in the price of vegetable oil. That increase has plateaued and corresponds to a decrease in the price of protein meal that is coproduced with the oil.[1] It is economically impossible for oil demand to drive up the price of whole soybeans and increase the planting of beans, because continued rise in the price of vegetable oil will be matched with a decrease in the price of protein meal. In the absence of an increased demand for livestock feed, the utilization of vegetable oil for biodiesel is self-limiting and confined to the volume of oil coproduced as a result of demand for livestock rations. In order to exceed the oilseed production dictated by demand for livestock feed, the input cost for producing the entire crop must be borne by the market for vegetable oil alone. This hypothetical scenario would result in an exponential increase in the price of oil-economically prohibiting the scenario of oil demand driving planting decisions.

Vegetable oils are critical to LCFS GHG targets.

Approximately 50 percent of US biodiesel production volume is based on soybean oil. Soybean oil is the largest single commodity used for biodiesel production in the U.S. While the volume of soybean oil-based biodiesel is small compared to the total volume of soybean oil production, the volumes brought to the biodiesel industry by soybean oil are crucial in establishing a biodiesel industry that is big enough to be a real player in the motor vehicle fuel industry. The significant volume of high quality oil and the technical investments made by the soybean industry make it possible to garner the attention of engine and equipment manufacturers, fuel quality regulators, and others that help make biodiesel a commercial reality. Without recognition and investment in engine testing, compatibility testing, and setting specifications, biodiesel would be a niche or boutique fuel, rather than a fungible diesel fuel. The sustainable volumes of soybean oil are also vital to the California LCFS, because a mix of vegetable oils, used cooking oil, and animal fats will be necessary to provide sufficient low carbon fuel to offset petroleum demand and meet the GHG reduction goals of the LCFS. Without flexibility to use some virgin vegetable oils, California will fail to meet the 10 percent GHG reduction goal set by the LCFS.

Typical commodity flows are complex and need to remain flexible.

Biodiesel producers are very diverse. There is a great range in scale of operation from a few hundred-thousand of gallons to over one hundred-million gallons per year. There is great diversity in feedstock type, and types of feedstock acquisition and feedstock processing. While this diversity makes it a challenge to generalize and describe the industry concisely and accurately, it is important to understand the typical biodiesel producer who purchases feedstock on the open commodity market. Most biodiesel feedstocks today, whether they are animal fats, used cooking oil, or virgin vegetable oil, are traded as

[1] Centrec Consulting Group, LLC. 2008. Soybean Co-Product Economics: Why Livestock Producers Should Use Biodiesel To Haul Their Soybean Meal.

commodities. In the vast majority of cases, the biodiesel processor or commodity purchaser does not have a direct relationship with the feedstock producer. This makes it impossible for biodiesel producers to provide farm-level (or producer-level) certification for the feedstock they purchase as commodities.

As an example, we will describe the typical flow of soybean oil into low carbon diesel replacement fuel. Soybeans are planted as a rotational crop with corn. Soybeans are legumes that convert nitrogen into useful nutrients and deposit these nutrients in the soil where they remain to enhance plant growth. Planting crops in rotation also has other benefits, such as naturally disturbing pest infestations that can worsen with repeated plating of the same crop in the same soils. The relative value of corn and soybeans can affect planting decision of farmers as they seek to optimize the value of their crop within a sustainable rotation pattern. What is important in this decision is the relative value of the whole bean to corn, not the value of the soybean oil. The demand for protein meal has overriding impact on the price of whole beans. As described above, the impact on whole bean prices as a result of oil demand is limited by the demand for protein meal. The incremental value of soybean oil can contribute to whole bean prices and help to maintain parity with corn prices, but it is not possible for soybean oil prices to incentivize planting of beans that would not otherwise be planted to produce protein meal for livestock, because oil compromises only 20 percent of the bean. In short, soybeans are not planted to produce oil, and they are certainly not planted with the intention of making biodiesel.

After being harvested, soybeans are typically sold to a local elevator where they are comingled and stored with beans from other farms. They may even be mixed with beans from previous harvest years. The farmer has no knowledge of where his or her beans go from there. The farmer will have no knowledge if they get fed to cows, pigs, or chickens, converted into food stuffs, converted in biobased products like car seat cushions, or processed into biodiesel. The farmer does not respond to demand for any of these end uses of soybean products. The farmer responds only to the commodity price of whole soybeans, which is affected by numerous factors including but not limited to weather, pests, and transportation issues.

Whole soybeans are likely to be crushed domestically or exported as whole beans. Foreign consumers of U.S. soy products have implemented policies to incentivize the importation of whole beans, in order to support the value added crushing industry within their economy. It benefits the U.S. economy to crush beans domestically and supply exports of value-added commodities. It also benefits the environment, because U.S. crush facilities operate with more environmental and labor safeguards. Developing domestic markets for vegetable oil incentivizes domestic crushing of beans rather than exportation of whole beans. This supports more jobs in the U.S.; reduces negative environmental impacts of off-shore crush facilities; and continues to supply the world with high value protein meal produced using advanced U.S. technology.

Some grain elevators may have co-located crush facilities, but most elevators must transport whole beans to more centralized facilities where beans can be crushed to separate protein meal, soybean oil, and other byproducts. It is possible for beans to change hands multiple times between the farm field and the soybean crush facility. Each time the commodity changes hands, there is no communication or knowledge of the end use of the soybeans beyond the next step in the commodity chain. The farmer,

nor the person who delivers the beans to the crush facility have any knowledge as to whether or not biodiesel will ever be produced from those beans.

The biodiesel facility must compete with the market price for every other use of soybean oil. If demand for partially hydrogenated soybean oil, for instance, is momentarily high, soybean oil will be directed to that market, and the biodiesel plant can sit idle. This illustrates the flexibility that exists and must be maintained for efficient distribution of food commodities. Commodity flows must be allowed to constantly readjust according to market demands. The U.S. biodiesel industry operates exclusively within the margins where biodiesel producers can take advantage of oversupply of undervalued or underutilized commodities. Certification that earmarks certain commodities for biodiesel interferes with the efficient flow of commodities.

After the crush facility, separated soy protein meal and vegetable oil are once again traded on commodity markets. Speculators may buy up and store either commodity to be sold again on the market at a future date. Protein meal may be fed locally or exported. Likewise, soybean oil may be used locally or exported. Local and export uses for the oil are numerous. 5-15 percent of the domestically crushed oil typically finds its way into biodiesel. This is only one percent of the total domestic soybean crop.

This brief summary lacks detail of how these complex commodity transactions occur and the winding path commodities take to their final end use. This summary illustrates that commercial-scale, farm-level certification is impossible, because the soybean producer has no knowledge of the product end use. Likewise, the biodiesel processor has no knowledge of the specific farm where the soybeans were originally grown. This is not to imply that the biodiesel processor does not know the general conditions for growing the soybeans crop. Official government data exists to describe the aggregate growing conditions of U.S. commodity crops in a very comprehensive way. While regional variations exist, data is readily available to quantify how U.S. biodiesel feedstocks meet the principles of sustainability.

<u>Sustainable farm practices goes beyond biofuel production.</u>

Some stakeholders have suggested that California could modify this national and international commodity distribution system for the purpose of certifying individual farmer operations. Impacting the distribution of food commodities to this degree is far beyond the scope of the LCFS and presents some very serious unintended consequences that need to be better understood before moving forward with landmark underground regulation of food production.

Hypothetically, if we attempted to certify the vegetable oil coming from an individual farm to a biodiesel plant, serious problems would be encountered. By earmarking a particular bushel of soybeans or quantity of oil for biodiesel, the flexibility to respond to market demand is encumbered in a very negative way. Between the time a crop is planted, cultivated, harvested, transported, and processed market demands are almost certain to change. An artificial earmark for LCFS certified product could prevent that oil from going into a food market or other use as dictated by supply and demand. Farm-level certification is certain to raise the price relative to uncertified commodities. For biodiesel, this would create a perverse situation where the high priced oil would be going to fuel uses, when fuel

should be the lowest priced use of such a commodity. While some stakeholders to this process have not been concerned about raising prices for fuel, they neglect that their proposal would also raise prices for food commodities. An increase in food commodity prices would result either from the increased cost of certification for that product or from the segregation of commodities for specific end uses. Physical segregation or earmarks for specific end uses, reduces the supply available to satisfy a given end use.

It is currently impossible to certify only the vegetable oil that is used to produce biodiesel. Certifying only the oil that ends up as biofuel feedstock will add exorbitant costs to biodiesel and potentially limit the supply and increase the cost for other uses of vegetable oil. The real world outcome of such a requirement would be insufficient volumes of certified feedstock for the biodiesel industry, and insufficient volumes of low carbon fuel to meet the LCFS goals. Soybean farmers would continue to produce an equivalent amount of soybeans. The loss of market for the one percent of their crop that goes to biodiesel, would not be large enough economic incentive to incur the cost and disruption of other markets suggested by farm-level certification for the LCFS.

The other hypothetic scenario is to force the certification of all oilseed crop production, not just the portion used for renewable fuel. This would, of course, raise the cost of all commodity and food products substantially. No entity has adequately predicted what this cost might be. Considering the massive impact it could have on the cost and distribution of food, this cost needs careful investigation and pilot-scale implementation before being enacted into regulation.

A glimpse at the scale of this was provided by some of the presentations before the LCFS sustainability Workgroup. There are over 400,000 commodity producing farms in the three states of Iowa, Illinois, and Missouri. Farm-level certification including crop-specific environmental management plans would require millions of certificates. Each of these farms likely has hundreds if not thousands of acres planted in a variety of crops with practices that change from season to season. Multiplying this effort to include another 15-20 crop producing states (not to mention the rest of the world) raises a serious question for the ARB's ability to manage this quantity of farm-level certificates. Beyond the sheer number of farm-level certificates, the detail suggested by the draft criteria and indicators is immense, and will require in-depth agronomic experience to critique and approve farm-specific management plans.

Many of the stakeholders supporting farm-level certification have likewise expressed interest in certifying the larger agricultural production industry regardless of the end use. While we hesitate to speak for those stakeholders, it is fair to say that they recognize biodiesel is a very small portion of the current agricultural production system, and that their concerns stem from how they perceive the stewardship of farmers that produce commodity crops flowing primarily into food uses. Since biodiesel is such a small market for all soy products, and since there is no segregation of soybean oil used for biodiesel, suggesting to certify biodiesel feedstock production is essentially a suggestion to certify the entire agricultural commodity production system. The ARB should resist the special interest groups' agenda to take on production agriculture through a backdoor in the LCFS regulation. The environmental interest groups have supported California's GHG reduction goals. The ARB and the U.S. biofuels industry can fulfill those GHG reduction goals with sustainably produced renewable fuels. The overhaul of the agricultural production system proposed by those special interest groups is a monumental and complex

undertaking. Such an undertaking will have significant ramification for the food distribution system and the national economy. The only prudent way to commence that discussion would be to take on the that issue directly involving elected officials, the USDA and state departments of agriculture, academic institutions with agricultural expertise, and farmer-led organizations. Such an overhaul would require expertise and authority that does not exist among the very capable, talented, and conscientious staff at the ARB.

International perspectives are different.

We recognize that the draft principles, criteria, and indicators adopted by the ARB have been modeled after those developed by the Roundtable on Sustainable Biofuels (RSB) and other international groups. It is important to recognize that those schemes were developed as voluntary mechanisms, and none of those schemes have been successfully implemented for commercial fuels in North America. The only certification schemes that have been implemented anywhere in the world are very specific to individual commodity products, such as palm oil and sugar cane. The ability for sugar cane and palm oil producers to recover the cost of certification is highly in question. However, these producers have at least been able to investigate supply chain certification, because bioenergy products represent a potentially large portion of their overall market opportunities. These types of commodities provide high outputs of oil and sugar per unit area, but provide very little value in the form of protein or other coproducts. Therefore, they respond to demand for sugar and oil, not livestock feed.

It is also important to recognize that these criteria and indicators for international feedstocks were developed with heavy thought toward underdeveloped nations that do not already have environmental, social, and economic protections in place. The US, Canada, and Europe have very robust laws and enforcement to uphold the sustainability principles. Groups like the RSB developed their criteria and indicators to compensate for the lack of protections in Africa, Asia, and Latin America.

Even Europe differs from North America in that they have set aside land that can be used for the production of industrial commodities and not for food uses. This scheme was put in place to limit production of food commodities and support minimum prices for food products. This serves a similar purpose as the Conservation Reserve Program in the U.S. However, instead of setting aside land for wildlife habitat, Europe allows other industrial production on their set aside lands. This mechanism has tainted the way Europe approaches certification for their Renewable Energy Directive. Because it is very easy for European producers to identify commodities flowing from their industrial set aside lands that don't mix with food commodities, and because they expect to import volumes from dedicated energy crops in Asia and South America, they have adopted supply-chain certification. Not welcoming competition from North America, and not recognizing the significant difference in commodity supply chains, Europe has adopted a certification structure that fails to include sustainable North American feedstocks. The ARB should avoid following an example that does not work for North America.

Existing regulations are already in place to limit environmental impacts of renewable fuel production.

During the next meeting of the LCFS Sustainability Workgroup, the ARB will be presented with findings from a University researcher who has identified a partial list of laws already in place that support the

sustainability principles. We urge the ARB to consider this partial list and to fully investigate the remaining laws that do not need to be duplicated in order to ensure sustainable production of low carbon fuel. This will ultimately save cost in implementing the LCFS by eliminating unnecessary regulation and certification burdens.

In these comments, we will briefly describe just a few existing laws and programs that address the environmental impacts of biofuel production and use in the U.S., including the RFS2 and a selection of USDA programs.

<u>The RFS2 prohibits direct land use change and severely limits indirect land use change.</u>

The federal Renewable Fuel Standard (RFS) enacted by the Energy Independence and Security Act of 2007 (EISA) is the leading policy impacting the use of renewable fuels in the U.S. In order to sell fuel in the U.S, fuel providers must be registered with the USEPA. In addition, providers of renewable fuels must register to participate in the RFS and the RIN (Renewable Identification Number) trading program. Registration as a renewable fuel producer is not optional. This requirement serves to ensure that obligated parties have access to acquire RINs equivalent to the actual volume of renewable fuel production. This means that any renewable fuel used in the California LCFS program must also be registered with the USEPA and generate RINs.

The RFS sets specific GHG reduction thresholds for different categories of renewable fuels. All, biodiesel, biomass-based diesel fuels, and advanced biofuels must attain a 50 percent GHG reduction compared to average 2005 petroleum diesel. All renewable fuels must attain at least a 20 percent GHG reduction compared to average 2005 petroleum fuel. The only renewable fuel producers that are grandfathered and don't have to meet the 20 percent GHG threshold are conventional facilities that were already in existence prior to enactment of the law in December 2007. The biomass-based diesel category was newly added to the RFS2 in 2007, so there are no biodiesel or biomass-based diesel facilities that are grandfathered from compliance with the GHG thresholds. All GHG lifecycle analysis includes indirect land use change. Feedstocks must comply with the GHG thresholds including indirect emissions from indirect international land use change. Because emissions from tropical land clearing can be very high, this means the only fuels eligible for the RFS have no or very small indirect land use change associated with biofuel production. Fuels cannot register with the USEPA until the USEPA has concluded comprehensive lifecycle analysis quantifying the feedstock-specific indirect land use change impacts. For instance, the USEPA has not yet released lifecycle analysis for biomass based diesel using palm oil. Until the USEPA approves these feedstocks, producers cannot register with the USEPA to produce renewable fuel or RINs.

In addition to USEPA requirements regarding lifecycle GHG emissions and indirect land use change, the EISA statute and the USEPA explicitly mandate that all renewable fuels produced on agricultural lands can only come from land that was already in production prior to December 2007. This strict prohibition against land conversion serves to ensure that there are no negative environmental consequences from converting forests, grasslands, or other natural ecosystem to biofuel production. The ARB should not underestimate the power of this clause. Stakeholder discussions during the LCFS Sustainability

Workgroup meetings indicate concern over the environmental impacts of agriculture. This all-encompassing prohibition on land conversion serves to mitigate the majority of those concerns by eliminating the possibility of renewable fuel coming from expanded agricultural areas.

The ARB can benefit greatly by recognizing the existing requirements of the RFS and including them in the LCFS. All renewable fuel is certified by the USEPA to come only from existing agricultural land or waste products in order to generate a RIN, and each RIN is specific to a category of renewable fuel defined by the GHG reduction thresholds. Obligated parties (petroleum providers) are required to collect and report RINs to comply with the RFS. These very same RINs can be a tracking mechanism for the LCFS to ensure the sustainability of low-carbon fuels.

<u>An aggregate approach is appropriate to certify renewable fuels.</u>

During the public comment period for the federal public rulemaking implementing the RFS, the USEPA considered the option of farm-level certification for meeting the definition of renewable fuel produced on existing agricultural land. In consultation with the USDA, it was determined that farm-level certification would be unduly burdensome, unnecessarily costly, practically impossible to implement, and provide no environmental benefit. The public docket contains lengthy correspondence between USDA and USEPA affecting the decision to certify U.S. commodities using an aggregate approach. Decades of official government data indicated that agricultural land has been shrinking, not expanding in area. Careful investigation and analysis by USDA and USEPA predicts this trend to continue. USDA and USEPA commit to evaluating land use data on an annual basis and revisiting the aggregate approach to certification if crop acres approach a historical threshold of areal expanse.

For fuels and feedstocks imported into the U.S., USEPA requires farm-level certification to ensure compliance with this requirement. USEPA has established a petition process for other governments or commodity groups to submit data and achieve similar aggregate approval. To date, Canadian Canola growers are the only biomass-based diesel importers that have filed such a petition.

This evaluation of administrative burden, cost, and environmental benefit must be weighed for all the criteria and indicators that the ARB proposes to include in LCFS requirements. For all of the sustainability principles that have been proposed, existing laws and aggregate lifecycle data exist to certify many fuel pathways in an aggregate approach. An aggregate approach sacrifices no environmental protection, avoids unintended consequences, and results in a workable LCFS program with meaningful GHG reductions.

<u>Numerous USDA programs already do what the ARB is proposing to require.</u>

The draft criteria and indicators presented by the ARB include reference to environmental management plans and numerous other terms that will have to be carefully defined to eliminate subjective interpretation. We have great concern that the proposed requirement for environmental management plans could create enormous administrative burden for the ARB, obligated parties, biofuel producers, and farmers. We would encourage the ARB to carefully assess previous and existing efforts to require this type of planning for agricultural production.

The management of natural resources is not a new concept for farmers. Carbon content of soils, erosion control, crop rotation, nutrient management, pest management, productivity, optimized water use, efficiency, and expansion of crop acres are all factors that are addressed by existing programs authorized by the USDA, state departments of agriculture, regional and academic institutions, and farmer-led organizations. The USDA has been promoting responsible management of soil and other resources since 1933. Eight decades of experience in thousands of county, state, and federal offices have made increasing progress through voluntary and mandatory programs to optimize resource efficiency.

Before beginning anew and following the direction of special interest groups to develop a new form of environmental management plan, it would be advisable to learn from the extensive experiences of the federal agency officially in charge of the U.S. agricultural sector, and its impacts on our food supply, our economy, and our environment. We are aware of one special interest group that has submitted a proposal to RSB regarding sustainability standards for agriculture. We are not aware of any specific agricultural production experience within that stakeholder group. Nor does it appear that any of the cited references in that proposal draw from real world experience of agronomic practices. We note that many of the references pertain to the European Renewable Energy Directive and European policies, which are fundamentally different than U.S. policies and ill-suited to address U.S. practices. These differences were described only briefly above. There are many more reasons why European strategies to certify biofuel are inappropriate and unworkable for North American production.

The following is by no means a comprehensive survey of the existing efforts both voluntary and mandatory from federal, state, county, watershed-based and farmer-led organizations that aim to improve land stewardship and improve the environmental impact of farm land. The ARB should work closely with USDA, the states, county, watershed-based, and farmer-led organizations to catalog the variety and quantify the impact of such existing efforts. Ongoing relationships and exchange of information with these organizations will facilitate enhanced effectiveness and awareness of stewardship activities.

The USDA's Natural Resource Conservation Service (NRCS) was established in 1994. It was formed from the Soil Conservation Service, which had been helping farmers in a coordinated, technical, and national approach to protect soil at the county, farm, and field level since 1933. The name was changed to the National Resource Conservation Service to recognize that land stewardship is about water quality and other ecological factors as well as soil health. In its seventy-seven year history, the NRCS has used technical standards to enhance protection nationwide while establishing local priorities that fit the needs of individual farmers and specific ecosystems. The NRCS is guided by these principles:

- Assess the resources on the land, conservation problems and opportunities.
- Draw on various sciences and disciplines and integrate all their contributions into a plan for the whole property.
- Work closely with land users so that the plans for conservation mesh with their objectives.
- Through implementing conservation on individual properties, contribute to the overall quality of the life in the watershed or region.

The NRCS administers engineering and conservation plans and also administers conservation programs. The Farm Service Agency (FSA) administers commodity programs. FSA relies on the NRCS to approve conservation systems and to enforce compliance with approved conservation plans and conservation systems.

From 1982 to 1997, there was significant progress made to reduce soil erosion on all cropland: sheet and till erosion dropped by 41 percent; wind erosion dropped by 43 percent; and soil loss on cultivated cropland decreased by 39.2 percent. These reductions saved more than 1.2 billion tons of soil per year. Residue management improved wildlife habitat and organic matter in the soil on an additional 46 million acres. Organic matter is important because it binds pesticides and nutrients and reduces impact on surface and groundwater. [2,3]

From 1982 to 2003, significant amounts of cropland were converted to Conservation reserve program (CRP) acres and other conservation uses, resulting in a decrease by 27.8 percent of highly erodible cropland. Cropland, other than highly erodible land, decreased by 13.4 percent and significant soil erosion reductions were made by the Conservation Compliance and Sod Buster provisions of the Farm Bill.[1]

National Resource Inventory (NRI) data also indicates that erosion rates on cropland have dropped significantly. As of 2005, 6 million acres of buffers help protect water quality and erosion reduction on private lands from 1982 to 1992 produced benefits to water-based recreation of $373 million.[4]

Improvements in water management on irrigated acres between 1998 and 2003 reduced water use on 18.5 million acres; improved crop yield on 18.7 million acres; and decreased energy costs on 15.3 million acres. Average irrigation rates decreased 30 percent between 1950 and 2000. More than 50 percent of the benefits from improved irrigation water management are off-site benefits and are accrued by the public. The USDA Farm and Ranch irrigation survey reports that $1.13 billion was invested in water management improvements during 2003. This represents an average investment of $13,056 per farm [5]

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[2]U.S. Department of Agriculture. Natural Resources Conservation Service. February, 2006. Conservation Resource Brief: Water Quality.

[3] U.S. Department of Agriculture. Natural Resources Conservation Service. February, 2006. Conservation Resource Brief: Soil Quality.

[4] U.S. Department of Agriculture. Natural Resources Conservation Service. February, 2006. Conservation Resource Brief: Water Quality.

[5] U.S. Department of Agriculture. Natural Resources Conservation Service. May, 2006. Conservation Resource Brief: Water Management.

Existing programs that are already focusing on improving water quality from agricultural land include the Conservation Effects Assessment Project (CEAP), Cooperative State Research Education and Extension Service (CSREES), and Conservation Innovation Grants (CIG). CEAP is a cooperative between NRCS and USDA's Agricultural Research Service (ARS) to determine specific effects of conservation practices using National Resource Inventory (NRI) data to improve performance of water management on a watershed scale. CSREES includes studies that are already underway on sediment transport, attached nutrients, and efficacy of conservation systems. A goal of CSREES studies is to design better conservation systems to address nutrient loss. Conservation Innovation Grants stimulate development and adoption of conservation approaches and technologies.

Conservation Planning and Conservation System Guides (CSG) are existing tools that ensure best management practices are installed as a system that is designed to work together. These are specific to local geographic areas to suit soils, climate and other local variables.

In 1998, 37.2 percent of all planted acres were using conservation tillage. A factor in the adoption of these practices was strict compliance standards containing residue management practices. By 2004, 113 million acres were in conservation tillage, with added acres of no-till.[6] The current conservation tillage information in the U.S. LCI Database is based on data contained in a 2002 report. However, newly available information shows that more acreage is being placed into conservation tillage. Updated information gathered for the new report shows 63 percent of U.S. soybean acreage in conservation tillage, up from 56 percent cited in the 2002 report. Of the land in conservation tillage, the new data show 41 percent was in no-till conservation up from the 33 percent cited in the 2002 report.[7] These statistics show that conservation tillage adoption rate is higher on a percentage basis for soybeans compared to the national average for all crops. The appropriateness of tillage methods is highly dependent upon the type of crop and local factors. No-till is not appropriate for all circumstances. Trends show that farmers are modifying practices to optimize yield in the most appropriate ways according to their local conditions.

Conservation tillage practices disturb less soil and reduce tractor usage. For example, no-till conservation can result in fuel savings ranging from 3.5 to 5.7 gallons per acre. Mulch tillage can save approximately 2 gallons per acre. Conservation tillage practices also leave more crop residue on the soil surface than conventional tillage. Increased soil surface residue enhances moisture retention and reduces irrigation demand by up to several inches of water per year. No-till leaves less exposed soil, reduces soil erosion by as much at 90 percent, reduces nitrogen and phosphorus fertilizer runoff by up to 70 percent, and promotes the building of soil organic matter, which reduced CO^2 emissions [8].

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[6] U.S. Department of Agriculture. Natural Resources Conservation Service. February, 2006b. Conservation Resource Brief: Soil Erosion.

[7] United Soybean Board. February 2010. Life Cycle Impact of Soybean Products and Soy Industrial Products

[8] United Soybean Board. February 2010 (2010b). New Life Cycle Profile for Soy Products.

USDA has made significant investments to improve soil quality, water quality, and water management. The figures cited here are from the period of 2002 to 2005. The ARB should coordinate with USDA to obtain more recent figures and historical totals to provide proper perspective to how much effort has already and continues to be devoted to improve the environmental impacts of agriculture as a whole.

- Soil Quality Investment
  - $956,872,638 financial assistance
  - $1,078,133,263 technical assistance
- Water Quality
  - $1,130,584,621 financial assistance
  - $862,268,999 technical assistance
- Water management
  - $736,548,261 financial assistance
  - $476,533,337 technical assistance
- Total = $5,240,941,119 (NRCS 2006, NRCS 2006d)

Many programs exist within USDA that promote the implementation of conservation practices. The following is a partial list of existing programs:

- Conservation Reserve Program (CRP)
- Conservation Security Program
- Conservation Stewardship Program
- Environmental Quality Incentives Program (EQUIP)
- Watershed protection and Flood Prevention Act payments or loan assistance
- Farm and Ranch Lands Protection Program
- Grassland Reserve Program
- Wetlands Reserve Program
- Wildlife Habitat Incentives Program
- Agricultural Management Assistance Program
- Chesapeake Bay Watershed Initiative
- Cooperative Conservation Partnership Initiative
- Conservation of Private Grazing Lands
- Conservation Innovation Grants
- Healthy Forest Reserve Program
- Small Watershed Rehabilitation Program
- Direct and Counter Cyclical Program (DCP)
- Average Crop Revenue Election Program
- Deficiency payments
- Consolidated Farm and Rural Development Act farm operating loans
- Dairy Marketing Assistance Program
- Non-insured Assisted Program
- Emergency Feed Program
- Wool and Mohair Programs
- Farm Storage Loans

- Crop Disaster Program
- Emergency Conservation Program
- Livestock Indemnity Program
- Livestock Compensation Program

Participation in any one of these farm programs requires strict compliance with mandatory provisions of the Food Security Act, protection of highly erodible land, wetland protection, and sod-busting provisions that discourage the conversion of new cropland. Participation rates are extremely high, particularly among the farmers that produce commodity crops such as corn and soybeans. Each of the above programs has specific requirements of farmers to implement Approved Conservation Systems. There are strict minimum requirements common to all programs. The minimum requirements apply to the whole farm, and not just the acres enrolled in a specific program. NRCS determines which acres require specific practices, and additional requirements apply to those specific areas. The environmental management plans proposed by the ARB could very well be a duplication of effort already being undertaken by farmers and USDA. We encourage the ARB to coordinate with USDA to confirm the number of participants in each of these programs and document the current implementation of applied conservation practices. Applied Conservation Practices include, but may not be limited to:

- Conservation Cover
- Conservation Crop Rotation
- Contour Buffer Strips
- Contour Farming
- Cover Crop
- Critical Area Planting
- Cross Wind Ridges
- Cross Wind Trap Strips
- Diversion
- Field Border
- Herbaceous Wind Barriers
- Irrigation Water Management
- Mulching
- Pasture and Hay Planting
- Residue Management, Mulch Till
- Residue Management Ridge Till
- Residue Management Seasonal
- Strip-cropping
- Surface Roughening
- Terrace
- Tree/Shrub Establishment
- Vegetative Barrier
- Water and Sediment Control Basin
- Windbreak/Shelterbelt Establishment
- Windbreak/Shelterbelt Renovation [9]

[9] U.S. Department of Agriculture. Natural Resources Conservation Service. February, 2006b. Conservation Resource Brief: Soil Erosion

As of 2005; 55,579,763 acres were enrolled in some form of applied conservation practices [10]. The ARB should coordinate with USDA to update these data sets.

In an effort to quantify current adoption of best management practices among commodity farmers, NBB surveyed NRCS and FSA experts in the chief soybean producing states of Missouri, Iowa, and Illinois.[11] The resources allotted for this survey did not allow a full quantification of participation in the great multitude of USDA programs listed in Table 2 and time constraints limited this investigation to the most popular programs among commodity farmers, which are DCP (Direct and Counter Cyclical Program) and CRP.

In Missouri, 73,000 farms and 100,000 individual producers are enrolled in DCP. Ninety-five percent of Missouri acreage dedicated to growing commodity crops is enrolled in DCP. In Missouri, 35,000 producers are enrolled in CRP with 42,000 individual contracts. In Illinois, 129,745 farms enrolled in DCP in 2009. In 2010, Illinois farm enrollment in DCP increased to 130,994. In Iowa, 154,000 farms enrolled in DCP in 2009, which amounts to 98 percent of all farms in Iowa. The Iowa Farm Service Agency reports that the 98 percent enrollment rate is very consistent from year to year.

In summary, participation in at least one voluntary USDA conservation program is very high (as high as 98%) among commercial commodity farmers. Those acres that are not enrolled are likely to be small farms, hobby farmers, recreation and hunting lands, and lands that have lost their farming base due to development and suburban sprawl.

Farmers enrolled in DCP or any other USDA program must comply with requirements of the Food Security Act on all of their farmed acreage. These minimum requirements include sodbuster swamp buster, highly erodible land and wetland conservation provisions.

Sodbuster provisions provide strong disincentives to convert untilled land to crop production and effectively reduce expansion of U.S. crop acres to grow corn or soybeans for any purpose. This combined with the RFS2 requirements prohibiting renewable fuel production from any new agricultural land, creates complimentary policies that eliminate any negative environmental impacts from expanding crop acres. Likewise, Swamp buster provisions of the Farm Bill prohibit the conversion of any wetland to crop production.

The FSA Handbook to the DCP program outlines the detailed requirements of the DCP program. Participating producers must agree to comply with highly erodible land and wetland conservation

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[10] U.S. Department of Agriculture. Natural Resources Conservation Service. February, 2006b. Conservation Resource Brief: Soil Erosion

[11] NBB staff conducted personal conversations with: Gerald Hrdina, Executive Director, Missouri FSA; Bob Ball, State Conservationist, Missouri NRCS; Michael Lafolette, Missouri FSA; Stan Wilson, Chief Program Specialist, Illinois FSA; Kevin McKlure, Iowa FSA; Dewaine Gelnar, Asst. State Conservationist Missouri NRCS in the summer of 2010.

provisions on all their land. Participating producers must also devote acreage to agricultural or conserving use, control noxious weeds and otherwise maintain sound agricultural practices. Participating producers must also file acreage reports with respect to all cropland on each farm and notify FSA when there is a transfer or change of interest in farm acreage. [12]

The objective of the highly erodible land conservation and wetland conservation provisions existing in the Food Security Act of 1985 are to reduce soil loss because of wind and water erosion, protect the nation's long-term capability to produce food and fiber; reduce sedimentation and improve water quality; preserve the nation's wetlands; and remove incentives for persons to produce agricultural commodities on highly erodible land or converted wetland. Highly erodible land is to be set aside, devoted to conservation uses, or otherwise not cultivated. Persons not abiding by this provision shall be ineligible for benefits under programs administered by USDA. [13]

To be approved by NRCS and allow producers to be eligible, a conservation system must provide for a substantial reduction in soil erosion. The conservation system must include all treatments and measures needed to meet the Highly Erodible Land Conservation (HELC) requirements, including treatment required to control sheet and rill, wind, and ephemeral and classic gully erosion. Substantial Reduction in Soil Erosion is generally defined as 75 percent. (NRCS HEL Compliance) Persons are ineligible for benefits under programs administered by USDA if they plant an agricultural commodity on wetland that was converted after December 23, 1985 or convert a wetland after November 28, 1990. Highly Erodible Land Conservation and Wetland Conservation Provisions apply to all land owned by the person or the person's affiliates. Highly erodible land determinations must be made for all acres. NRCS will determine whether a producer is actively applying a conservation system that is based on the local NRCS technical guide as approved[14].

A conservation plan describes the conservation system applicable to said cropland. It also describes decisions of the person with respect to location, land use, tillage systems, and conservation treatment measures and schedules. Conservation plans are approved by the local soil and conservation district in consultation with the local committees established under section b(b)(5) of the Soil Conservation and Domestic Allotment Act (16 U.S.C. 590h(b)(5)) and NRCS.[15]

Approved conservation systems mean a combination of one or more conservation measures or management practices that are based on local resource conditions, available conservation technology, and standards and guidelines in the NRCS Field Office Technical Guides (FOTG). Approved conservation systems must also be designed to achieve a substantial reduction in soil erosion or substantial improvements in soil conditions. [16]Field Office Technical Guides used in each field office are localized so

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[12] U.S. Department of Agriculture. Farm Service Agency. November 29, 2006. Highly Erodible Land Conservation and Wetland Conservation Provisions.

[13] Ibid.

[14] Ibid.

[15] Ibid.

[16] Ibid.

that they apply specifically to the geographic area for which they are prepared. The following summarizes the contents of the electronic Field office Technical Guide (eFOTG):

- **Section I — General References**
  descriptions of Major Land Resource Areas, watershed information, and links to NRCS reference manuals and handbooks, researchers, universities, and agencies, conservation practice costs, agricultural laws and regulations, cultural resources, and information about protected plant and animal species.
- **Section II — Soil and Site Information**
  detailed information about soil, water, air, plant, and animal resources, NRCS Soil Surveys, Hydric Soils Interpretations, Ecological Site Descriptions, Forage Suitability Groups, Cropland Production Tables, Wildlife Habitat Evaluation Guides, Water Quality Guides, and other related information
- **Section III — Conservation Management Systems**
  NRCS Quality Criteria, which establish standards for resource conditions that provide sustained us.
- **Section IV — Practice Standards and Specifications**
  NRCS Conservation Practices. Practice Standards define the practice and where it applies. Practice specifications are detailed requirements for installing the practice in the state.
- **Section V — Conservation Effects**
  background information on how Conservation Practices affect each identified resource concerns in the state.

USDA is to be commended for assembling this comprehensive guide. The technical data contained in the eFOTG is extreme and cannot be captured in these comments and it will take an enormous undertaking to familiarize oneself with its contents. However, we encourage the ARB to fully incorporate the existing requirements of the eFOTG into its analysis, in order to assess the impact of the LCFS on agricultural practices in the U.S. Many of the farming and agricultural concerns raised by the LCFS Sustainability Workgroup are already addressed through existing USDA programs. A fuller understanding of those programs is necessary if the ARB is to provide meaningful guidance on how to mitigate or improve the environmental impact without duplicating or confounding progress that is already underway.

Section IV of the eFOTG, Practice Standards and Specifications may be of specific interest to EPA because Conservation Practice Standard 590 addresses nutrient management. Under Conservation Practice Standard 590, annual plan updates shall document the crops, tillage, nutrient application rates, and methods actually implemented. Soils shall be tested a minimum of once every four years by a DATCP-certified laboratory for pH, phosphorus (P), potassium (K), and organic matter. The objective of nutrient management is to maximize crop yield by optimizing nutrient application in terms of application timing and application rate.

The ARB should avoid prescriptive standards for which minimizing inputs is the only objective. Rather than minimizing inputs, responsible practices should maximize yield by optimizing inputs such a nutrients and irrigation. Optimization results in maximum uptake of nutrients by growing plants while at

the same time minimizing waste, residue, and runoff. Responsible use of resources demands optimization of yield and inputs. The significant increase in yield of domestic crops is not simply the result of individual improvements but a combination of improvements including plant breeding, nutrient management, moisture management, pest management, tillage practices, plant spacing, seasonal timing, crop rotation patterns, and more. Managing these various inputs and accounting for uncontrolled impacts, such as weather requires expertise and local experience. No state agency is prepared to dictate details of this balancing act that will apply to the entire U.S. and foreign regions.

Yield improvement brings the benefits of producing more food, fiber and biofuel feedstocks while reducing total land area needed to grow those products and the other inputs, such as energy and seed. Consider, for example, the fuel saved by a tractor that harvests 44 bushels by cultivating one acre compared to a tractor that must cover more acreage to reap that same harvest from a lower yielding plot. Another example is optimization through irrigation. Irrigation has been show to correlate with yield increases as high as 35 percent.[17] Adding appropriate amounts of water can have a very low environmental and economic cost while delivering significant benefits through increased yield. This type of yield increase frees up additional acres that would be needed to produce and equivalent crop. It also reduces the amount of energy, seed, nutrients, and other inputs needed on those saved acres. Figure 1 below, provides a graphical representation of the relationship between yield and nutrients. Nutrient management helps farmers determine the optimum point on this continuum ant the eFOTG provides local, site specific guidance.

Also in Figure 1, observe that a new Nitrogen Use Efficient (NUE) variety provides a more beneficial relationship between nitrogen and yield on every part of the curve. This increased beneficial relationship is a direct result of the investment by agriculture into the environment. Policies that promote low carbon fuels assist in enhancing this contribution by enhancing the market value and investment in undervalued co-products like soybean oil and canola oil.

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[17] O'Connor, Tom. H2O'C Engineering. August 3, 2010 (2010b). Water Quantity and Quality Issues Related to Biodiesel.

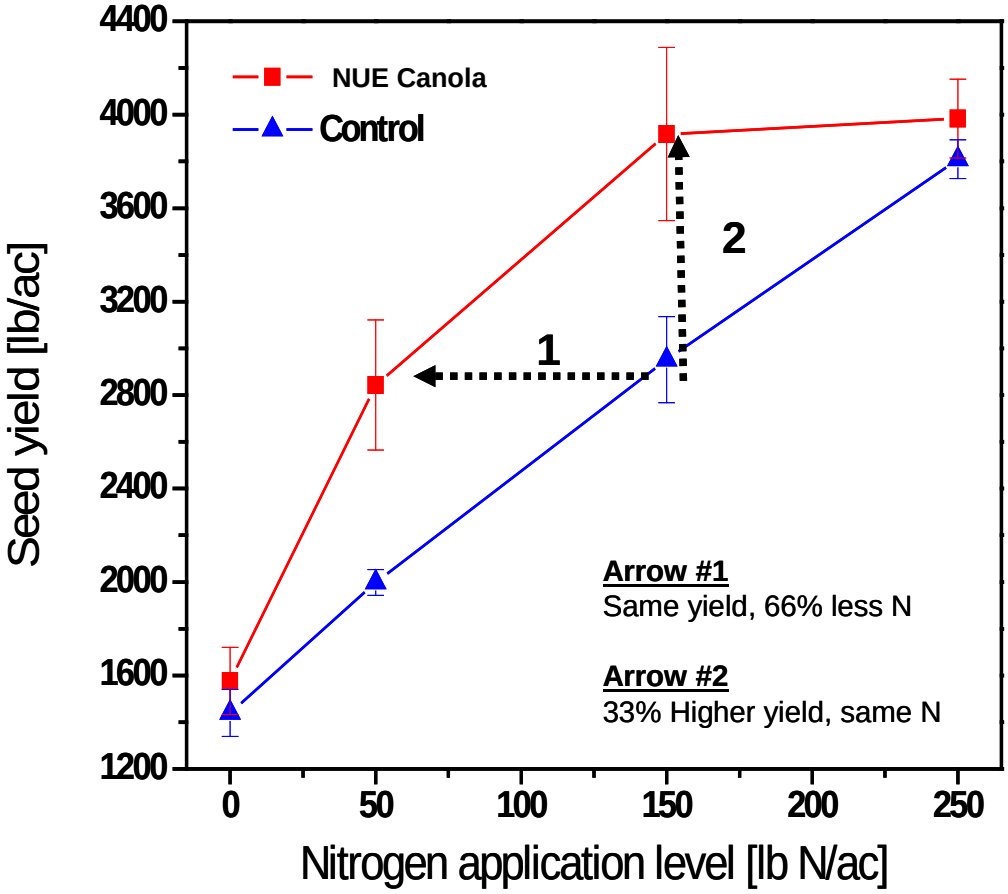

Figure 1. Nitrogen Use Efficiency in Canola

There are some mandatory requirements of Conservation Plans and Conservation Systems that should be of interest to the ARB in this process. Conservation Plans and Conservation Systems must be designed to achieve substantial reduction in soil erosion according to the NRCS eFOTG. Conservation Plans and Conservation Systems must be technically feasible based on local resource conditions and conservation technology. And Conservation Plans and Conservation Systems must be economically feasible and not cause undue hardship.[18] If the ARB develops additional recommendations, it is important that those recommendations adhere to these same mandatory requirements.

Furthermore, in order to provide assurance that producers are fulfilling their obligations of land stewardship, NRCS completes a status review of individual producers *each* calendar year. NRCS determines that each producer is actively applying approved conservation plans and approved conservation systems. FSA also ensures compliance through normal business activity and compliance spot checks. To ensure that any producer who fails a compliance check for one farm for one program

[18] U.S. Department of Agriculture. Farm Service Agency. November 29, 2006. Highly Erodible Land Conservation and Wetland Conservation Provisions.

does not receive benefits for other farms or other programs, violation data is entered into the national Database, FSA-493. A person may be denied all program benefits if determined that the person participated in a scheme or device to evade highly erodible land conservation or wetland conservation provisions.[19] These compliance provisions are mentioned here to convey that these are not merely voluntary programs in which some farmers may participate. Rather, as many as 98 percent of corn and soybean farmers participate in these USDA programs that include very detailed requirement and very rigorous enforcement mechanisms.

The USDA website reports that 33,720,678 acres are enrolled in the Conservation Reserve Program. FSA administers CRP while technical support functions are provided by:

- USDA's Natural Resource Conservation Service (NCRCS);
- USDA's Cooperative State Research, Education, and Extension Service;
- State forestry agencies;
- Local soil and water conservation districts; and
- Private sector providers of technical assistance.

For erodible land or land located in a conservation priority area, participants must establish long-term, resource-conserving cover. Offers for CRP contracts are ranked according to the Environmental Benefits Index (EBI) and FSA collects data for each of the EBI factors based on the relative environmental benefits for the land offered. Each eligible offer is ranked in comparison to all other offers and selections made from that ranking. FSA uses the following EBI factors to assess the environmental benefits for the land offered:

- Wildlife habitat benefits resulting from covers on contract acreage;
- Water quality benefits from reduced erosion, runoff, and leaching;
- On-farm benefits from reduced erosion;
- Benefits that will likely endure beyond the contract period;
- Air quality benefits from reduced wind erosion; and
- Cost.

Through this process of comparing relative environmental benefits, USDA has already established a process for optimizing the environmental benefit of the CRP program. The millions of acres in CRP are ranked to enroll those most poorly suited to farming and providing the most environmental benefit as conservation acreage.

The Conservation Stewardship program (CSP) addresses resource concerns in a comprehensive manner by undertaking additional conservation activities and improving, maintaining, and managing existing conservation activities. A farmer's entire operation must be enrolled and must include all eligible land operated under the applicant's control. CSP enhancement activities include:

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[19] U.S. Department of Agriculture. Farm Service Agency. November 29, 2006. Highly Erodible Land Conservation and Wetland Conservation Provisions.

- Air Quality
- Animal
- Energy
- Plant
- Soil Erosion
- Soil Quality
- Water Quality
- Water Quantity
- Special Projects
- Bundles

Much like the eFOTG, there is a great amount of detail in existing guidance for CSP enhancement activities. For instance, under the topic of soil quality, the following enhancement activities are described:

SQL01 Controlled Traffic System;
SQL02 Continuous Cover Crops ;
SQL03 Drainage Water Management for Nutrient Pathogen or Pesticide Reduction;
SQL04 Use of Cover Crop Mixes;
SQL05 Use of Deep Rooted Crops to Break up Soil Compaction;
SQL06 Conversion of Cropland to Grass bed Agriculture;
SQL07 Forest Stand Improvement for Soil Quality; and
CCR99 Resource-Conserving Crop Rotation.

The EQIP objective to optimize environmental benefits is achieved through a process that begins with National priorities that address:

- Impaired water quality;
- Conservation of ground and surface water resources;
- Improvement of air quality;
- Reduction of soil erosion and sedimentation; and
- Improvement or creation of wildlife habitat for at-risk species.

The abbreviated descriptions provided above of current USDA programs to improve the environmental impacts of crop production are not all inclusive, but rather examples of the numerous programs that the ARB should catalog and include in their assessment of the LCFS and its environmental impacts of farming. The following examples include a very brief and partial list of other programs being undertaken by farmer organizations to further increase adoption of best management practices and new technologies to increase yield while optimizing inputs and decreasing negative environmental impact and increasing positive environmental impact.

The Council for Agricultural Science and Technology (CAST) has developed publications like the Comparative Environmental Impacts of Biotechnology-derived and Traditional Soybean, Corn, and Cotton.

The Keystone Alliance for Sustainable Agriculture has established the following statistics for recent improvements in soybean agriculture:

- Soybean land use decreased by 26 percent per bushel.
- Energy use decreased 54 percent per acre.
- Energy use decreased 61 percent per bushel.
- Decreased soil loss by more than 1 ton per acre (37 percent).
- Reduced carbon emissions by 22 pounds per acre (24 percent)

The Certified Environmental Management Systems for Agriculture (CEMSA) was originally piloted by the Iowa Soybean Association. It is now starting in six other states for multiple commodity crops. CEMSA includes:

- Soil management,
- Nutrient management,
- Pest management, and
- Energy conservation.

<u>NBB recommends collaboration with USDA and agricultural experts.</u>

While the brief descriptions above of existing programs by USDA and others are but a partial summary of the comprehensive conservation planning already underway, we believe that these existing requirements fulfill the need expressed by the LCFS Sustainability Workgroup to ensure that farmers are making responsible use of resources. We believe that it is most appropriate for these existing requirements to be applied consistently to all commodity producers and not just those commodities whose end use is renewable fuel. We further believe that the technical expertise, agronomic detail, and attention to local conditions that is already required in conservation plans approved by NRCS and FSA exceeds that which could be developed and implemented by the ARB exclusively for the LCFS. We urge the ARB to access data available from the USDA and certify aggregate compliance for U.S. commodity producers and to use lifecycle data from the USDA and DOE to certify specific biofuel pathways that meet the proposed principles of sustainability.

<u>Sustainability requirements for petroleum, natural gas, and electricity must be developed simultaneous to biofuel requirements.</u>

To date the efforts of the ARB have almost exclusively discussed the sustainability impacts of biofuels. It would be a serious mistake not to address certification and requirements for other fuel options simultaneously. The LCFS has ranked multiple fuel options according to their carbon intensity. The goal of the LCFS is to incentivize fuels according to their carbon reduction potential in addition to natural market drivers. Natural market drivers include: relative cost, availability and their performance for specific applications. While the NBB is open to sustainability criteria that may add additional incentives for superior performance according to the sustainability principles, it appears that farm-level certification would more likely eliminate fuels that do not meet the minimum requirements. By

requiring farm-level certification, the ARB runs the very likely risk of disqualifying low carbon fuels not because they fail to meet the sustainability principles, but because the certification scheme itself is impossible to fulfill. Any market share that is denied to biofuels will be replaced in use by fossil fuels or electricity. If fossil fuels and electricity have not also been scrutinized to ensure the principles are met, then disqualifying biofuels has no measured benefit. This scenario of disqualifying biofuels with no measurable environmental benefit should be avoided. Not only would this scenario produce no environmental gain, it could quite likely jeopardize the ability to meet the LCFS GHG reduction goals, which could otherwise be achieved.

Every one of the twelve sustainability principles could potentially be breached by fossil fuels. Fossil fuels that are imported from other countries are particularly vulnerable, because developing countries and non-democratic nations do not share the existing legal and cultural protections that already exist to support the sustainability principles. The U.S. imports more than 60 percent of its petroleum. Leading imports come from Canadian oil sands, Mexico, Venezuela, the Middle East and Africa. If the sustainability principles are to be applied to fossil fuels, the ARB should evaluate the legality of price-fixing organizations such as OPEC. Environmental impacts of petroleum that should be evaluated include, but are not limited to oil sands extraction in Canada; methane flaring in Africa; groundwater impacts of exploration and drilling operations; and soil, air and water impairment as a result of spills and intentional dumping. [20,21,22,23] New methods of extracting natural gas through hydrofracking have potential environmental impacts that remain unsettled in the scientific community. Oil spills from tankers; off-shore and inland drilling, pipelines, and refining seem so ubiquitous in the news that it would seem too obvious to mention. However, none of these serious environmental impacts are included in the criteria and indicators proposed by the ARB. Those very real and damaging impacts of fossil fuels should not be ignored by a process that threatens to disqualify environmentally beneficial biofuels. Likewise, human and labor rights, social development, land rights, and mineral rights should be evaluated for fossil fuels.

Electricity generated from fossil fuels, nuclear, hydroelectric, and other sources should also be evaluated quantifiably to ensure compliance with the sustainability principles. The potential risks of radiation and

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[20] Patel, S. 2007. Canadian Oil Sands: Opportunities, Technologies and Challenges." Special Report. Hydrocarbon Processing. February 2007. pgs. 65 – 73.

[21] Schleifstein, Mark. The Times-Picayune. October 5, 2009. Wetlands loss linked to Outer Continental Shelf oil and gas pipelines in new study

[22] Thomas-Muller, C. 2008. Tar Sands. Canadian Dimension. Mar/Apr. 2008, Vol. 42 Issue 2, p11-14.

[23] U.S. Department of the Interior Minerals Management Service. 2009. Outer Continental Shelf (OCS)-Related Pipeline and Navigation Canals in the Western and Central Gulf of Mexico: Relative Impacts on Wetland Habitats and Effectiveness of Mitigation.

nuclear waste should be evaluated. While we recognize that the seasonal impacts of renewable fuel production are difficult to compare quantitatively to impacts of nuclear waste, which will persist for hundreds of thousands of years; we urge that the environmental risks of radiation not be ignored.

While renewable sources of electricity have their benefits, they are not without downsides. Hydroelectric dams and reservoirs in the Western U.S. have destroyed significant habitat and continue to destroy and threaten species whose habitat, food cycle, and spawning grounds are impacted by hydroelectric generation facilities. These threats to biodiversity impact the entire food chain.

A farm-level certification program that applies only to biofuels and does not measure the negative impacts of competing energy sources, will artificially disqualify sustainable, low carbon fuels only to have them displaced in the market by fuels that may have equal or worse environmental, economic, and social impacts.

Once again, thank you for your consideration of our comments. We look forward to continued collaboration to implement a successful LCFS that promotes sustainable fuels in a practical way. If you should have any questions about this matter, please feel free to contact me at (800) 841-5849 or dscott@biodiesel.org.

Sincerely,

Don Scott
Director of Sustainability