Science and Technology Committee
Energy and Environment Subcommittee
United States House of Representatives

Hearing on
Biofuels Research and Development Enhancement Act "Discussion Draft"

Testimony of

Bob Dinneen
President & CEO, Renewable Fuels Association

June 14, 2007

Good afternoon, Mr. Chairman and Members of the Subcommittee. My name is Bob Dinneen and I am president of the Renewable Fuels Association (RFA), the national trade association representing the U.S. ethanol industry.

This is an important and timely hearing, and I am pleased to be here to discuss the growth in the domestic ethanol industry, the increasingly important role of continued research and development for our nation's biofuels industry, and the Committee's Discussion Draft legislation, the "Biofuels Research and Development Enhancement Act".

The ethanol industry today is on the cutting edge of technology, pursuing new processes, new energy sources and new feedstocks that will make tomorrow's ethanol industry unrecognizable from today's. Ethanol companies are already utilizing cold starch fermentation, corn fractionation, and corn oil extraction. Companies are pursuing more sustainable energy sources, including biomass gasification and methane digesters. And there is not an ethanol company represented by the RFA that does not have a cellulose-to-ethanol research program.

The Science and Technology Committee, the Energy and Environment Subcommittee in particular, can play an important role in accelerating these efforts by promoting and targeting research and development funds and resources appropriately. Support through research and development to promote the commercialization of cellulosic ethanol and to continue to build upon the existing industry's advancements in technologies will be critical to the future growth of the biofuels industry.

Background

Today's ethanol industry consists of 120 biorefineries located in 19 different states with the capacity to process 2.2 billion bushels of grain into 6.2 billion gallons of high octane, clean burning motor fuel, and more than 12 million metric tons of livestock and poultry feed. It is a dynamic and growing industry that is revitalizing rural America, reducing emissions in our nation's cities, and lowering our dependence on imported petroleum.

Ethanol has become an essential component of the U.S. motor fuel market. Today, ethanol is blended in 50 percent of the nation's fuel, and is sold virtually from coast to coast and border to border. The almost 5 billion gallons of ethanol produced and sold in the U.S. last year contributed significantly to the nation's economic, environmental and energy security. According to an analysis completed for the RFA[1], the approximately 5 billion gallons of ethanol produced in 2006 resulted in the following impacts:

- Added $41.9 billion to gross output;
- Created 163,034 jobs in all sectors of the economy;
- Increased economic activity and new jobs from ethanol increased household income by $6.7 billion, money that flows directly into consumers' pockets;
- Contributed $2.7 billion of tax revenue for the Federal government and $2.2 billion for State and Local governments; and,
- Reduced oil imports by 206 million barrels of oil, valued at $11.2 billion.

There are currently 77 biorefineries under construction. With eight existing biorefineries expanding, the industry expects more than 6.4 billion gallons of new production capacity to be in operation by the end of 2009.

Biofuels Research and Development Enhancement

The Discussion Draft clearly reflects a concerted effort to identify the research needs that must be addressed to facilitate the rapid expansion of domestically produced renewable fuels such as ethanol, bio-butanol and biodiesel. It recognizes that challenges remain, not just in biofuels production, but in developing biofuels markets as well. The Committee is to be commended for its commitment to meeting the challenge of imported energy, recognizing the potential of biofuels, and motivating the research community, through this bill, to provide a pathway that will provide a more stable and sustainable energy future for all Americans. The RFA supports this effort, but would offer the following suggestions to enhance the bill's effectiveness, particularly given the unfortunate budgetary constraints this effort will likely face.

[1] *Contribution of the Ethanol Industry to the Economy of the United States*, Dr. John Urbanchuk, Director, LECG, LLC, December, 2006.

Section 1– Biofuels and Biorefinery Information Center

While we certainly agree Biorefinery Information needs to be more widely available, we believe this function is more appropriately met by private industry, and that limited federal dollars can be better utilized in other areas. Trade associations and industry-led promotion councils have traditionally fulfilled the role of clearinghouses for information related to the research and development, and the commercialization and deployment of technologies. Certainly, with respect to ethanol, numerous organizations offer information related to the technology, financing, permitting and construction of ethanol plants.[2] In addition, careful consideration should be given as to how to best coordinate and consolidate the work already being done by various Federal agencies on biofuels research and development before creating additional layers of bureaucracy. The RFA recommends a thorough review by the Secretary of Energy of the existing public and private resources before determining the need for a new information center.

Section 2 – Biofuels and Advanced Biofuels Infrastructure

The U.S. transportation fuel market has been blending ethanol into our fuel supply for more than 30 years. Ethanol is now blended in 50 percent of gasoline nationwide. Indeed, over the past several years the ethanol industry has worked to expand a "Virtual Pipeline" through aggressive use of the rail system, barge and truck traffic. As a result, we can move product quickly to those areas where it is needed. Many ethanol plants have the capability to load unit trains of ethanol for shipment to ethanol terminals in key markets. Unit trains are quickly becoming the norm, not the exception, which was not the case just a few years ago. Railroad companies are working with our industry to develop infrastructure to meet future demand for ethanol. The biofuels industry is working closely with terminal operators and refiners to identify ethanol storage facilities and install blending equipment. We will continue to grow the necessary infrastructure to make sure that in any market we need to ship ethanol there is rail access at gasoline terminals, and that those terminals are able to take unit trains.

Clearly, many of the concerns raised in the Discussion Draft as issues with the transportation and storage of biofuels do not apply to ethanol when used as a blend component in today's gasoline. Other biofuels that do not have the record of successful use and experience that ethanol enjoys will certainly want to evaluate their physical and chemical properties and how they will fair in the transportation network, however. These analyses should be focused on the physical transport of the products and provisions requiring an assessment of environmental impacts should rightfully be left to the U.S. Environmental Protection Agency if necessary and appropriate.

With respect to ethanol, the most significant infrastructure-related research and development need to advance cellulose and other bioenergy feedstocks for biofuels production is on improved collection, storage and handling systems for those feedstocks. The RFA would encourage the Committee to expand this provision to include research, development and demonstration of the transportation and distribution needs of the emerging cellulosic ethanol industry.

---

[2] For example, BBI International publishes an *"Ethanol Development Handbook"* that has proven to be an invaluable resource to companies and individuals looking to invest in ethanol production technology.

Section 4 -- Bioresearch Centers for Systems Biology Program

As mentioned previously, there is, and will be for the foreseeable future, limited available funding, so an increase in the number of Bioresearch Centers to 11 from the Energy Policy Act of 2005's three is unnecessary. Perhaps five Bioresearch Centers – one for every Petroleum Administration for Defense Districts – would be more appropriate. There is already a great amount of regionally-focused research being conducted at universities, Federal laboratories and other public and private institutions nationwide. Increasing the pool of research entities that would compete for limited funds may further dilute efforts to commercialize and deploy these new and emerging technologies.

Section 5 -- Grants for Biofuels Production Research and Development in Certain States

The RFA strongly supports the Draft bill's biofuels grant program, and we would recommend expanding funding in this area if at all possible. A wide variety of energy crops and agricultural waste products such as switch grass, myscanthis, wood chips and corn stover from many regions of the country must all be researched, developed and commercialized as additional ethanol feedstocks to realize the annual production levels envisioned in the many proposals already introduced by this Congress. New biorefineries are being built in new regions of the country everyday – the East Coast, the Gulf Coast, the Pacific Northwest and even Hawaii. Grant programs that promote geographical dispersion, such as those included in the Discussion Draft, will help to commercialize cellulosic ethanol quickly and continue the trend just beginning to expand ethanol production beyond the traditional corn belt.

Section 6 – Biorefinery Energy Efficiency

The RFA also strongly supports amending Section 932 of the Energy Policy Act of 2005 to create a Biorefinery Energy Efficiency program. This will be particularly important as state and federal fuels policy gravitates toward a carbon matrix for compliance. Opportunities for both grain and cellulosic ethanol production will be enhanced by technologies that allow biorefineries to decrease energy costs by diversifying energy sources. Advances in research on the development of processes to produce alternative energy at biorefineries such as biomass cogeneration and biomass gasification, and methane production through anaerobic digestors, will be critical to increase energy efficiency and reduce the energy consumption of biorefineries.

Section 7 – Study of Higher Levels of Ethanol Blends

Ethanol today is largely a blend component with gasoline, adding octane, displacing toxics and helping refiners meet Clean Air Act specifications. But the time when ethanol will saturate the blend market is on the horizon, and the industry is looking forward to new market opportunities. As rapidly as ethanol production is expanding, it is possible the industry will saturate the existing blend market before a meaningful E-85 market develops. In such a case, it would be most beneficial to allow refiners to blend ethanol in greater volumes, e.g., 15 percent. The ethanol industry today is engaged in testing of higher blend levels of ethanol, beyond E-10. There is evidence to suggest that today's vehicle fleet could use higher blends. An initial round of testing is underway, but more test programs will be needed. It should be noted, however, that EPA has

already largely defined the scope of the analysis necessary to approve such new fuels for commercial use. EPA's testing needs are focused on the driveability, durability, materials compatibility and emissions. The study envisioned in the Draft bill goes beyond what EPA would require to approve new fuels, creating a new and higher standard for ethanol fuel blends than for other fuels that may soon enter the market. The RFA would suggest, therefore, that the bill track EPA protocols for a review of higher level ethanol blends and provide sufficient funding to expedite such a test.

Higher blend levels would have a significant positive impact on the U.S. ethanol market, without needing to install new fuel pumps and wait for a vehicle fleet to turn over in the next few decades. It would also allow for a smoother transition to E-85 by growing the infrastructure more steadily.

Section 8 – Study of Optimization of Flexible Fuel Vehicles

As flexible fuel vehicle (FFV) production is ramped up, it is important to encourage the use of the most efficient technologies. Some FFVs today experience a reduction in mileage when ethanol is used because of the differences in BTU content compared to gasoline. But the debit can be easily addressed through continued research and development. For example, General Motors has introduced a turbo-charged SAAB that experiences no reduction in fuel efficiency when E-85 is used. There is also technology being developed that utilizes "variable compression ratio engines" that would adjust the compression ratio depending on the fuel used. Thus, if the car's computer system recognized E-85 was being used, it would adjust the compression ratio to take full advantage of ethanol's properties. The RFA supports the further study of how best to optimize technologies of alternative fueled vehicles to use E-85 fuel as included in the Discussion Draft. The study of new technologies could dramatically improve E-85 economics by eliminating or substantially reducing the mileage penalty associated with existing FFV technology.

Conclusion

Increasing America's energy and national security by reducing our dependence on foreign oil and continuing to expand our domestic renewable fuels industry is among the most important challenges facing our country. We look forward to working with you in the 110th Congress to develop the appropriate federal policies that will achieve those goals.

Thank you.