



**Remarks Prepared for Testimony to the  
Pennsylvania Senate Environmental Resources and Energy Committee  
By Pennsylvania Energy Resources Group, LLC**

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**Contact: John Nikoloff  
PA Energy Resources Group, LLC  
200 N. Third Street, Suite 1100  
Harrisburg, PA 17101  
Phone: (717) 233-8606**



Good Morning. Chairman White, Chairman Musto, members of the Committee. My name is John Nikoloff and I am a partner in Pennsylvania Energy Resources Group, LLC, a joint venture of JohnNikoloff & Associates and McFarren & Associates. Prior to founding ERG, each of our companies had several years of experience working with development of ethanol and biodiesel projects.

With me this morning are Phillip McFarren, CEO of McFarren and Associates and a partner in ERG, and Doug Shand, Vice President for Administration with Amerigreen Biofuels. I should note for the record that we are all shareholders and investors in biofuels companies.

McFarren and Associates has been working with Green Energy Holdings for four years. Green Holdings has planned a distribution terminal and a 100 million gallon ethanol production facility in Tremont, Schuylkill County, and is raising its financing privately.

I have been working in the biofuels industry for five years, and in 2004 became Executive Vice President of the Green Oil Company where I was directly involved with all phases of the business, from farm agronomics to financing, to product contracting.

We formed Pennsylvania Energy Resources Group because we recognized that many of these companies have been hampered by an inability to raise initial capital to cover the costs of early-stage development, preliminary engineering and sourcing of feedstock and offtake contracts – all items which are standard requirements for participation by commercial lenders and investment firms.

Pennsylvania's state economic development programs were designed to create jobs on site, and are not set up to consider jobs created BY these firms, and frankly, they don't currently provide the resources that are essential to financing biofuels operations. The plants themselves require highly paid technicians, but few in relation to the capital costs. A 100 million gallon per year biodiesel plant, for example, can be operated 24/7 using a total staff of less than 40 men and women. No dedicated state programs exist to work with the marketplace to determine state support – instead we have a system of programs which may or may not be applied, with the decisions made at the agency head level on a noncompetitive basis, and where there are competitive grant programs, biofuels – and the industries needed to support the industry – must compete with all other alternative energy projects, from manure digesters to organic solar nanotechnology.

Capital costs for building an ethanol plant that can produce 100 million gallons a year has risen from about \$145 million to between \$225 million and \$250 million, depending on site and processes. And biodiesel plants now cost more than \$1.20 per gallon exclusive of site and preparation costs. Still, biofuels plants generate hundreds of jobs in construction, engineering,



processes, feedstock production, transportation, logistics, marketing, and distribution, but these jobs cannot be considered in qualifying for most state programs.

You have already received testimony and information that projects the economic value to Pennsylvania of an expanded biofuels industry from other sources. LECG last year projected that development of capabilities to produce 1 billion gallons of ethanol and biodiesel in Pennsylvania would generate \$27 billion in economic benefits for the Commonwealth. ERG agrees that state support for that expansion is critical.

Last fall, as we organized the Energy Resources Group, we began contacting companies that we knew were interested in starting operations in Pennsylvania. Since that time, we have talked to more than 30 companies looking at biodiesel production and 17 ethanol companies, either now putting their operations together or considering locating in Pennsylvania. We have talked with dozens of companies who provide processes, machinery, feedstock, engineering, and marketing services for the industry. We are working with biodiesel companies who plan to use soy oil, waste oil, animal fats, algae, palm oil and rapeseed oil as feedstock. And we are working with ethanol companies who want to utilize corn, sweet sorghum, sawdust, grasses, woody biomass, municipal waste, and even manure!

The companies looking to go into biofuels production in Pennsylvania are significantly different than existing and planned operations in the Midwest. We have no ADM, Cargill or Louis Dreyfus self financing plants here, because those mega-companies do not have farmers under contract in the East. By and large, the companies who will be successful on the East Coast are local businessmen and women, investors and engineers who have developed their financing from ground zero, and who have virtually eliminated all the risk for lenders.

We surveyed them all, to identify their real needs, and asked all of them what kinds of state programs would provide REAL assistance in securing long term financing for their projects. Our recommendations reflect the industry's opinions – not developed to help one or two, but to provide suggestions for programs that all companies can participate in on an equal footing, providing their economics justify that state support funding.

Before addressing the recommendations of our biofuels working group and individual clients, we must first make a strong recommendation to you and all elected state officials.

Pennsylvania is not alone in focusing on alternative energy programs and legislation – ERG has been tracking more than 330 bills which have been introduced and passed in 38 states during 2007. Pennsylvania has two choices in the alternative energy investment debate. We either establish an effective program which encourages broad capital investment in a number of alternative energy facilities, or we are agreeing to subsidize a number of more aggressive states. If Pennsylvania hopes to compete for investments and jobs in the alternative energy arena, the state must develop supporting programs before the end of 2007. As companies seek sites for their projects, and as



investors consider potential returns on investments, these economic benefits and capital investments will flow to those states which offer the most incentives and economic advantages to the investor.

Unless the Commonwealth can provide a comparably competitive package of programs to states within a 500 mile radius, firms in these competing states will absolutely capture large portions of the Pennsylvania market place, resulting in Pennsylvania taxpayers and consumers sending their revenues elsewhere instead of keeping those dollars here with Pennsylvania business interests. The states to the immediate west of us have adopted very strong programs with relatively large resources to promote and capture their share of the national marketplace. Many of those programs are already targeting western Pennsylvania and will make it very difficult for Pennsylvania entities to obtain financing and a place in the marketplace unless policy makers act in a timely fashion. Financing for many potential Pennsylvania projects has dried up already because investors favor those state sites where government participation is not only well defined but targeted.

A second set of choices in the biofuels arena revolves around the choice between programs that support growth of production capability in the Commonwealth or programs that protect the initial investments already in place by smaller companies with vision, but with local markets. There is no question that the needs of the small biodiesel producer are different than those of the larger commercial scale operations. But in establishing public policy, recognizing that the market for biodiesel in particular will grow significantly whether or not state mandates exist, you will be setting the stage either for our ability to attract capital investments from across the nation to develop hundreds of millions of gallons of capacity through relatively few large plants, or requiring our biodiesel needs be met locally by dozens and dozens of small plants which will require even greater capital investment, and then be competing with out of state companies which have the economies of scale working in their favor. Proposals that don't recognize this differentiation may fail to "protect" our nascent cottage biodiesel industry when these companies are competing with plants producing 50 to 100 million gallons a year.

## ERG RECOMMENDATIONS

The companies ERG is working with have recommended these programs be included in future state energy development programs. The industry wants state government to stand shoulder to shoulder with it, providing a floor of support – not to guarantee a profit; not to arbitrarily lift one company's prospects above another, regardless of that individual company's projected financials; and finally, to avoid placing additional burdens on them while they seek financing. In line with that last item, the industry would support development of a general permit for biodiesel and ethanol facilities, which would be like money in the bank when meeting with investors.

The industry believes that any legislation authorizing expenditures for alternative energy projects clearly spell out the programs and uses of funds, including dedicated funding for the biofuels industry. :

- **A Biofuels Seed Capital Program to provide a 50-50 state match in funding for qualifying biodiesel and ethanol operations for the first \$1 million raised privately to develop a production facility.** ERG's partners have worked with several companies which could have been in operation in Pennsylvania today were it not for their inability to secure the first and second tranch of funding without going the angel or VC route. Major investment banks have made it clear that their requirements for participation include actions which essentially eliminate much of the risk for these operations – that means having options on land, feasibility studies completed, financials based on letters of intent from both feedstock and offtake partners, preliminary site and process engineering. For a large scale plant, just complying with these requirements may cost a company \$4-5 million. Once these are secured, Wall Street and major banks have thrown up another hurdle for the companies – their investments are contingent on a requirement that the company maintain a strong ownership in equity. VC funding normally requires giving up a significant share of that initial equity, and precludes the participation of a major lender, who wants that as a guarantee for its investment.
- **A Biofuels Guaranteed Loan Program, for up to 80 percent of the estimated cost of any one project, limited to a maximum of 20 years and \$80 million of capital cost.** The proposed guaranteed loan program would encourage loans by private businesses for the construction of facilities to process feedstock oils, biofuels and commercial byproducts. Under this program, Pennsylvania would appropriate funds of as little as five (5) percent of the amount of the loan to provide assurance of repayment. Recipients of these loan guarantees would deposit an amount determined by the state to be sufficient to cover administrative costs relating to the loan guarantee, but not to include the cost of capital. A program like this, funded at as little as \$50 million, would generate more than \$1 billion in investment in the Commonwealth.
- **A targeted rail program for development of biofuels production facilities to support development of essential rail freight infrastructure improvements for these sites.** The industry recommends that this rail component be organized with guidelines similar to Pennsylvania's Rail Freight Assistance Program. The rail requirements for commercial oilseed processing, ethanol and biodiesel facilities are significant - economics dictate delivery of feedstock and transportation of finished product in unit trains. Pennsylvania is blessed with one of the nation's best short line regional and class one rail systems, but simply having a line pass a production site is not enough to support these plants. And acknowledging the need to develop a statewide distribution and delivery system, this provision would enhance that capability without marrying the state to the one or two existing distribution systems. Some trends should be very obvious for those willing to review existing data. The American Association of Railroads recently released a report in cooperation with chemical manufacturers showing the nationwide carloadings for chemical products for the period of 1997 thru 2006. Ethanol shipments during this period quadrupled

to more than 16,075,000 tons and this does not include the shipment of raw materials. Another 20% increase is expected in 2007 and an even greater amount in 2008. Ethanol is about to exceed all other categories of chemical shipments and it certainly is the fastest growing, with or without Pennsylvania production on line.

- **Elimination of the sales and use tax for biomass used for fuel.** Taxes may seem a minor obstacle when funding a \$250 million plant, but with lenders eyeing the bottom line on production costs, elimination of this tax can make the difference between financials that show a return on investment that justifies the investment and economics that simply show a profit.
- **Funding to support state promotion and consumer education on the value and use of ethanol and biodiesel.** Our existing biodiesel producers have clearly told us that their markets will be driven by consumer demand – and they have done an admirable job locally of educating their customers about the benefits of clean energy. But to support a statewide industry, funding is essential to conduct outreach programs to the general public, municipalities, local and state government agencies, educational institutions, and environmental groups, and to coordinate the dissemination of information to/with the retail petroleum industry. Unsupported fears about these fuels are driving public debate in many places, and threatening the prevent Pennsylvania from fully benefiting from biofuels production. It's time to educate ourselves and the public using sound science, not anecdotal references and apocryphal visions. We would also add that this public awareness and education program should focus toward quality issues, providing consumers with quality standards to demand.
- **Creation of a quality assurance program to insure biodiesel fuels produced in Pennsylvania meet or exceed standards and are successful in adaptation.** Fuel quality is particularly important to the biodiesel industry, as consumers and manufacturers consider its utilization. Major corporations, fleet operators and engine manufacturers are now conducting research to ultimately approve biodiesel blends for use under their warranty programs. But this effort has been hampered by past problems which resulted from poor quality product entering the market. Today, biodiesel is being made with soy oil, canola oil, yellow grease, animal fats, waste oils, and even algae on a test basis. Some facilities are switching production from batch to batch from one feedstock source to another. This can be problematic in quality assurance, and quality is a critical component of customer satisfaction. One glaring example was that Minnesota faced a shutdown of its trucking industry in the winter of 2005 because of clogging problems in some local biodiesel – the state was forced to suspend its B2 mandate because of those problems. The standard for biodiesel, ASTM D 6751, has been adopted by many States for pure biodiesel (B100) that is used in blends up to 20% with diesel fuel. Producers fear, however, that it is not enough simply to require that standard be met. We strongly recommend that Pennsylvania develop an enforcement program, and policies within the Department of Agriculture to enforce

ASTM D-6751 by regularly testing biodiesel and biodiesel blends to ensure all biodiesel entering the market meets accepted quality standards. Pennsylvania should strongly encourage all biodiesel producers and marketers to achieve and maintain accreditation under the BQ-9000 program. BQ-9000 is a voluntary quality control program for biodiesel producers and marketers. Quality control practices and programs such as BQ-9000 help ensure biodiesel is produced, stored, distributed and blended according to ASTM specifications.

- **Production Incentives for biofuels production which benefit the manufacturer AND the farmers who are providing the feedstock.** There may be some confusion over production incentive payments and production tax credits. For example, Indiana and Kentucky have \$1.00/gallon production tax credits – 18 other states have production incentive payments, ranging from \$0.05 per gallon to \$0.40 per gallon. Among neighboring states, Maryland has a \$0.10-\$0.20 per gallon incentive payment, depending on the source of feedstock. In Maryland, for example, soybean oil biodiesel gets a \$0.20 credit, while other feedstocks (greases, renderings, waste oils, etc.) get \$0.10 per gallon. Many policymakers, understandably because the terms are used interchangeably, are being asked to compare apples to oranges on this subject.

In order to “level the playing field” with other states, Pennsylvania should consider tax credits for biodiesel producers or blenders as an incentive to promote biodiesel consumption. As an alternative to tax credits, we would encourage you to expand the existing Alternative Fuel Incentive Grant (AFIG) Program. For example, an expanded AFIG Program that provides reimbursement for up to 20 cents per gallon of biodiesel produced for three years, not to exceed 15 million gallons in a calendar year, will have a positive impact in attracting more private capital to build new and expand existing biodiesel refining capacity in Pennsylvania. This modest expansion of the AFIG Program would level the playing field for PA biodiesel producers with biodiesel producers in most other states.

- **Support for research, development and demonstration on alternative and advanced energy technology projects.** This is critical to future development of the state’s alternative energy industry in general, and particularly as it relates to biofuels. The need for alternative crops to support both ethanol and biodiesel production is well documented. R, D, & D programs can assist the state’s farmers, enhance our processing capacity and support development of new processes that can provide further economic stimulation to the industry. And there is no question that research is essential to development of second generation biofuels, including agricultural crops and plants. A critical need exists to develop more feedstock. Today, if every drop of oil from every Pennsylvania soybean harvested in 2006 were converted to biodiesel, our base feedstock could only support production of 23 million gallons of biodiesel. We encourage the Committee to consider programs that promote and support farmers to produce and process crops as feedstock. Feedstock cost is the single largest component of biofuels production, (up to 80 percent of the cost of final product).



Stakeholders such as the PA Farm Bureau, University Extension Services, farmer cooperatives, and private companies should be supported in building more capacity for oilseed crushing and oilseed production.

Beyond our programmatic recommendations, a few issues that need to be addressed as the state considers programs to support the expansion of a biofuels industry in the Commonwealth.

Ethanol has become a favorite whipping boy for many recently, and frankly, much of the anti-ethanol commentary is based on assumptions and fears, not founded in sound science. We have recently read that ethanol is causing food price spikes, that ethanol may be dangerous to your health, that corn economics will prevent the ethanol industry from meeting its potential, and even that ethanol is in some way more explosive than gasoline and thus poses a safety threat.

- We have heard that ethanol is more prone to explosions than gasoline.

For the record, ethanol, in general, has a higher flash point than gasoline, thus posing less risk. At low temperatures (32 degrees), E85 vapor is more flammable than gasoline vapor, but E85 vapor is less flammable at higher temperatures. The lower vapor pressure and lower heat of combustion of E85 reduce risk of fire compared to gasoline.

- We have heard that ethanol has caused food prices to rise along with the demand for corn. Secretary Wolff last week did a good job of outlining the “food vs. feed” issue for the committee. Events at the Chicago Board of Trade last week following his testimony underscored the reality that prices are being driven by speculation, not reality. On the day that USDA announced a record corn crop and continuing high year end reserves, corn prices actually rose on the CBOT. This flies in the face of economic reality. Saying ethanol is driving up corn prices for livestock and dairy farmers is no more accurate than blaming high corn prices on the USDA and the environmental movement. This year, more than 36 million acres were put into USDA Crop Reserve Programs instead of going to grain production.

Much of the debate has been centered on the notion that the U.S. will not be able to produce enough corn to satisfy all markets, creating shortages and intensifying competition that will continuously drive the price of corn higher. This claim misses some key facts. Advancements in seed, farming and ethanol technologies are allowing American farmers to continue feeding the world while helping to fuel our nation. Many who make this argument also overlook the fact that the ethanol process produces a livestock and poultry feed with a greater percentage of protein than the usual corn diet. These distiller grains are a very economical source of feed for local dairy and poultry interests – which should mean that Pennsylvania farmers as a class can benefit from these production facilities. They get a premium price for their corn and they can purchase a lower cost but more nutritious feed for cattle and poultry.

We live in a global agricultural economy. Food prices worldwide continue to climb upward at a pace not seen in decades. Few countries seem immune to the impact—with prices up 6 percent in



Britain, around 7 percent in the United States and China, and 10 percent in India. A recent study from the UN's Food and Agriculture Organization (FAO) estimates that its expenditures on imported foodstuffs for the least developed and most food-challenged nations will rise 9 percent from the previous year.

In fact, studies show that the price of gasoline has more than twice the impact on consumer food prices than does the price of grain. According to an analysis of food, energy and corn prices conducted by John Urbanchuk of LECG, LLC, "rising energy prices had a more significant impact on food prices than did corn." In fact, rising energy prices have twice the impact on the Consumer Price Index (CPI) for food than does the price of corn, according to the report. "Energy costs have a much greater impact on consumer food costs as they impact every single food product on the shelf," said Urbanchuk. Energy is required to produce, process, package and ship each food item. Conversely, corn prices impact just a small segment of the food market as not all products rely on corn for production. While it may be more sensational to lay the blame for rising food costs on corn prices, the facts don't support that conclusion. By a factor of two-to-one, energy prices are the chief factor determining what American families pay at the grocery store.

According Urbanchuk, "Increasing petroleum prices have about twice the impact on consumer food prices as equivalent increases in corn prices. An equivalent increase in corn prices - about \$1.00 per bushel over current levels - would increase consumer prices only 0.3 percent."

Corn and energy prices both affect consumer food prices. However, since increases in corn prices are limited to a relatively small portion of the overall CPI for food, an increase in corn prices resulting from higher ethanol demand or a supply disruption such as a major drought is expected to have about half the impact of the same percentage increase in petroleum and energy prices.

- We have heard that ethanol takes more fossil fuel energy to produce than it provides. A 15 year old study using outdated data and farm production technologies originally made that claim, but more recent research clearly demonstrates this is not accurate. According to the Department of Energy, research indicates an approximate 67% gain in the overall corn-to-ethanol process and use of that ethanol for fuel. Corn production technologies have improved significantly over the past 20 years, making ethanol production less and less energy intensive. Every 100 BTUs of energy used to produce ethanol (including planting, cultivating, harvesting, and processing) yield 167 BTUs of ethanol despite the increasing cost of petroleum fuels in corn production.

- We have heard that ethanol is more expensive than gasoline. Again, last week Secretary Wolff addressed this issue. As of July, the rack price of ethanol was \$2.51 versus \$2.49 for unleaded gasoline--a difference of two cents per gallon. The ethanol rack price was eight cents higher

compared to the price in June but 63 cents lower than a year ago. Unleaded gasoline's average rack price was eight cents higher than the price in June and ten cents higher than a year ago. The wholesale price of ethanol is much lower: According to the DOE's Energy Information



Administration, the average US price of gasoline on August 27, 2007 was \$2.749. On that same date, the US average price of ethanol was \$2.226, more than 50 cents less per gallon. From state to state, according to the Ohio Corn Growers Association, the differential for retail prices of ethanol range from 30-80 cents less per gallon.

- We have heard that ethanol portends greater pollution as chemical-intensive farming grows. This argument demonstrates a lack of knowledge about modern production agriculture. “Chemical-intensive farming” is an emotionally tinged buzz word, but “chemical intensive doesn’t reflect the realities of agriculture today. Farmers have done an exceptional job of REDUCING the types and amounts of chemicals used in production of grain crops like corn in the past four decades. In the last 15 years alone, Pennsylvania farmers have reduced use of phosphates and potash significantly. With almost an identical amount of acreage in corn production from 1991-2005, PA farmers reduced phosphate use by use in corn production has decreased by 40% and potash use by 32 percent. Pesticide use on Pennsylvania cornfields has been reduced by more than 60 percent in that same time period!

- We have heard that ethanol may be harmful to us. But according to the US EPA, ethanol lowers harmful carbon monoxide (CO) emissions by 30%; reduces carbon dioxide (CO<sub>2</sub>) emissions by 27%; reduces the amount of noxious fumes and volatile organic compounds (VOCs) that standard gasoline spews into the air; reduces particulate emissions, especially fine particulates that pose a health threat to children, senior citizens, and those with respiratory ailments. In fact, ethanol is the safest component in gasoline today. A study by the Governors' Ethanol Coalition concluded that ethanol poses no threat to surface or ground water. Since ethanol is a naturally occurring substance produced during the fermentation of organic matter, it is expected to rapidly biodegrade in essentially all environments. The U.S. Environmental Protection Agency credits reformulated gasoline (that contains ethanol) with reducing and controlling hazardous emissions, which threaten air quality in many of America's cities. According to a study by the Argonne National Laboratory, vehicles that use ethanol actually help offset fossil fuels' greenhouse gas emissions, which contribute to global warming, by 35% to 46%.

As for cellulosic ethanol, biomass ethanol, switchgrass, woody biomass, an incredible amount of research is underway to use a variety of these other raw materials as the feedstock to make this alcohol based fuel. But, commercial production at a competitive price by all accounts is still several years away. The national objective to expand the US feedstock base to achieve up to a 25% replacement by 2025 means there will be a continuing tremendous investment in capital facilities and jobs in states that can capture a major share of the market place.

Our bottom line?

Location of ethanol production facilities in Pennsylvania should be based on the economics and the marketplace. Arguing that we don’t have enough corn in Pennsylvania to support the industry may be an accurate statement, but that by no means should preclude Pennsylvania reaping the benefits of



the location of these plants. If a company can demonstrate on its bottom line that it can produce ethanol – or biodiesel for that matter – and make a profit, the Commonwealth should not be taking actions which would make that a more difficult process.

As for the concept of mandates, because we are involved in the renewable fuels business, we understand the desire to enable Pennsylvania to produce amounts of biofuels that offset what now comes to the state from the Middle East. Existing federal mandates through the RPS would require use of almost 300 million gallons of renewable fuels in Pennsylvania by 2012. We know first hand that these federal mandates don't automatically generate the funding that is required for these extremely expensive operations. Both small and large operations may have difficulty benefiting from a state mandate. The local companies like Amerigreen Biofuels, which have spent several years and invested much in programs to establish their markets and branding of their products, would see their current competitive differentiator undermined.

The national ethanol industry has moved toward destination manufacturing plants for a simple reason. It makes economic sense to locate these plants closer to the end markets. East Coast ethanol plants have a cost benefit advantage over Mid West plants because it is cheaper to rail corn than ethanol – as a result we benefit on the output side, offsetting the costs of railing in corn now, and other biomass in the future. Companies which have established plans, found reliable, successful partners, and have financing in place would not be helped. But the market for offtake of ethanol and biodiesel is not restricted to the borders of the Commonwealth. A 200 million gallon per year ethanol or biodiesel plant would be hard pressed today to find a market within the state for that quantity – selling to the oil and gas companies would not ensure the product stays here either.

While a guaranteed market may eliminate the normal business risks on that end, even with mandates, unless a company's financial projections show a significant return on investment, mandates in themselves would not have opened up the flood gates for financing. From a strictly business bottom line standpoint, we have to say that mandates may or may not accomplish what supporters want. But if that happens, the competitive advantages of existing companies will be weakened not by the marketplace, but by government policies.

If ERG and the companies we have been working with can leave you with one salient request, it would be that the General Assembly and the Rendell Administration enter a serious dialogue which results in development of a state biofuels policy this fall. Failure to do so, and to compete with programs in our neighboring states, will simply put Pennsylvania at a significantly less favorable position in the capital markets, and result in lost opportunity, and eventually lost dollars and jobs to those states.

Chairman White, Chairman Musto, and members of the Committee, I want to thank you again for the opportunity to address you this morning. We will be happy to provide you with further information, to serve as a resource during your deliberations this fall, and to answer any questions you may have at this time.