

Mr. Chairman, Senator Chambliss, and Members of the Committee,

I am Howard A. Learner, the Executive Director of the Environmental Law and Policy Center of the Midwest (ELPC), which is the Midwest's leading clean energy advocacy and eco-business innovation organization. ELPC commends this Committee's leadership in developing successful new clean energy development program opportunities for farmers, ranchers and rural small businesses. Americans are looking to obtain environmental quality and national energy security benefits from more clean energy development, and farmers and rural communities can provide them while achieving local economic benefits at the same time. More renewable energy and energy efficiency in rural America helps to meet our energy needs while improving local economies, strengthening our nation's energy security and improving environmental quality.

Clean energy development is a win-win-win for farmers, rural economic development and the environment, as well as a winner for enhancing our national energy security. Wind power and other renewable energy, and clean energy crops, can produce a new income stream for farmers, enhance rural economies, and provide environmental quality benefits for everyone. Today, I will testify on some sound ways for this Committee to improve and expand upon the innovative new clean energy development programs adopted in the 2002 Farm Bill.

ELPC worked with members of this Committee and its staff, and then with the U.S. Department of Agriculture, to help develop and then implement the successful new clean energy development programs in 2002 Farm Bill. I had the pleasure of appearing before this Committee in June 2001, at the request of Senators Harkin and Lugar, to testify at the first set of public hearings on the 2002 Farm Bill. We encouraged the Committee to create a new Energy Title that would include focused and achievable clean energy development policies to secure healthy farming communities, a stronger agricultural economy, national environmental benefits, and economic growth. We were very pleased when Congress for the first time included a new Energy Title IX in the Farm Security and Rural Investment Act of 2002 and also included renewable energy development provisions in the Rural Development Title VI and the Research Title of the 2002 Farm Bill.

I. Introduction

Much has changed since I testified before the Committee in 2001, and these changes underscore the need for assertive and consistent federal investments in clean energy development across Rural America. High energy prices and the uncertainty surrounding foreign oil supplies are restricting economic growth and spurring demand for cleaner biofuels and clean electric power. Farmers are seeking new income through community wind developments and clean energy crops. Clean renewable energy and energy efficiency development is also an important strategy for helping to solve our global warming problems. Farms have always provided food for our nation's breadbasket, fiber for our clothing, and feed for our livestock. Farms now have the near-term potential to supply a significant portion of our nation's energy needs, with electricity generated by wind turbines and other sources, biofuels from a range of energy crops, and much better energy efficiency that can cut farm operating costs and boost incomes.

ELPC has five overall clean energy recommendations for the Committee to consider in shaping

the next Farm Bill. I will summary these recommendations here and then describe them in more detail in the following parts of my testimony:

1. Increase funding and improve the successful Section 9006 Renewable Energy and Energy Efficiency Improvements Program. Section 9006 has proved its worth and value. It is a popular and very successful program. Congress should consider increasing Section 9006 funding from its current \$23 million annual appropriation to at least \$250 million by 2012. Indeed, we believe that the Section 9006 program could be reasonably ramped up to a \$500 million annual appropriations level. We also recommend some specific enhancements to the program design and the removal of an unintended obstacle involving an offset from the federal production tax credit.

2. Fund Section 9005 on-farm energy efficiency audits and renewable energy assessments to spur on-farm investments. This program remains unfunded five years after passage in the 2002 Farm Bill even though it could provide essential tools for helping farmers and rural businesses to identify cost-effective renewable energy systems and energy efficiency improvements, and even though diesel and fertilizer costs have more than doubled in cost since 2002. It's time to fund this program and get it moving.

3. Bring energy crops to market by expanding development and use. Perennial energy crops are expected to produce a significant amount of the cellulosic ethanol in the next 10 years. Yet energy crop commercialization has made little progress during the current Farm Bill. It's time to move beyond research and to more demonstration and development.

4. Establish a sustainable biofuels program by re-designing Section 9010 as a Sustainable Biofuels Production program to provide feedstock purchase incentives to assist developers of new generation cellulosic ethanol plants and to encourage the substitution of biomass for natural gas or coal as an energy source at ethanol and other biofuels facilities.

5. Congress should consider creating a new Undersecretary for Energy and Bio-Based Products to clarify and strengthen the agency's farm-based energy research, development, demonstration and commercialization implementation and oversight.

Farming the land represents some of the highest ideals of American culture. Innovation, independence, and entrepreneurial enthusiasm all help to drive American agriculture. These ideals are just as suited to achieve clean energy development in rural America. In 2001, only a relative handful of members of Congress and others had the vision to realize that clean energy development could contribute to a better, more prosperous future for farming. Now, there is a broad national consensus that clean energy can help drive economic development, energy security and environmental quality. Through the next Farm Bill, Congress can translate that broad consensus into specific action, and take the critical next steps towards achieving the 25 x '25 goals.

The Committee is familiar with the 25 x'25 Action Plan, which has strong and broad support from a coalition of agriculture, energy and environmental groups. ELPC is pleased to be part of, and work closely with, the 25 x '25 alliance. There is widespread agreement that producing

25 percent of our nation's energy from renewable energy resources, and conserving our use of all energy, will yield significant economic development, national security and environmental benefits. Achieving the 25 x '25 goal will:

- ? Increase farm income by \$180 billion.
- ? Generate \$700 million in new economic activity.
- ? Create 4 to 5 million new jobs.
- ? Reduce oil consumption by at least 10 percent.
- ? Reduce carbon dioxide pollution by 1 billion tons - about two-thirds of the projected emissions growth by 2025.

The potential is now real, with technology innovations now catching up with demand. Advanced wind power and other electric power generation technologies, new achievements in biofuels production technologies, and energy efficiency improvements that reduce energy demand and costs are all emerging today.

We now have the opportunity to ramp up production of 21st century clean energy from agriculture. Our national circumstances demand it, and with the right investments and consistent commitments, we can achieve more economic and energy independence and a cleaner environment.

II. The 2002 Farm Bill's Energy Title Programs: Positioning Agriculture Energy for the Future
With this Committee's leadership and only a modest financial investment, the 2002 Farm Bill took vital first steps toward achieving energy independence through rural clean energy development. The Farm Bill's Energy Title programs are a model for successful agriculture and energy policy. Those programs which have received appropriations have been successful. For example, the Section 9002 Biobased Products program is beginning to seed demand for new biorefineries, and the Section 9006 clean energy development program has resulted in more than one billion dollars in leveraged investment for projects in 42 states. These and other programs should serve as the foundation for improving and expanding clean energy development initiatives in the next Farm Bill. They are a win-win-win-win for farmers and ranchers, rural economic vitality, national energy security and the environment:

- ? New income streams for family farmers.
- ? More rural economic vitality through new jobs and investments in rural communities.
- ? Stronger energy security with diverse, resilient and distributed energy systems.
- ? Better environmental quality and soil and water resource protection.

The Section 9006 Renewable Energy Systems and Energy Efficiency Improvements Program is the cornerstone of the 2002 Farm Bill's clean energy development programs. Section 9006 authorizes the USDA to award up to \$23 million in grants, loan guarantees and loans each ear to eligible farmers, ranchers and rural small businesses.

Section 9006 is widely regarded as a proven success. Since 2003, farmers, ranchers and rural small businesses have used over \$115 million in grant and loan guarantee awards to develop more than 800 wind power, anaerobic digester, biofuels, energy efficiency, solar and other projects in farm communities across the country worth nearly \$1 billion.

Section 9006 is truly a nationwide program, with projects awarded in at least 42 different states. Over the past four years, the USDA has done an admirable job of issuing awards for a wide range of renewable energy and energy efficiency projects:

Section 9006 Grants by Technology 2003-2006

ELPC's report --An American Success Story: The Farm Bill's Clean Energy Development Programs - spotlights some successful Section 9006 projects across the country and their economic, energy security and environmental benefits. I am pleased to include a copy of this report for the record of this hearing.

Unfortunately, Section 9006 risks becoming a victim of its own popularity and success. Applications continue to outpace available funding, and hundreds of millions of dollars in projects have gone unfunded. Entrepreneurial opportunities and visions are left unfulfilled. A substantial authorization and appropriations increase for the Section 9006 program will reap a new crop of clean energy projects across rural America for a brighter future for agriculture.

Section 9006 Popularity Outpaces Resources

III. The 2007 Farm Bill: Seizing the Opportunity to Achieve Clean Energy Development, Energy

Independence and Environmental Quality

Working with farm, economic development and clean energy and environmental groups, the Environmental Law and Policy Center has developed a number of clean energy policy priorities for the next Farm Bill that respond to our nation's energy, economic and environmental challenges and point the way to a cleaner, independent energy future.

We propose improving and expanding several of the core Energy Title programs created in the 2002 Farm Bill, such as the cornerstone Section 9006 renewable energy and energy efficiency development program. In just four years, Section 9006 has leveraged \$1 billion of investment for hundreds of projects in 42 states throughout the country.

Recognizing the importance of accelerating the commercialization of cellulosic ethanol, we propose programs which will assist farmers in the production of energy crops and build commercial experience in the transport, processing and utilization of these superior feedstocks. We hope Congress will set a goal for developing perennial energy crops as a commercial practice before the end of this 2007 Farm Bill. We also support consistent, targeted R&D spending on advanced cellulosic ethanol and biodiesel production.

We propose new programs to help farmers reduce their direct energy costs, through education, technical assistance and support of new energy-saving technologies such as precision agriculture equipment.

Finally, while we recognize that the Committee is operating under difficult budget constraints, predictable and mandatory appropriations for clean energy development should be a priority within a fiscally responsible Farm Bill. The 2002 Farm Bill clean energy programs received only a very small fraction of total Farm Bill appropriations. Some programs never received funding, and other programs have faced yearly appropriations fights to secure their funding.

As the Committee develops clean energy development programs for the next Farm Bill, we suggest the following policy improvements:

Recommendation #1: Increase Funding and Improve the Successful Section 9006 Renewable Energy

Systems and Energy Efficiency Improvements Program

Section 9006 is the largest Farm Bill energy program that directly funds small and medium-sized farmers, ranchers and rural small businesses. Section 9006 also promotes and encourages community ownership of energy projects, which generates the best job and income benefits for the community.

Section 9006 can become the driving force to meet the 25 x '25 objectives. For example, with the improvements recommended below, and based on the first four years of performance, we estimate that the Section 9006 program could achieve the following high levels of annual success with a \$250 million funding level:

- ? 1,100+ megawatts of wind power and other clean energy.
- ? 5.5 billion gallons of biofuels.
- ? Tens of millions of dollars annually in energy savings.
- ? 10 million tons in CO2 reductions.

The single most important improvement to the Section 9006 program would be to boost funding from its current \$23 million annual appropriation to at least \$250 million by 2012. Indeed, we believe that the successful Section 9006 program could be reasonably ramped up to a \$500 million annual appropriations level.

Section 9006 has proved its worth and value. It is a popular and very successful program. Applications for Section 9006 grants continue to outpace available funding by at least a three to one margin, and hundreds of millions of dollars in projects have gone unfunded. ELPC has received numerous reports of farmers, ranchers and rural small businesses not applying due to insufficient funding.

Ramping up funding over the next five years would allow the Section 9006 program to expand to meet current growth and expected greater growth from the program changes recommended today. Funding could be ramped up as proposed in last year's S.3890 legislation sponsored by the Chairman and Senators Lugar, Durbin, Hagel and Nelson, and as proposed in H.R. 2154, the "Rural Energy for America" legislation sponsored by Representatives Herseth Sandlin and Fortenberry:

- ? \$71 million (2008)
- ? \$90 million (2009)
- ? \$130 million (2010)
- ? \$180 million (2011)
- ? \$250 million (2012)

Given the size of the energy and environmental challenges that we face, and the large number

of farms, ranchers and rural small businesses, which want to use the program to build new clean energy power generation and improve the energy efficiency of their operations, these funding levels will help agriculture meet the 25x25 goal. Our commitment must match our vision.

A significant funding boost for Section 9006, beginning with \$71 million in FY08, is reasonable because:

? Current program demand exceeds \$60 million annually.

? The President's Farm Bill proposal calls for \$71 million in annual funding for Section 9006.

? S.3890, last year's bipartisan Section 9006 expansion legislation, called for \$60 million for the program in FY08, rising to \$250 million by 2012.

? The broad-based 25 x '25 Ag Energy Steering Committee Action Plan calls for \$250 million/year for Section 9006.

We also recommend a number of other improvements to the Section 9006 program, including:

1. Create a block grant rebate program (up to 25% of total program funds) to encourage more low-cost, turnkey energy efficiency and renewable energy applications such as lighting, heating, motors, and small wind and solar projects. USDA would issue competitive block grants to appropriate state agencies which would then use these funds for technology-specific rebates. This would also relieve USDA's administrative burden of handling so many applications.

2. Solve the "PTC offset" problem that occurs with grants to utility-scale wind and anaerobic digester projects, which sell their power to utilities. These projects lose some of the value of the federal production tax credit (PTC) based on the amount of the Section 9006 grant.

Restructuring the Section 9006 grants as production-based payments, as a number of state grant programs already have done, would avoid this unintended consequence.

3. Expand eligible applicants for the Section 9006 program to include all farming operations, including those in non-rural areas such as commercial greenhouse operators in suburban areas.

4. Provide competitive grants to support feasibility studies and market development plans for renewable energy projects. These grants would help farmers assess project feasibility prior to incurring large out of pocket expenses, and they would also help get more new projects into the development pipeline.

5. Increase loan guarantee limits to encourage more development. Loan guarantees are a desirable financing tool for larger wind power and bioenergy projects. USDA's current Section 9006 loan guarantee limit is \$10 million. We recommend a \$25 million maximum loan guarantee limit for most projects, and a \$100 million limit for advanced cellulosic ethanol developments.

Apart from these changes, we urge the Committee to continue to maintain strong support for the program's grant and loan guarantee components. Each serves a particular purpose.

Competitive grants lower a project's capital cost, which is especially important for smaller projects. Grants also help to leverage private capital and help to raise other capital for the

project because the grant award demonstrates USDA's confidence in the project. Grants help level the playing field for energy investments. Loan guarantees reduce banks' loan risks, and they also improve access to capital.

We are concerned that USDA's implementation of the Section 9006 program is moving towards favoring loan guarantees at the expense of grants. This year's award application cycle, for example, set aside only 25% of total funding for grant awards. Although loan guarantees are an important component of the Section 9006 program, grants are equally important, especially for smaller projects and for small and mid-sized farmers and for a wide range of projects. There is broad and strong support across the country for maintaining a strong grant program for Section 9006, and for growing it over time.

ELPC does not support the Administration's proposal to essentially bifurcate Section 9006 into two different programs, with the grant program under the Biomass Research and Development Act and the loan guarantee program under USDA's Business & Industry authorities. The Section 9006 program is for market-ready projects; it is not for research, development or demonstration projects. Since many project applicants seek both grants and loan guarantees, bifurcating the program would create confusion and implementation challenges.

Recommendation #2: Fund Section 9005 Energy Efficiency Audits and Renewable Energy Assessments to Spur On-Farm Investments

Section 9005, the Energy Audit and Renewable Energy Development Program, remains unfunded five years after passage in the 2002 Farm Bill. This is the situation even though energy audits and assessments are essential tools for helping farmers and rural businesses to identify cost-effective renewable energy systems and energy efficiency improvements, and even though diesel and fertilizer costs have more than doubled in cost since 2002.

U.S. Farm Energy Use by Source

To address high on-farm energy costs, Congress should retain Section 9005's existing focus on energy audits and assessments, and add additional energy cost education components to the program. The new educational programs would be funded with competitive, multi-year block grants to eligible entities. Congress should ramp up funding for the program from \$5 million in 2008 to \$25 million by 2012.

While small in cost, this program would yield major energy savings benefits for farmers and all consumers. Funded at our recommended levels:

? Farmers and rural businesses would save at least \$3.5 billion dollars over five years (through an overall 2% reduction in ag energy expenses for fertilizer, pesticide, electricity, diesel).

? Approximately 7.6 billion pounds of carbon dioxide emissions would be avoided in the same five-year period.

In addition to the existing authorities in Section 9005 for audits and assessments, ELPC

proposes to add to this Section:

1. Environmental management system (EMS) plans incorporating the recommendations of audits and assessments to create a whole-farm/whole-business method for continually improving the environmental performance and energy efficiency of the operation.
2. Farm demonstrations, in partnership with the private sector, showcasing cost-effective high efficiency equipment and energy management practices such as precision agriculture and conservation tillage
3. Grant training workshops to better prepare participants to apply for energy-related grant and loan guarantee opportunities, such as the USDA's Section 9006 program.

Recommendation #3: Bringing Energy Crops to Market: Expanding Development and Use
Perennial energy crops are expected to produce a significant amount of the cellulosic ethanol in the next 10 years. Yet energy crop commercialization has made little progress during the current Farm Bill. Given the increasing hopes pinned on energy crops, we need to step up federal efforts to develop the resource.

Federal efforts have too often been long on research and short on demonstration and development. The often observed "Valley of Death" faced by technology entrepreneurs in moving from research to market is especially vexing in the energy field. While energy crop research is ongoing and a few isolated demonstration projects have occurred (such as the Chariton Valley, Iowa biomass energy project), there is not yet a viable market for energy crops and, therefore, too little incentive for farmers to grow them.

When the federal government has pursued commercialization or demonstration projects, the emphasis has too often been on developing large plants from the outset. Proving these new concepts on a larger scale increases challenges and reduces prospects for success. Commercialization efforts can sometimes succeed better by starting small and scaling up as challenges are addressed and surmounted. The wind industry already has successfully demonstrated this pathway.

An excellent near-term opportunity to ramp up commercialization of energy crops involves using biomass (energy crops and ag wastes) for electricity generation and thermal energy (steam, hot water, process heat). With effective and targeted federal support, these existing energy uses offer near-term opportunities to implement energy crops. This approach develops the commercial viability of energy crops in parallel with cellulosic ethanol production technologies.

ELPC recommends enhancing and amending the Biomass Research and Development Act (BRDA) in the 2007 Farm Bill to direct and fund agencies to pursue energy crop demonstration projects of varying sizes, while continuing research activities. An effective energy crop commercialization program should include incentives for the entire fuel cycle of growing, harvesting, transport and usage. The goal is a program that establishes a public-private partnership to encourage innovators to take reasonable risks, shared by society, to enhance energy crop viability.

We expect that successful proposals would come from a consortium of fuel growers, plant owners, researchers and other interested parties collaborating at a local level. (For example, an ag research university teaming up with local growers.) Given the many different types of eligible institutions and the need to coordinate with owners of the end-use boiler or other facilities, the program should be stand-alone rather than an agglomeration of different programs.

The expanded BRDA program would have two incentive components: one for farmers and one for end-users of energy crops. On the growing side, we suggest that policies for early adopters should include, as a minimum, the following:

? Grants for up to 50% of the establishment costs and lost revenue related to converting a portion of land to energy crop production. Grants for lost income would be based on the producer's previous income per acre, and a contract or established local market for the harvested energy crop.

? Incentive payments to cover the difference in net income between the farmer's usual crop and the energy crop. Payments would decline over time, and should cover the first several years of production. Crop residues would not be eligible.

? Allow harvesting of Conservation Reserve Program (CRP) acreage for sale to energy crop end-users only if conservation and biodiversity goals are not compromised, while forfeiting only a small portion (if any) of contracted CRP payment rates.

For end-users, we recommend targeting existing gas and coal-fired boilers and heating systems that could modify their systems to accommodate biomass fuels, whether through gasification, direct combustion or co-firing. There are thousands of these systems at ethanol plants, universities, schools, hospitals, municipal facilities and industrial plants in rural areas throughout the country.

Using energy crops at existing facilities will allow growers and more people to address challenges with the biomass fuel infrastructure and develop experience at a more manageable scale. Targeting smaller projects reduces the cost of learning lessons as compared to starting with larger projects. Also, by targeting smaller projects, the available funding can support a greater number of projects in different geographic regions and use a wider variety of energy crops. We do not propose disqualifying larger projects if developers propose sound and realistic proposals.

For boiler owners, the enhanced BRDA program incentives would consist of several options:
? Engineering and Feasibility Grants: The program would provide funding on a 50% cost-share basis (up to \$350,000) for these upfront "soft" costs, with no guarantee for future support. Boiler owners have identified study and permitting costs as a significant early barrier.

? Grants and loan guarantees to help owners modify their boilers to accept solid fuel energy crops as a fuel source. Necessary modifications would include fuel storage, boiler modifications, construction of a biomass

gasifier, and any related ash and waste handling systems.

? Periodic incentive payments to boiler owners based on energy crop fuel use and tied to natural gas benchmark costs. The boiler owner would not receive any funding if the price of the energy crop fuel was less than a predetermined spread below the price of natural gas.

Recommendation #4: Establish A Sustainable Biofuels Program

Section 9010 of the Farm Bill authorizes continuation of the Commodity Credit Corporation's incentive program for producers of ethanol and biodiesel (collectively, "biofuels") derived from corn, wheat and other agricultural commodities, and cellulosic feedstocks (such as hybrid poplars and switchgrass), and fats, oils, greases and certain animal byproducts. It provided feedstock support for year-over-year change in production by biofuels facilities and was intended to improve facilities' cash flow during early production years when debt loads were high.

Because of the strong market for ethanol, Section 9010 funding was eliminated in 2006. Section 9010 could, however, be re-designed as a Sustainable Biofuels Production program in two ways.

1. Provide feedstock purchase incentives to assist developers of new generation cellulosic ethanol plants in purchasing cellulosic biomass materials such as corn stover, wood chips and energy crops. Farmers need to receive net income per acre that is comparable with growing conventional crops while cellulosic plant operators need lower feedstock costs to offset the higher anticipated capital and operating costs of first generation cellulosic ethanol plants. Redirecting the Section 9010 program towards these plants is a way of achieving these objectives.

2. Encourage the substitution of biomass for natural gas or coal as an energy source at ethanol and other biofuels facilities. Ethanol plants have become a significant user of natural gas, and high gas prices are leading some new plants to consider using coal which has negative environmental consequences. Using biomass as a heat input would help to build the biomass market infrastructure for eventual use in cellulosic ethanol and would make conventional ethanol production more sustainable from an energy balance and environmental perspective. This program would provide feedstock purchase support for the documented usage of biomass in renewable fuels facilities.

Funding for this program should be \$10 million per year in 2008, ramping up to \$50 million per year in 2012 as more plants begin to use biomass as either a heat input or for cellulosic ethanol production.

Recommendation #5: Improve USDA's Organization

Finally, Congress should consider creating an Undersecretary for Energy and Bio-Based Products within the USDA. Currently, at least three different Undersecretaries manage different aspects of farm-based energy development at USDA --Natural Resources and Environment (for CSP and other programs that currently involve or may involve energy development); Rural Development (for Rural Utilities and Rural Business Cooperative Service) and Research, Education and Economics (for research and extension activities). Creating a new

Undersecretary for Energy and Bio-Based Products would clarify and strengthen the agency's farm-based energy research, development, demonstration and commercialization implementation and oversight, and it would eliminate duplicative responsibilities that run throughout the agency.

Conclusion

The next Farm Bill can build upon the successful innovative clean energy development programs created in the 2002 Farm Bill and achieve major energy, economic and environmental progress for our country. Apart from the improvements suggested above for the existing Energy Title programs, ELPC supports renewed authorization and appropriations for the Section 9002 Biobased Products program, for additional research in carbon sequestration to fight global warming challenges, and for other targeted improvements to the Conservation, Rural Development and Research Titles that promote sustainable energy development. Rural America is the source of much of our nation's renewable energy potential, and that potential cuts across state and regional boundaries. Strategic new investments can spur billions of dollars of investment in new bioenergy, wind energy, solar and energy efficiency projects throughout rural America for the benefit of all Americans.

Thank you for the opportunity to discuss these important issues with you today and for your consideration of the suggestions that I have presented. The Environmental Law & Policy Center looks forward to working with the Committee to find ways to benefit both farmers and the broader public by expanding and improving the Farm Bill Energy Title in the next Farm Bill.