

# 25X25

**25 by 25**

**Agriculture's Role in Ensuring  
U.S. Energy Independence—**

**A BLUEPRINT FOR ACTION**

**August 2004**

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# 25 by 25

## Agriculture's Role in Ensuring U.S. Energy Independence–

### Preamble:

***Whereas,***

*current and future risks to U.S. energy security are mounting;*

*domestic and global energy demands are growing exponentially;*

*environmental and health concerns and risks associated carbon based fuel sources are escalating;*

*solar and wind energy can be captured on the land mass managed by U.S. agriculture; and*

*technology and production capabilities allow America's farmers and ranchers to play a major role in insuring a fully sustainable U.S. energy system;*

***Now therefore,***

*the members of the Ag Energy Working Group offer the following draft vision statement as a starting point for more thoughtful dialogue on the overarching contribution which the agricultural sector can make as a producer of energy:*

### Draft Vision:

*Agriculture will provide 25 percent of the total energy consumed in the United States by 2025 while continuing to produce abundant, safe and affordable food and fiber.*

**Produced by the Ag Energy Working Group  
with support from the Energy Future Coalition**

# Agriculture's Role in Ensuring U.S. Energy Independence–

## A BLUEPRINT FOR ACTION

### The Quest for New Energy Solutions

The relative prosperity and quality of life which our nation and citizens enjoy today is nearly unparalleled across the globe. Whether measured by gross domestic production, individual net income, educational opportunities, access to goods and services, safety and security indices, amount of leisure time or life expectancy, Americans are exponentially better off than most of the six billion people that inhabit the earth with us.

For the United States and most developed nations, the foundation of this prosperity has been the availability of abundant and affordable sources of energy. Until recently, most Americans took energy availability for granted: the lights came on when the switch was flicked; gasoline and other liquid fuels were seemingly limitless in supply; power was readily available to operate our farms, factories and offices; and our homes and workplaces were warm in the winter and comfortably cool in the summer. Most of us gave little or no thought to where our energy came from or how much it cost.

Today however, there is emerging awareness and understanding that the carbon based energy system we have depended upon to fuel growth and development is not sustainable. World oil reserves are in fact limited and, even more problematic, are located in politically volatile regions of the world. Our dependence on foreign oil continues to increase, further compromising economic and national security. The costs of petroleum, natural gas and electricity are increasing rapidly, affecting the vitality of the U.S. and world economies. Emissions from the burning of coal, oil and natural gas are impacting the environment and global climate. The lack of access to basic energy services by the world's poor is widening the gap between the "haves" and "have nots", creating additional global security concerns and challenges.

The following facts underscore the severity of national and global *energy insecurity* today:

- as a nation the U.S. now imports more than 50 percent of the petroleum it uses
- the U.S. consumes more than 20 million barrels of petroleum each day
- the U.S. spends \$120 billion a year on oil imports
- two-thirds of the world's oil reserves are located in the Middle East; U.S. reserves equal 2 percent of the total
- carbon dioxide levels in the atmosphere have been increasing for the last 200 years
- average temperatures in the Northern Hemisphere were stable for 1,000 years but have been rising steadily for the last century and faster for the last 20 years
- fossil fuel production and use account for 60 percent of the greenhouse gas emissions affecting climate change

- two-thirds of the world's population do not have access to modern and reliable energy services
- the energy deprived are the world's most impoverished people
- the United Nations projects that the populations of the 50 poorest countries will triple over the next 50 years

Energy, economic development, national security and environmental quality issues are inextricably linked. As noted by Timothy Wirth, Boyden Gray and John Podesta in their July/August 2003 Foreign Affairs article entitled *The Future of Energy Policy*, "Energy is the common thread weaving through the fabric of critical American interests and global challenges. U.S strategic energy policy must take into account three central challenges— economic security, environmental protection, and poverty alleviation— and set aggressive goals for overcoming them."

### **Agriculture's Role**

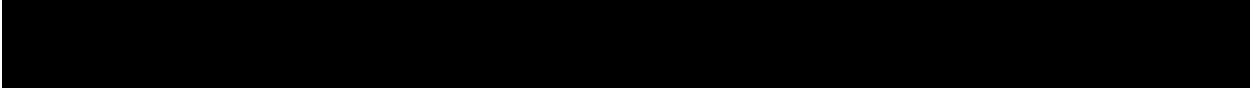
American agriculture is well positioned to play a greatly expanded role in the development and implementation of new energy solutions. As a result of mounting economic, national security and environmental concerns, renewed efforts are underway to chart a new energy future for the United States and the world. American agriculture, long known and respected for the role it plays in producing food and fiber, can and must be a leader in these efforts.

An emerging opportunity exists for crop, livestock and grass producers and tree farmers to become major producers of another essential commodity— energy. Over the past several decades corn and soybean producers have demonstrated how the agricultural sector can become modern day energy producers. The potential exists however for the ag sector to play a much larger and much more important role in harnessing wind and solar energy and producing renewable energy feed stocks to support growth and development.

With appropriate technological innovation, incentives and investments, America's farms and ranches can become the factories which produce a new generation of fuels and feed stocks to help meet the nation's energy needs. While producing energy, the sector will capture carbon, sequester greenhouse gases and improve air, water and soil quality. In short, agriculture can become a significant part of the solution to our nation's energy and environmental challenges. In doing so it will also strengthen and help bolster the economy of rural America.

Biofuels represent an excellent example of agriculture's rapidly emerging role as an energy producer. Since the Arab oil embargo in the mid 1970s, the production and use of ethanol and biodiesel in the U.S. have increased significantly. Today, biofuels are increasingly seen as a viable supplement and in some cases alternative to petroleum.

Ethanol production in the United States is expected to approach 4 billion gallons in 2004. By comparison, over 135 billion gallons of gasoline were consumed in the U.S. in 2003. In the near term, industry



experts believe that emerging technology will allow for the commercial production of ethanol from corn stalks, wheat straw, rice hulls, grasses and other agricultural crops or byproducts, increasing production to somewhere in the range of 50 billion gallons per year.

Production and use of biodiesel is increasing as well, growing from 100,000 gallons in 2000 to 20 million gallons in 2003. Combined, liquid fuels produced from agricultural feed stocks could displace 25-30 percent of U.S. petroleum imports and move the nation closer to achieving the goal of energy independence.

As promising as these possibilities are, agriculture's role in energy production is not limited to the production of liquid fuels for transportation. The sector is also well positioned to generate electricity by harnessing wind energy and capturing and utilizing methane gas emissions from agricultural operations. Capturing solar energy for electricity generation on agricultural lands provides additional opportunities for farmers and ranchers to become energy producers, particularly in the arid western states. Additional opportunities exist to utilize energy crops, crop residues and agricultural byproducts in generating process heat and power.

### **Charting a Course of Action**

Although farmers and ranchers are increasingly recognized for the important role they play in producing liquid transportation fuels, sequestering greenhouse gases and strengthening domestic and international economies, the agricultural community as a whole has not developed, embraced and marketed a shared comprehensive vision for the role the sector can play in helping the nation achieve energy independence. While energy issues are rising on most organization's priority lists, much of the current discussion is focused on cost and availability concerns and production incentives, rather than on the opportunities which could develop for agriculture and rural America if energy production was embraced as a primary objective.

In the spring of 2004 a working group of agricultural leaders came together to explore agriculture's possible role in developing and implementing new energy solutions. The individuals serving on the working group brought with them extensive leadership experience, many having served as Presidents of national organizations representing crop and livestock producers, general farm organizations, academia, agribusiness and agri-communication interests.

After extensive dialogue and networking with a wide range of agricultural stakeholders and energy advocates, the working group developed a draft vision statement outlining agriculture's role as an energy producer. They also discussed what it would take to unite and mobilize the agricultural community to embrace and work proactively in support of new energy solutions. Their conclusion: the time has come for the agricultural community to define the role the sector can play in moving the nation towards energy independence. They also identified the need to develop a comprehensive strategy and action plan to implement the sector's vision.

## **A Draft Vision**

Given the magnitude of the energy, environmental and economic challenges which our nation and the world are facing, the working group believes that it is imperative that the U.S. agricultural community develop and forcefully champion a bold vision for the role the ag sector can play in producing clean, affordable and readily available sources of energy.

The following preamble and vision statement are offered as a starting point for additional dialogue on the overarching contribution which the ag sector can make as a producer of energy.

### **Preamble:**

*Current and future risks to U.S. energy security, rapidly growing domestic and global energy demands, environmental and health concerns and risks associated with carbon based fuel sources require development of additional domestic energy resources; the solar and wind energy that can be captured on the land mass managed by U.S. agriculture, and the agricultural industry's technology and production capabilities allow America's farmers and ranchers to play a major role in insuring a fully sustainable U.S. energy system.*

### **Draft Vision:**

*Agriculture will provide 25 percent of the total energy consumed in the United States by 2025 while continuing to produce abundant, safe and affordable food and fiber.*

In crafting this draft vision statement, the working group felt that agriculture's greatest contribution to new energy solutions would involve the production of liquid transportation fuels and the generation of power from wind, energy crops and agricultural residues.

The working group was also very clear in their thinking that the sector could become a major energy producer without negatively affecting food and fiber production. Any vision or strategy which would diminish U.S. agriculture's vital role in food and fiber production in order to stimulate energy production was seen as counterproductive to national interests. The vision outlined by the working group espouses a food *and* fuel rather than a food *or* fuel production role for U.S. agriculture.

## **Benefits and Barriers**

In proposing this draft vision statement, the working group identified multiple benefits which would accrue to rural America and the ag sector as farmers and ranchers assume the role of energy producers. Chief among these are increased farm income; added value uses for crops, livestock, ag residues and byproducts; alternative enterprises; more productive use of marginal lands; resolution of air, water and soil quality problems emanating from agricultural operations; improved wildlife habitat; lower energy input costs; and reduced reliance on government payments to maintain the viability of U.S. agriculture. Implementing this vision can also have a major impact on rural development with many job opportunities being created in rural areas through the processing of agricultural products and byproducts and through



the installation and maintenance of equipment needed for electricity generation on agricultural lands.

The working group is also acutely aware of major barriers that could impede progress towards attaining their vision. Examples include public laws and policies which protect and incentivize current energy systems; a need to change attitudes and mindsets; comfort with existing agricultural programs, production systems and alliances; the perception that agriculture could be displacing other energy producers; economically competitive alternatives; lack of access which distributed energy producers have to the grid; and lack of coordinated research and development to close technology gaps and widen the spectrum of useable feed stocks.

Of all the barriers identified, three stand out in terms of relative importance and need for immediate attention. These include:

1. inadequate focus on renewable energy opportunities;
2. the lack of a strategic vision defining the agricultural sector's role in producing energy; and
3. the lack of a detailed action plan for developing and implementing new energy solutions from U.S. agriculture.

### **What the Ag Sector Must Do**

This report forecasts a greatly expanded role for U.S. agriculture in the production of energy. It also concludes that the time has come for leaders representing America's farmers, ranchers and allied partners to come together to achieve consensus on a common energy vision and action plan.

Achieving a vision of the magnitude proposed by the working group is no small task and will require much work for it to become a reality. Among other things:

- decision makers and the general public need to be educated about the importance and benefits of farm-based energy;
- public policy must be crafted that will enable agriculture to help the nation achieve energy independence;
- production and marketing strategies must be developed;
- alliances must be created and maintained;
- equity capital must be secured;
- commercial scale processing plants must be constructed; and
- processing, transportation, transmission and distribution challenges must be overcome.

Each of these undertakings represents a daunting challenge, but by working together, the agricultural community can unite, pool its collective resources and work collaboratively to craft new energy solutions for the nation.



## **A Path Forward**

The first step on the road to achieving energy independence through U.S. agriculture involves the development of a strategic action plan. Towards this end the working group suggests that leaders representing the nation's agricultural community come together to discuss and agree on agriculture's role in energy production going forward, along with a plan for bringing this vision to life.

After achieving consensus on a shared vision, an alliance should be created through which the entire agricultural sector can embrace and work proactively in support of new energy solutions. Among other functions the alliance would:

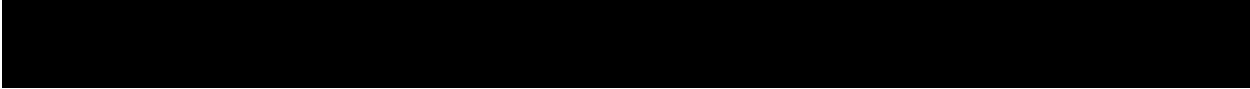
- Maintain an ongoing dialogue with the ag sector and forge partnerships/coalitions with other energy stakeholders.
- Provide input on needed research and development projects and demonstration operations that are required to prove the technical and financial viability of energy production in agriculture.
- Mobilize grassroots ag sector constituents and associated partners to build congressional support for embracing new energy solutions.
- Communicate to the American public that agriculture is a key component of a new national energy strategy, using ag outlets, op-eds, editorial board sessions, conferences and other information multipliers.
- Facilitate the marketing of energy and conservation commodities and the reduction or elimination of associated barriers.

## **A Unique Opportunity**

Our nation—and the world—is searching for common sense solutions to complex and challenging problems. Across the globe efforts are underway to reduce dependency on oil, improve economic conditions, address environmental concerns resulting from the combustion of fossil fuels and improve international security by helping the world's poor gain access to modern non-degrading energy services.

American agriculture can provide solutions to many of these challenges— solutions which will help improve public perceptions of farmers and ranchers. Not only do farmers and ranchers produce food and fiber, they also produce clean water and air. They maintain and improve the productive capability of soil. They provide the majority of the open space for fish and wildlife habitat and recreation, and increasingly, they are recognized for the unique role they can play in growing and harnessing energy to meet the demands of the nation and the world.

As members of the ag energy working group we are excited about these opportunities and emerging leadership roles for U.S. agriculture. We urge interested sector leaders to join with us in further exploring how the farming and ranching community can come together and craft win-win solutions which address both producer and societal needs.



**Appendix**

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## Project Steering Committee

**J. Read Smith-** St. John, Washington (Committee Co-chair)

- Wheat, small grains and cattle producer; former President- National Association of Conservation Districts.

**William Richards-** Circleville, Ohio (Committee Co-Chair)

- Corn and soybean producer; former Chief- USDA Soil Conservation Service

**Duane Acker-** Atlantic, Iowa

- Former President - Kansas State University; Chairman- Iowa Agricultural Finance Corporation; former USDA Assistant Secretary of Agriculture for Science and Education; farmer

**Barry Flinchbaugh-** Manhattan, Kansas

- Professor of Ag Economics, Kansas State University; Chairman- Commission on 21<sup>st</sup> Century Production Agriculture

**Richard Hahn-** Omaha, Nebraska

- President of Farmers National Company

**Ron Heck-** Perry, Iowa

- Soybean and corn producer; current President of the American Soybean Assn.

**Bill Horan-** Rockwell City, Iowa

- Corn and soybean producer; board member- National Corn Growers Assn.

**Glen Keppy-** Davenport, Iowa

- Grain and hog producer; former board member- National Pork Producers Assn.; member Cenex/Harvest States Co-op Board of Directors

**Allen Rider-** New Holland, Pennsylvania

- Retired President New Holland North America and Vice President New Holland North American Agricultural Business Unit

**Don Villwock-** Edwardsport, Indiana

- Grain and soybean producer; President Indiana Farm Bureau Federation; Chairman Farm Foundation

**Sara Wyant-** St. Charles, Illinois

- President, Agri-Pulse Communications, Inc. Former Vice President of Editorial for Farm Progress Companies

**Ernest C. Shea-** Lutherville, Maryland (Project coordinator)

- President Natural Resource Solutions, LLC; Former CEO, National Association of Conservation Districts

## Participating Entities

In carrying out this project, sensing interviews were conducted with representatives of a diverse group of agricultural organizations, allies and interested parties. The purpose of these interviews was to open lines of communications with stakeholders, clarify the purpose of the project, gather information, solicit recommendations and build trust and support for the initiative. The Ag Sector Energy Project Working Group extends its sincere thanks and appreciation to the following entities for the guidance and input they provided:

American Corn Growers Association  
American Farm Bureau Federation  
American Soybean Association  
Cargill Dow LLC  
Cenex/Harvest States Co-op  
Clean Fuels Development Coalition  
Baise & Miller P.C.  
Energy and Environmental Study Institute  
National Association of Resource Conservation & Development Councils  
National Association of State Departments of Agriculture  
National Association of Wheat Growers  
National Cattleman's Beef Association  
National Corn Growers Association  
National Cotton Council  
National Council of Farmer Cooperatives  
National Farmers Union  
National Grange  
National Milk Producers Federation  
National Rural Electric Cooperatives  
New Uses Council  
Renewable Fuels Association  
Rural Development Administration  
Senate Ag Committee staff  
United States Department of Agriculture  
U.S. Forest Service  
United States Department of Energy  
USA Rice Federation

## **Mobilizing Ag Sector Support for Charting a New Energy Future: Project Synopsis**

As documented in the Energy Future Coalition (EFC) report, *Challenge and Opportunity: Charting a New Energy Future*, fundamental changes must be made in the way in which energy is produced and used in the United States and the world at large.

After much dialogue and hard work among policy makers and energy stakeholders, consensus is building for a new energy strategy which:

- reduces worldwide dependency on oil, coal and natural gas;
- improves the environment; and
- helps developing nations and the poor improve their standard of living.

In order to change the current energy paradigm and achieve the goals and objectives outlined by the Coalition, an unprecedented level of collaboration among energy stakeholders must occur along with extensive public outreach, education and advocacy work. A critical first step will be to move each stakeholder sector from a mode of protecting self interests, to a position of advocating for policy changes which can be embraced and supported by a broad coalition of energy stakeholders.

In recent years, the agricultural sector has been recognized for the important role it can play in producing alternative fuels, sequestering greenhouse gases and supporting the economies of developing nations. Accelerated production and utilization of bio-based fuels would reduce dependence on fossil fuel. It would reduce the risk of climate change through reductions in greenhouse gas emissions and substantial increases in the amount of carbon that is sequestered through the use of sustainable farming systems.

Up to now the agricultural community has not come together as a united sector to forcefully champion the development and deployment of new energy solutions. The potential exists however for it to do so, and if successful, a very strong and influential political power base could be harnessed to advocate for agriculture's role in a new energy paradigm.

Prior efforts to mobilize the agricultural sector have involved a limited number and narrow range of agricultural interests. Frequently, they have been facilitated by a well intentioned external group of players who have attempted to speak for, but are not directly part of, the agricultural establishment. Efforts to build strong ag support from the "outside in" have not been successful. This project seeks to build and mobilize the broadest possible agricultural coalition from the "inside out".

### **Project Overview:**

Through this project a small group of highly respected and well connected agricultural leaders will serve as a steering committee that will help create a public/private sector partnership or coalition to provide strategic leadership in mobilizing the agricultural sector to embrace and work proactively in support of



new energy solutions. If successfully established, this partnership or coalition will:

- Maintain an ongoing dialogue with the ag sector and forge partnerships/coalitions with other energy stakeholders.
- Mobilize grassroots ag sector constituents and associated partners to build congressional support for embracing new energy solutions.
- Work through various communication outlets to reach to the American public with the message that agriculture is a key component of a new national energy strategy using ag outlets, op-eds, editorial board sessions, conferences and other information multipliers.
- Facilitate the marketing of conservation commodities and the reduction or elimination of associated barriers.

**Project Objectives:**

This project is designed to:

- assess the feasibility of establishing an effective ag sector energy coalition
- review prior efforts to date and identify critical success/failure elements
- test and refine the coalition’s proposed purpose
- identify prospective coalition members
- produce an action plan to create an effective ag sector energy coalition

**Project -Sponsor:**

This project is being sponsored by the Energy Future Coalition, an independent non-partisan initiative funded by private foundations that seeks to bring about change in U.S. policy to address challenges relating to the production and use of energy. Detailed information on the coalition can be found at [www.energyfuturecoalition.org](http://www.energyfuturecoalition.org).

**Principal Consultant:**

Ernest C. Shea, President of Natural Resource Solutions LLC, serves as the primary consultant and facilitator for this project.

**For additional information contact:**

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## **Energy Future Coalition**

The Ag Sector Energy Project was conducted with financial support from the Energy Future Coalition. The Coalition is an independent initiative, funded by private foundations, that seeks to bring about change in U.S. policy to address three great challenges related to the production and use of energy:

- The political and economic security threat posed by the world's dependence on oil.
- The risk to the global environment from climate change.
- The lack of access to the world's poor to the modern energy services they need for economic advancement.

The Coalition seeks to connect those challenges with a vision of the vibrant economic opportunities that will be created by a transition to a new energy economy.

The following statement of principles guides the actions of the coalition:

1. The Coalition will be a diverse, inclusive, and non-traditional partnership of business, labor, nonprofit organizations, and individuals.
2. The Coalition will be non-partisan.
3. The Coalition will encourage policy options that emphasize technological innovation without constraining consumer choice.
4. The Coalition will educate and advocate on the benefits of clean, affordable, and sustainable energy production and use, both in the United States and abroad.
5. The Coalition recognizes that the transition to a new and sustainable energy economy will take years- indeed, decades- to achieve, and will also pursue shorter-term objectives.

Additional information about the Coalition and its recommendations can be found at the EFC web site located at [www.energyfuturecoalition.org](http://www.energyfuturecoalition.org)

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