**Remarks to the Southern Crop Production Association**
**Annual Conference**

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## Introduction

- Good morning! It's great to be in beautiful Charleston and a very special pleasure for this former weed scientist to be asked to address the Southern Crop Production Association Annual Conference.

- Well today I'm not here to talk about weeds. However, I want to share a few thoughts about how agriculture and energy have converged over the past few years creating a new paradigm for agriculture.

- This new paradigm means that today, agriculture is a producer of not only food, feed, fiber, flowers but also fuel.

- Agriculture has truly become as your conference theme this year suggests, "The new frontier".

## Energy Security

- Despite the fact that gas prices have come down recently, energy security is an issue that is not going to go away until we break our petroleum habit.

- We have seen the day of reckoning coming for many years. Our wake-up call came in the early 1970s when oil supplies and prices fluctuated wildly (sound familiar) and culminated in the 1972 oil embargo by OPEC.

- Even then our reliance on imported oil was only 28 percent. Today we import more than 60 percent of our oil. If this happened today, we would have a genuine catastrophe.

- Back in the seventies we made a few inroads into energy conservation and even began developing bioenergy; however, by the mid-1980s oil became cheap again and the solution to our energy needs became importing even more oil.

- Now, over 30 years later – the situation with regard to energy has approached the critical stage. Even with the drop in oil prices in the past couple of weeks, we can only dream of $1.00 gallon gasoline.

- The United States has a great and growing appetite for oil. We import over 13 million barrels of oil per day, making the U.S. the world's largest importer of petroleum. We import more than the next three largest oil importing countries, Japan, China, and Germany, combined!

- Our cost for importing foreign oil is now between 1and 2 billion dollars per day and likely to increase in the future. That makes our yearly cost for importing oil between 400 and 700 billion dollars per year.

- By-the-way, the top suppliers of petroleum to the U.S. are Canada, Saudi Arabia, Mexico, Venezuela, and Nigeria.

- While we comprise only 5 percent of the world's population, we use 25 percent of the world's energy, compared with China, who consumes only 11 percent of the world's energy, yet they account for 21 percent of the world's population.

- But guess what? As China's economy has grown, so does it appetite for oil. There are other countries that are increasing their appetite for oil.

- Oil is also getting harder to find. Established oil and gas fields are maturing, such as those in Mexico and the North Sea. Often new discoveries are in difficult areas to access, such as the Arctic or in deep waters of the ocean.

- Some of the most readily available sources of energy are in unstable regions of the world, often controlled by governments that are not always friendly toward the United States.

- Experts are saying we will soon reach global "peak" oil - if we haven't already. Unless there are multiple new discoveries, this event will probably occur in the near future according to most experts. This time the solution cannot be import more oil – where will we import it from? This is certainly a sobering thought.

- Remember, in the 1970's the world oil suppliers were operating at about 65% capacity. Today they are operating at about 98% capacity. Clearly, the world must move toward more sustainable, renewable energy.

- You might ask, "Won't wind, hydro, geothermal, tidal waves, ocean and river currents, solar, nuclear, hydrogen, and as yet unnamed "wonder" inventions solve our energy problems in the future?"

- Maybe, but right now I'm betting on the sun. Of course, the sun is the only ultimate energy source-and it will burn out in 4 to 6 billion years.

- You may ask, "Why is sustainable energy such a great a concern?" In the span of our civilization the era of the fossil fuel energy is but just a blip of time only about 150 years so far out of 10,000.

- I've mentioned the short-term thinking back in the 1970s in our energy policy, but it's interesting to note the original pioneers of our transportation industry were inspired visionaries.

- For example, Henry Ford envisioned fueling his automobiles with biofuels, particularly ethanol, Rudolph Diesel, inventor of the diesel engine, designed his engine to run on derivatives of peanut oil.

- Perhaps the most prescient of all was Thomas Edison who in 1931, in a conversation with his friends Henry Ford and Harvey Firestone said, "I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that."

- Edison was right; the sun is our best source of energy—enough of the sun's energy reaches earth in one hour to supply the planet's energy needs for a year. The sun provides an inexhaustible source of energy. At least for the next 4-6 billion years!

- Whether oil production has "peaked" is debatable. One thing however is not…global demand for energy is rising rapidly. The U.S. Department of Energy estimates that by 2015, global energy consumption will increase by over 34 percent.

- The greatest growth is expected to come from the developing economies of China, India, and other Asian nations. In fact, almost two-thirds of recent global growth in oil demand has come from China and other rapidly growing economies.

- These same emerging economies are increasing their standard of living and therefore increasing their energy consumption. For example China is adding over 8 million new automobiles each year and India is bringing out a new inexpensive automobile that will put that that country on wheels.

- In addition to growing demands for energy, the rapidly growing middle class in China and elsewhere are also demanding better quality and more foods, especially meats and dairy products.

- In order to keep up with the growing demand for not only fuel but also food, the world must diversify its energy sources and also increase agricultural productivity.

- Today energy is as critical to our survival and way of life as food and water. The world is at a critical juncture where the growing demand for energy is out-pacing the supply, especially when it comes to petroleum.

- The worlds' economies are currently held hostage by fluctuating energy supplies and the rising cost of petroleum. Our lack of energy security threatens both our economic and national security.

- At the same time, our planet is feeling the effects of the greenhouse gasses produced as a result of our reliance on petroleum. For these reasons, our nation has made a commitment to reduce our nation's dependence on imported petroleum.

- Renewable energy from biofuels production is one part of the solution…along with other renewable sources like wind, solar, hydro, and geo-thermal energy, and conservation.

**Energy Policy**

- A year ago, President Bush called for a 20 percent reduction in U.S. gasoline use by 2017 and Congress passed the Energy Independence and Security Act of 2007 which calls for production of 36 billion gallons of biofuels by 2022. This is a 5-fold increase above current levels and clearly requires the commercialization of the next generation biofuels…cellulosic ethanol or may direct conversion of biomass into gasoline or diesel.

- Fortunately, the United States has abundant agricultural and forest resources that can be converted into biofuels.

- Recent studies by USDA and the U.S. Department of Energy (DOE) suggest these resources can be used to produce enough ethanol – 60 billion gallons/year – to displace about 30 percent of our current gasoline consumption by 2030.

- Right now most of the ethanol we use in the U.S. comes from corn because that's what we're good at growing. In Brazil the can grow more sugarcane for ethanol.

- In just a few short years, the United States has become the world's leading producer of biofuels. We're first in ethanol, second in biodiesel, and growing in both areas.

- We now have about 162 ethanol biorefineries in the U.S. and 41 more under construction. We also have more than 170 biodiesel plants in operation with another 57 in the works.

- Ethanol production in the United States has grown from 175 million gallons in 1980 to 1.4 billion gallons in 1998, to about 9 billion gallons in 2007.

- We will be bumping up to 12 to 13 billion gallons per year in a year or two.

- Last year, we produced 450 million gallons of biodiesel. That's up 80 percent from 2006. Today there are more than 650 biodiesel fueling stations in America.

- None of this would have been possible without the hard work of America's farmers.

- The U.S is the also the world leader in bringing cellulosic ethanol into production. The first demonstration-scale cellulosic ethanol plant in the United States opened a few months ago. Located in Louisiana, the plant will use sugarcane bagasse, dedicated energy crops, wood products and switchgrass to produce ethanol.

- Other cellulosic ethanol plants are being built across the country—one in Georgia (range fuels) will use forestry residues—one in Tenessee will use switchgrass—another in California will use variety of biomass materials—wood waste, agricultural residues and municipal solid waste.

- I recently visited Cello Energy in Bay Minette, Alabama. Cello has a prototype plant to produce diesel from any carbon source – switchgrass, corn stalks, rubber tires, etc.

**Farm Bill**

- USDA has invested heavily in renewable energy. The new Farm Bill includes more than $600 million in new mandatory funding for renewable energy programs over the next five years. And that's on top of the $35 million that we're spending today for woody biomass research and renewable energies.
- That new $600 funding creates a new biomass crop assistance program to help producers who want to grow biomass crops and also to develop conversion facilities.
- The Energy Title provides $320 million in mandatory funding for loan guarantees for commercial and pre-commercial biorefineries to produce these advanced biofuels.

- The Farm Bill also reauthorizes the USDA Biodiesel Education Program for an additional five years. The program educates producers and consumers about the benefits of biodiesel.

- Education efforts will focus on the importance of maintaining fuel quality throughout the production and distribution system and also developing new feedstocks for biodiesel, such as animal fats and recycled restaurant grease.

- The Department of Energy has also invested in three new Bioenergy Research Centers and is working with private industry to develop six commercial-scale cellulosic ethanol refineries and seven smaller-scale ones.

- So far in our quest for greater energy dependence, America's farmers have risen to the challenge producing a record corn crop in 2007 of 13.1 billion bushels. Last year ethanol

- And despite this years flooding, U.S. farmers expect to harvest over 80 million acres of corn and more than 74 million acres of soybeans in 2008.

- Demand remains high for high-quality U.S. agricultural products. This year USDA expects agriculture exports to reach a record level of $109 billion. That's up $26 billion over 2007's record-breaking performance, and it represents a phenomenal jump of $40 billion in export sales over the past two years.

- We expect net cash farm income to reach $96 billion this year as well, and that's driven by the strong prices for agriculture commodity crops.

**Food vs Fuel**

- The outlook for American agriculture is very good; having said that, our nation's farmers and producers are also coping with higher costs of fuel and feed and fertilizer. The roughly 60 percent increase in the world price for oil over the last 12 months that we've seen has had a strong impact on farm operations and retail food prices.

- And the increases that we've seen recently in the food prices have caused some to blame ethanol and biodiesel for those rising food prices. They argue that if we just stopped making ethanol from corn and biodiesel from soybeans we'd be just fine on that food price increase front.

- But the facts just don't bear that out. Taking biofuels out of the energy portfolio would do nothing to blunt the impact of higher oil prices on our agriculture or any other sector of our economy.

- In fact it really would mean higher energy prices for everyone. The Department of Energy calculates that blending ethanol into gasoline reduces the price of a gallon of gas by 20 to 35 cents a gallon.

- For the nation as a whole, those savings amount to between $30 billion and $50 billion a year.

- Even with about 23% of the corn crop going into ethanol we have fulfilled export demands and maintained our corn stocks. In fact, exports increased 14% this year and stocks rose about 272 million bushels.

- Globally, there are many supply and demand factors at play affecting commodity prices. For one thing, higher incomes, population growth, and depreciation of the dollar are increasing the demand for food worldwide.

- Strong global economic growth, particularly in developing countries is creating a growing middle class in some foreign countries. This means increased consumption of meat, dairy products, and vegetable oils.

- Additionally, drought and dry weather have lowered production and reduced stocks in many grain producing regions of the world; and some countries have imposed export restrictions.

- All these factors contribute to higher commodity prices. In addition, record prices for gasoline and diesel fuel are increasing the costs of producing, transporting, and processing food products.

- Americans should know that less than 20 cents of every dollar spent on food consumed at home or in restaurants goes back to the farm that is producing the crop. The other 80 cents goes toward packaging, processing, distribution, transportation and, of course, other marketing costs.

- And most food packaging uses petroleum-based plastics and products that are generally moved by rail or truck, again, incurring fuel costs.

- Of course the best way we can minimize the impact of biofuels production on food prices is to move towards more sustainable next-generation biofuel technologies that do not rely on grains and oilseeds used for food or feed.

**Cellulosic Biofuels**

- That is why the Administration is refocusing its policies on ethanol and heavily investing in new technologies that will produce cellulosic ethanol from a wide variety of biomass sources.
- These biomass sources include new energy crops like switchgrass, miscanthus, hybrid poplars, and other crops as well as agricultural and forestry residues and waste products such as restaurant grease.

- Of course there are other important environmental benefits from replacing petroleum with renewable fuels. DOE scientists found that corn ethanol from the U.S. reduced greenhouse gas emission 19 percent compared with gasoline, when the full "life cycle" of the fuel is considered – from growing it to producing the fuel and burning it.

- DOE scientists estimate that 13 million tons of greenhouse gases were avoided in 2007 due to biofuels production and use.

- Additionally, ethanol is also being used to replace methyl tertiary butyl ether (MTBE), a toxic additive, in gasoline.

- The next generation of biofuels—cellulosic—made from switchgrass, corn stover, wood chips and other non-food sources promises even more significant reductions in

- Moving away from petroleum to renewable energy sources such as biofuels has many positive attributes. Using biomass for energy strengthens rural economies, decreases America's dependence on imported oil, avoids use of highly toxic fuel additives, reduces air and water pollution, and reduces greenhouse gas emissions.

**Conclusion**

- There's just no going back folks…renewable fuels are here to stay. Our nation has made a commitment to reducing its dependence on foreign petroleum.

- I am convinced that America's farmers and producers are up to the challenge and that we can continue to produce enough food, feed, flowers, and fuel and do it sustainably.

- I am also convinced that we have the intellectual capacity and resources to develop the technology needed and that agriculture is indeed *"The New Frontier."*

- Achieving sustainable energy security is a far greater challenge than sending a man to the moon and bringing him safely back to earth. This is an effort you can be involved in…indeed, for success, you must be.

- Join me in assuring that these United States of America do not shrink from this challenge.

- Let us build on what we began in the 70s and create a nation where energy is clean, abundant, secure, affordable and sustainable.

- Most importantly, let's remember each of us has a role to play. I challenge you to make that decision and become a part of the solution to ensure a bright future for all.

- Thank you and God Bless America.