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Fact: **1. Corn for ethanol = 20% of 2006 corn harvest.**
2. This is enough to replace 1.5% of imported oil.
3. Ethanol commands a price premium.

Source: Statement of Keith Collins Chief Economist, U.S. Department Of Agriculture Before The U.S. Senate Committee On Agriculture, Nutrition And Forestry January 10, 2007. (Google this title to find complete document.)

Notes:

Page 2 (PDF 3) -- 20% of corn harvest

Page 12 (PDF 5) -- 1.5% of crude oil imports

Page 11 (PDF 4) -- the long-standing price premium of ethanol over gasoline.

STATEMENT OF KEITH COLLINS
CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE
BEFORE THE U.S. SENATE COMMITTEE ON AGRICULTURE,
NUTRITION AND FORESTRY

January 10, 2007

Mr. Chairman, thank you for the opportunity to discuss renewable energy in relation to U.S. agriculture. While biomass energy from wood and waste have long been important sources of renewable energy, biofuels from agricultural crops are a rapidly growing source of renewable energy, with exciting prospects for the future. I will provide a brief status report on renewable energy focusing on biofuels, then discuss emerging issues related to the rapid growth in biofuels, and conclude with a brief summary of USDA activities in renewable energy.

U.S. consumers want an adequate, clean and affordable supply of energy. Renewable energy can help achieve that goal by utilizing naturally occurring sources such as wind and biomass. Renewable energy can reduce our dependence on fossil fuels, diversify energy sources, improve the trade balance, reduce environmental impacts, and generate income for farmers, ranchers, rural areas and others who harness these natural sources of energy. The Department of Agriculture (USDA) has programs that support renewable energy production, including research, technical assistance, loan and loan guarantee programs, and competitive grants. For example, Section 9006 of the 2002 Farm Bill, the Renewable Energy Systems and Energy Efficiency Improvements Program, has provided $73 million in grants and loans from 2003 to 2006. This program makes loans, loan guarantees, and grants to farmers, ranchers and rural small businesses to purchase renewable energy systems and make energy efficiency improvements. USDA works closely with the Department of Energy (DOE) and other Federal agencies to efficiently coordinate and implement programs to increase renewable energy production.

Overview of Energy Markets

The Energy Information Administration's (EIA) AEO 07 Reference case projections released in December 2006 place U.S. energy consumption at 101 quadrillion Btus (quads) in 2006, eight times the level at the beginning of the last century. Renewable energy consumption in 2006, including hydropower, is estimated at about 6.4 quads, less than four times the level at the start of the last century. U.S. energy use is projected to increase by 30 percent by 2030: from 101 to 131 quads. This means renewable energy production must also increase by 30 percent over the period simply to maintain its current small share of total energy use. The expected growth in energy demand represents a significant challenge if our nation is to reduce its dependence on fossil fuels. However, this growth in total U.S. energy demand also represents an enormous potential for renewable energy, including renewable fuels, with critical implications for agriculture, forestry, and rural America.

The AEO 07 EIA Reference case projects that the real price (2005 dollars) of crude oil will slowly decline from $62 per barrel in 2006 to $46 per barrel by 2012. Oil price and many other factors will influence future demand for ethanol.

Biofuels

Ethanol. In 2000, about 1.6 billion gallons of ethanol were produced in the United States, with ethanol utilizing about 6 percent of the 2000 corn harvest. In 2006, an estimated 5 billion gallons of ethanol were produced, and ethanol accounted for 20 percent of the 2006 corn harvest. Renewable Fuels Association data indicate there are now 110 ethanol plants with total capacity of 5.4 billion gallons and another 73 ethanol plants under construction and another 8 facilities expanding. When construction and expansion are completed, ethanol capacity in the United States will be 11.4 billion gallons per year, which is likely to occur during 2008-09. To

if the higher feed costs were fully passed on to retail over time, a $1 per bushel increase in the price of corn would translate into about a 3 percent increase in the consumer price of pork. This increase could be more or less depending on how much pork production declines, the speed of market adjustments, the extent to which DDGs substitute for corn and soybean meal, and how other users adjust demand in response to the increase in corn prices. Poultry producers, also heavy users of corn would be similarly affected. Cattle producers overall face a smaller impact than hog and poultry producers, because of their heavier reliance on hay, rangeland, and pasture for weight gain and cattle can accommodate a higher portion of DDGs in their rations.

USDA forecasts that choice cattle prices in 2007 will average $85 per cwt, about the same in 2006 as beef production expands modestly. Hog prices are expected to decline 13 percent as production increases by nearly 4 percent over 2006. The lower hog prices and higher feed costs will likely slow expansion beyond 2007. Broiler prices are expected to increase in 2007 as production grows more slowly due to reduced prices in 2006 and higher feed costs.

Despite higher corn and soybean prices this year, exports for both commodities remain strong. In the future, to the extent that corn and soybean prices continue to rise, exports would be expected to decline as foreign livestock produces cut back on feed use and purchase feed from other sources, such as Brazil and Argentina.

Profitability of ethanol. How the growth of corn ethanol and its effects on agricultural producers unfolds in the future depends importantly on the profitability of producing ethanol. As ethanol production expands beyond regulated markets, such as reformulated gasoline, and beyond the market for ethanol as an octane enhancer, the long-standing price premium of ethanol over gasoline is likely to decline toward ethanol's energy equivalent with gasoline.

Can ethanol's rapid production gains outstrip demand growth? If the 140 billion gallons of gasoline now consumed was E10, or 10 percent ethanol, roughly 14 billion gallons of ethanol would be used. However, the practical limit on E10 would be less than that as it would be very difficult to distribute and blend E10 everywhere. Unless E85 and flex-fuel vehicles become much more pervasive or blend levels above 10 percent are used in conventional engines (which requires regulatory approval and engine warranty coverage), demand growth for ethanol is likely to slow in several years as the E10 market approaches its limit. In the face of continued production increases, the price of ethanol could even fall below its energy equivalent to gasoline. If corn prices continue to stay strong and ethanol demand growth slows, ethanol profitability would decline and expansion could slow appreciably in several years. While this scenario would take pressure off the acreage adjustments and commodity prices in agriculture, it would diminish the ability to reduce U.S. energy dependence on fossil fuel. If ethanol is to continue its expansion beyond 10 percent of U.S. gasoline use, higher blend levels and E85 will have to become far more pervasive than they are today, and, given corn production constraints, cellulosic ethanol will have to become economically feasible.

Cellulosic ethanol. A key challenge facing renewable fuels is in the area of alternative feedstocks. Even with higher corn yields, corn ethanol alone cannot greatly reduce U.S. crude oil imports. Nearly 60 percent of U.S. crude oil use is imported. In 2006, ethanol production on an energy content basis was equivalent to only 1.5 percent of U.S. crude oil imports and a little over 2 percent of gasoline consumption. Despite ethanol's small share of gasoline demand, it already claims a large share of corn production. Ethanol could account for over 25 percent of the 2007 crop of corn, compared with 20 percent for the 2006 crop. Clearly, developing biofuels from alternative feedstocks will be necessary for long-term expansion of biofuels.