

# **Achieving Pennsylvania's Energy Independence Goals While Strengthening Conservation in Pennsylvania The Critical Role of Pennsylvania's Conservation Districts**

## **ENERGY FACTS**

- In 2006, 78,327,000 acres of corn was planted nationwide. In 2007, 92,888,000 acres of corn was planted nationwide, resulting in a 14,561,000 acre increase. In Pennsylvania, corn production acres increased by 100,000 acres from 2006 to 2007.
- In 2005, 4 billion gallons of ethanol was produced in the U.S. By 2012, that figure is estimated to increase to 12 billion gallons of ethanol.
- In 2001, 20% of the corn produced nationwide was converted to ethanol. In 2007, over 30% of the total corn production was used to manufacture ethanol.
- Recently Lake Erie Biofuels plant was awarded funding to build a plant producing 45 million gallons of biofuels annually.
- In Clearfield County, Bionol Clearfield LLC, a subsidiary of BioEnergy International, recently selected the site for its proposed \$200 million traditional dry milled corn ethanol plant. This represents a significant investment in north central PA. The plant will utilize conventional corn-based technology, will be among the largest east of the Mississippi River, and one of the nations top 10 based on output. The company has also committed to developing a pilot cellulosic ethanol plant to produce fuels using locally available organic wastes such as wood and agricultural residue.
- It is estimated that PA could produce and consume 1 billion gallons of biofuel by 2017 containing 30 percent ethanol.
- History has shown that energy production has created negative legacy issues from in-stream mills, coal mining, and oil and gas wells in PA. To help prevent negative environmental ramifications from renewable energy development, PA needs to be proactive in natural resource stewardship as we pursue increased domestic energy sources.
- A recent report from the Chesapeake Bay Commission entitled, "Biofuels and the Bay" stated, "Handled correctly, biofuels have the potential to provide significant and permanent new income sources for farmers and foresters, while serving as a means to substantially reduce greenhouse gases and better manage agricultural nutrient loadings within the watershed. Handled incorrectly, biofuels could lead to shifts in crop patterns and acreages that create an uncertain future for farmers and foresters and seriously worsen the overload of nutrients to our rivers and the Bay."
- New technologies are being developed that utilize combustion, anaerobic digestion and gasification to generate energy from manure and other feedstocks.

## **IMPLICATIONS FOR CONSERVATION AND THE ENVIRONMENT**

- Conservation District services will be needed to provide technical assistance to keep pace with increased biofuel crop production including training and education pertaining to conservation practices.
- Increased biofuel crop production will add to nutrient pollution if not accompanied by conservation measures, and should be seen as an opportunity to greatly expand cover crops and support for other agricultural best management practices. A statewide program to promote no-till and cover crops on farmland will facilitate additional erosion control.
- As biofuel plants are built and operating in PA, distiller's grain will become available for animal feed. Nutrient management technical assistance will become more crucial and conservation districts are in a position to assist the agricultural community with those needs.
- Conservation districts can provide technical assistance to the agricultural community as they convert cool season grass production to a warm season grass for the development of cellulosic based bio-fuels. Additionally, districts are poised to assist farmers as they convert marginal cropland to a warm season grass.
- Increasing emphasis on bio-fuel production will alter farm operations and increase the need for updated and improved conservation plans. A number of federal and state programs already require farmers to have a current conservation plan or an agricultural erosion and sediment control plan to meet the program's standards. Unfortunately, USDA and state agencies have not been able to provide farmers with the technical assistance necessary to help farmers meet these needs because of decreased funding and staffing.
- Pennsylvania's forests hold the potential to provide significant biomass for methanol production from currently non-utilized portions of the harvested wood products. Conservation districts can provide the oversight of these harvesting activities and encourage fast growing tree species to provide landowners income and protect the resource base.
- Alternative energy sources such as the development of geothermal systems, wind and solar power, and the development of small scale hydropower will necessitate consideration of additional environmental impacts such as erosion and sedimentation control. Conservation districts can provide assistance in the earthmoving activities associated with the construction of these needed energy sources.
- New technologies to generate energy from combustion, digestion and gasification from manure and other feedstocks need to be accompanied by proper nutrient management.
- Pennsylvania's Conservation Districts are poised to provide leadership in the area of stewardship of our non-renewable natural resources by promoting conservation of these fuels. Districts could become leaders in educating our citizens about the benefits of energy conservation.

# STRATEGIES

In order to achieve energy independence goals there is a need to expand the technical assistance capacity within Pennsylvania's Conservation Districts commensurate with the need to develop biofuel and alternative energy production that also protects soil, water and air resources. The goal of this strategy is to position Conservation Districts to deliver new technical assistance necessary to enhance the energy efficiencies within agriculture. The following funding is needed each year for the next five years.

## Conservation Planning:

- Idaho has a successful website technical assistance system designed to assist farmers in meeting their "core" natural resource planning requirements for state and federal programs through web based conservation planning tool. PA could emulate the Idaho program focusing on a website allowing PA farmers to develop conservation plan components consistent with conservation planning requirements. A Conservation website to produce and maintain an online conservation planning tool will cost approximately \$ 1 million over a 5 year period.

Website Construction and Maintenance

**\$200,000 a year for 5 years**

- Technical assistance to complete conservation plans begun with Web-based tool (40 conservation planners needed)

**\$2 million a year for 5 years**

## Conservation Planning Total

**\$2.2 million a year for 5 years**

## Other Technical Assistance:

- Deliver technical assistance to producers to improve the energy efficiency of their operations, including field and machinery operations, crop and livestock production inputs, and heating, cooling and lighting of buildings; requires hiring of new multi-county staff.
- Assist producers in adopting sound cropping systems including crop production on marginal farmland to provide feedstocks for biofuel production, such as switchgrass for cellulosic ethanol production and other crops for the manufacture of biodiesel fuels.
- Oversight of forest harvesting activities for methanol production.
- Aid landowners and local governments as they develop alternative energy sources which necessitate consideration of additional environmental impacts such as erosion and sedimentation control.
- Technical assistance and educational programs for conservation and nutrient management for the farming community.

**Other Technical Assistance Total**

**\$ 6.8 million a year for 5 years**

## Statewide Tillage Program

- Increase adoption of conservation tillage on cropland, with the goal of at least 50% of producers transitioning to no-till and a cover crop program by 2012. This new program would be administered by the State Conservation Commission through conservation districts.

**Program Total**

**\$ 1 million a year for 5 years**

## **TOTAL ENERGY STRATEGY FUNDING**

**\$ 10 M per year for 5 years**