Energy Enhancement Activities

For 2004, the Conservation Security Program (CSP) offers a limited number of enhancement payments as incentives to reward or encourage on-farm energy conservation and management. These enhancements are available once the applicant qualifies for CSP by meeting the program's entry requirements for soil and water quality.

This information will help landowners and managers determine if they are eligible for the offered payment(s) for energy enhancement activities.

Renewable Energy Generation and Energy Use Reduction

Renewable Energy Generation

Cost-conscious and conservation-minded farmers and ranchers have become increasingly aware of the impact that energy has on their ability to sustain their operations. The rising cost of electricity alone can determine whether some farmers are able to stay in business, especially diary farmers and operations that rely on pumping irrigation water. While gaining efficiency and practicing conservation can create significant savings, farmers and ranchers can add energy generation to their operations. For many farmers and ranchers, solar, wind, biogas (methane generation), and, in some instances, geothermal or hydropower energy, can be generated and used on the farm to conserve energy and increase energy independence. Currently, only 2 percent of the total energy consumption in the United States comes from clean, renewable resources, but the potential power output of renewable energy resources is great.

In order to encourage increased energy production from renewable sources, USDA, through the CSP, will provide payments to qualified agricultural producers for each 100 kilowatt hours of electricity they generate.

Documentation Required: Energy savings verified by a State Public Utilities Commission, local electric utility (when connected to the grid), or the Environmental Protection Agency's conservation verification protocol.

Energy Use Reduction (5%, 10%, & 20%)

Energy consumption in agriculture grew steadily during the 1960s and 1970s, peaking in 1978, due to increased mechanization, use of confinement housing and expanding farm size. High energy prices during the 1970s and 1990s caused

farmers and ranchers to find ways to reduce their energy costs—agricultural consumption was reduced by 41 percent from 1978 to 1998. This was primarily accomplished by reducing energy use or taking actions to use energy more efficiently while still achieving the same outcome. The following are examples of ways energy use was reduced (not including modifying tillage operations and fertilizer use):

- Switching from gasoline powered to more fuel efficient diesel powered engines
- Shifting to larger multiprocessor machines
- Using energy saving methods for drying and irrigating crops
- Replacing old machinery with more energy-efficient equipment
- Using new seed varieties to reduce energy-intensive chemical requirements
- Insulating farm buildings
- Using energy efficient irrigation systems

Opportunities for energy conservation are available in almost every application or operation on the farm or ranch. Energy conservation can be achieved from simple management changes, such as shifting energy consuming irrigation to hours of low evapotranspiration or conscientiously completing scheduled maintenance so that systems work at optimal levels[1].

The advantages of energy conservation include reducing air pollutants, reducing global greenhouse gas emissions, reducing dependence on petroleum based products, and slowing escalation of energy costs due to lower demand. The USDA is promoting energy efficiency and conservation through the CSP so that farmers and ranchers can effectively respond to energy price and availability fluctuations and achieve environmental benefits.

The CSP provides an annual payment for energy reduction to applicants who enroll in the program. The payment is based on reduction rates of 5 percent, 10 percent, and 20 percent of total British Thermal Units (Btu's)[2] consumed on the farm or ranch. A companion Job Sheet, "Btu Conversion Charts," also is available from NRCS field offices to assist with converting a variety of energy measurement units into Btu's.

Documentation Required: Receipts documenting the rolling 5-year average for energy use reduction expressed as Btu's.

[1] Reliable, Affordable, and Environmentally Sound Energy for America's Future, Report of the National Energy Policy Development Group, Office of the White House, 2002

[2] A British thermal unit is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level.