United States Department of Agriculture
Natural Resources Conservation Service

CSP Worksheet E-07

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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 includes 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.

CSP Payment CSP offers an annual payment for energy reduction to qualified 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 by stationary equipment on the farm or ranch. A baseline energy usage must be established prior to claiming this enhancement. The energy audit enhancement or baseline self-assessment will serve this purpose (**Worksheet E-01**). A companion Worksheet, ***Btu Conversion Worksheet*** is also available from NRCS field offices to assist with converting a variety of energy measurement units into Btu's.

Documentation Required: Documented baseline energy use based on a professional farm energy audit or baseline self-assessment. Itemization of management changes adopted to accomplish energy reduction. Receipts documenting average annual energy reduction compared with the established baseline.

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[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.