Chapter 12 Energy Use and Conservation

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Energy cost for operating an irrigation pumping plant is a major concern to most irrigation decisionmakers. Many are taking a close look at their pumping installations to find ways to reduce operating costs. Where practical, many irrigators are converting systems of high pressure and volume to low pressure, low volume sprinkler and microirrigation systems. Properly designed, operated, and managed systems can provide high irrigation efficiencies, and pump operating efficiencies.

Although energy conservation is not a specific NRCS objective, it is a national objective assigned to other water conservation activities that are NRCS objectives. Finding ways to reduce energy consumption in conjunction with soil and water conservation measures can be a major selling point when recommending conservation measures. The NRCS, National Irrigation Guide, Chapter 12, provides detail discussions on pump energy requirements, energy sources, pump design considerations, pumping plant installations, pipeline efficiency, variable or adjustable frequency drives for electric motors, and other energy sources for pumping water (wind, water, solar, and air). Also refer to NEH part 623 (Section 15), Chapter 8, Irrigation Pumping Plants, and Nebraska Pumping Plant Performance Criteria.