



## CONSERVATION ENHANCEMENT ACTIVITY

E533D

## CONSERVATION STEWARDSHIP PROGRAM

### Switch fuel source for pumps

CONSERVATION PRACTICE: 533 - Pumping Plant

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Associated Ag Land; Farmstead

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 15 years

#### Enhancement Description

Switch the fuel source for the pump motor(s) to an on-farm renewable source (wind, solar, geothermal, etc.).

#### Criteria

- Replace an existing pump motor with a drive unit that is powered by a renewable source such as wind, solar, geothermal, etc. that can adequately maintain the existing operating conditions, flow rates and pressures.
- The replacement or retrofit system and related components or devices meet or exceed currently applicable federal, state, and local standards and guidelines.
- Components of this enhancement will meet the NRCS Conservation Practice Standard Pumping Plant (Code 533).



# CONSERVATION STEWARDSHIP PROGRAM

## Documentation and Implementation Requirements

### **Participant will:**

#### *Prior to implementation:*

- Evaluate current operating conditions of the existing pump(s) including season of use and motor needs.
- Evaluate site specific renewable energy alternatives.
- Evaluate options during lack of production of renewable energy source.

#### *During implementation*

- Ensure installation meets federal National Electrical Code and any local or state codes.

#### *After implementation*

- Monitor and maintain system for the life span of the practice (10 years).

### **NRCS will:**

#### *Prior to implementation*

- Provide and explain NRCS Conservation Practice Standard Pumping Plant (Code 533) as it relates to implementing this enhancement.
- As needed, provide additional technical assistance to the participant as requested.
- Review with the participant the costs and benefits of conversion to renewable energy source.
- Develop written specifications describing site specific details of installation, including:
  - The replacement or retrofit system and/or related components or devices.
  - Plan view showing the location of the measures in relation to other structures or natural features, where appropriate.
  - Method used to protect existing power provider from back feed from renewable source.
  - Electrical components that meet the requirements of the National Electrical Code.
  - Operation and maintenance plan that is consistent with the purpose(s) of this practice, its intended life, and safety requirements.



# CONSERVATION STEWARDSHIP PROGRAM

**NRCS Documentation Review:**

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name \_\_\_\_\_

Contract Number \_\_\_\_\_

Total Amount Applied \_\_\_\_\_

Fiscal Year Completed \_\_\_\_\_

\_\_\_\_\_  
NRCS Technical Adequacy Signature

\_\_\_\_\_  
Date

**ND NRCS Sideboards:**

NRCS employees may design solar or wind powered pumps up to 30 gpm capacity. Designs for larger capacity wind or solar pumps and all geothermal pumps must be completed by a North Dakota licensed Professional Engineer.