



CONSERVATION ENHANCEMENT ACTIVITY

E372B

CONSERVATION STEWARDSHIP PROGRAM

Renewable Energy Source for Large Internal Combustion Engines

Conservation Practice 372: Combustion System Improvement

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

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 10 Year

Enhancement Description

Replace an existing large (>30 horsepower) internal combustion engine with a new appropriately-sized electric motor powered by a new on-farm renewable source (wind, solar, geothermal, etc.).

Criteria

- Replace the existing internal combustion engine with a new electric motor that is powered by an on-farm renewable source such as wind, solar, geothermal, etc. that can adequately maintain the existing operating conditions (e.g., flow rates, pressures, etc.).
- The new electric motor must serve the same function and perform similar type of work as the existing internal combustion engine.
- The new electric motor and on-farm renewable source 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, Combustion System Improvement (Code 372).



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Documentation and Implementation Requirements:

Participant will:

Prior to implementation

- Evaluate current operating conditions of the existing internal combustion engine including season of use and overall power needs.
- Evaluate site specific renewable energy alternatives.
- Evaluate power 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:

- Provide and explain NRCS Conservation Practice Standard Combustion System Improvement (Code 372) 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.
- Consider and document the air quality benefits in addition to the energy source savings.
- Develop written specifications describing site specific details of installation, including:
 - Description and amount of usage of the existing internal combustion system
 - Description and planned usage of the new electric motor and renewable energy source
 - Plan view showing the location of the practice installation 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.

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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