



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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Design Approvals & Acknowledgements:

Design Approval	Date	Job Approval Authority
Designed by:		
Approved by:		

Client's Acknowledgement Statement:

The client acknowledges:

- I have received a copy of the specification and understand the contents and requirements.
- It is my responsibility to obtain all necessary permits and/or rights and to comply with all ordinances and laws pertaining to the application of this practice.
- I will not begin installation of this practice until I have received appropriate approval to do so. I understand NRCS also has Federal and state laws to comply with that may take some time to address (e.g. cultural resources).

Client's Signature	Date

Certification Documentation:

	Field Evaluation: Post-treatment inventory, measurements, notes, as-built, and supporting documentation (document completion in conservation plan), as required.
	Map(s): Including field numbers, fields treated, and units treated (may document on conservation plan map), as required.
	Photos or other supporting documentation (e.g., seed tags, soil tests, receipts, invoices, spray records, fertilizer records, etc.)
Brief Description of Work Accomplished (types of equipment used, date of application, extents and quantities installed, etc.)	

Certification Statement:

The employee certifies the implementation of this conservation practice:

- Meets the purpose, general criteria, and any required additional criteria as documented in the conservation practice standard and/or enhancement sheet.
- Meets the specifications contained herein and is complete.
- Conforms to my existing Job Approval Authority controlling factors and levels.

Name	Date	Job Approval Authority

Field Level Certification – For multiple applications of this design.				
Land Unit/ Contract Item Number	Date	Unit(s)	Amount Installed	Certifier