Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

FARMSTEAD ENERGY IMPROVEMENT

CODE 374

(no)

DEFINITION
Development and implementation of improvements to reduce, or improve the energy efficiency of on-farm energy use.

PURPOSE
This practice is used to accomplish the following purpose–

- Reduce energy use

CONDITIONS WHERE PRACTICE APPLIES
The practice applies to non-residential structures and energy using systems where reducing energy use is the identified goal, except:

Use Indiana (IN) Field Office Technical Guide (FOTG) Standard (670) Lighting System Improvement for replacement or retrofitting of existing agricultural lighting systems to reduce energy use.

Use IN FOTG Standard (672) Building Envelope Improvement for replacement or installation of insulation or other modification of building envelopes to reduce energy use.

CRITERIA

General Criteria Applicable to All Purposes
Use of this standard requires compliance with all applicable federal, state, and local laws and regulations.

Implement recommendations for components of a current energy audit performed in accordance with the American Society of Agricultural and Biological Engineers (ASABE) Standard S612, Performing On-farm Energy Audits.

Where required, certify that the replacement or retrofit system and related components or devices meet or exceed currently applicable federal, state, and local standards and guidelines. Components of major activities by farm enterprises defined in ASABE S612 will meet the appropriate NRCS or industry standard, such as:

- IN FOTG Standard (533) Pumping Plant
- IN FOTG Standard (372) Combustion System Improvement
- Heating Ventilating and Air Conditioning (HVAC) per American Society of Heating, Refrigerating and Air Conditioning Engineers Standard 90.1-2010
- Ventilation fans per ASABE EP 566.1
- Greenhouse HVAC per ASABE EP406.4

CONSIDERATIONS

Energy conservation and energy efficiency improvements should consider greenhouse gas emissions and ambient air pollutants. Methods may be implemented to account for greenhouse gas emissions credits, if applicable. Actual greenhouse gas emission reductions would require separate documentation.

In order to reduce net energy use on a farm, consider possible use of renewable energy resources.

Plan progressive implementation of energy measures with ranking metrics such as life-cycle energy savings, payback period, or cost-effectiveness, etc., based on the landowner’s goals and objectives.

PLANS AND SPECIFICATIONS

Plans and specifications to implement the energy conservation and efficiency measures will be in accordance with this standard and describe the requirements for properly installing the practice to achieve its intended purpose.

Plans and specifications will:

- include written specifications that describe the site specific details of installation.
- identify and describe the existing system and related components or devices.
- identify and describe the replacement or retrofit system and/or related components or devices.
- document system energy usage and resulting potential energy savings from the implementation of this practice.
- include a plan view showing the location of the measures in relationship to other structures or natural features where appropriate.

Detail drawings of the measures and appurtenances, such as piping, inlet and outlet connections, mounting, foundations, and other structural components where appropriate.

OPERATION AND MAINTENANCE

An operation and maintenance plan will be developed that is consistent with the purposes of this practice, its intended life, and safety requirements.

Replacement or retrofit systems and related components or devices will be operated and maintained in accordance with the manufacturer’s recommendations.

Maintain records to document the implementation of energy improvements. Retain and update records for a minimum of five years from the beginning of operation of measure implementation. Recommended records to be retained include:

- Monthly utility bills
- Fuel purchases
- Yield of agricultural commodities
- Documentation of maintenance conducted on the replacement, or retrofitted system and related components or devices.

REFERENCES


