United States Department of Agriculture
Natural Resources Conservation Service

2011 Ranking Period 1

Energy Enhancement Activity – ENR06 - Upgrade of Old Diesel Powered Pumping Plants

Enhancement Description
Upgrading of diesel powered pumping plants with more efficient and cleaner alternatives that closely fit irrigation or livestock water needs. Options include electric-drive pumping plants or, if electric-drive options are not an option because electric power is not available, high efficiency diesel-powered pumping plants.

Land Use Applicability
Cropland, pastureland, rangeland and forestland.

Benefits
Old diesel engines use more energy than many alternative technologies. Many are a poor fit for the current application and they can be a significant source of air pollution. Upgrading these older systems can save energy for the farmer and have a positive impact on the local air quality.

Criteria
1. The diesel engine to be replaced must be Tier 0, in other words it has no emission controls.
2. A pumping plant evaluation must be performed to ensure the new system is properly sized to provide water flow to meet the required demands.
3. If the pumping plant is to be used for irrigation, an irrigation water management plan must be prepared or in place for the irrigation system.
4. Where a grid-connected electric-drive systems is not feasible, replacement diesel-powered engines may be used if:
    a. the replacement engine meets EPA Tier 3 or 4 rating requirements; and
    b. a spill control and containment plan for diesel fuel used by the engine is in place.
5. The engine that is replaced must be made permanently inoperable according to the criteria in Conservation Practice Standard 372, Combustion System Improvement.

Documentation Requirements
1. Verification, including photographs, of the system upgrades.
2. Verification, including photographs, that the old engine was made permanently inoperable and how the old engine was disposed of.

References

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Michigan Supplement

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References

United States Environmental Protection Agency National Clean Diesel Campaign for Agriculture - Fuels and Engines websites (www.epa.gov/oecaagct/index.html):

- Non-road Diesel Equipment – Regulations and Standards (EQP Tier rating requirements)
- Secondary Containment of Oil - Oil Spill Prevention, Control, and Countermeasures Program