

Electric forklift (left) and sawmill (right)



Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

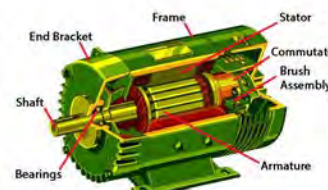
“Farm and forest operators can improve the environment and their bottom line with new, more efficient equipment!”

Climate-Smart Ag & Forestry

The NRCS Rhode Island Combustion System Improvement and Energy Efficiency Initiative is an incentive program to help farmers and forest managers to reduce emissions and improve energy efficiency and climate resilience. It replaces operational, high polluting diesel equipment with cleaner models; implements energy audits and energy efficiency practices; and repowers certain equipment with electric alternatives.

Contact

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Combustion System Improvement

Clean Your Energy & Save Money!



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Combustion System Improvement

Rhode Island Climate-Smart Ag & Forestry

kW	hp	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
0 - 7	0 - 10					7.5 0.80			7.5 0.40							
8 - 18	11 - 24					7.5 0.80			7.5 0.40							
19 - 36	25 - 49				7.5 0.60				7.5 0.30					4.7 0.03		
37 - 56	50 - 74				7.5 0.40				4.7 0.30	Option 1*				4.7 0.03		
57 - 74	75 - 99				7.5 0.40				4.7 0.40	Option 2*			4.7 0.03			
75 - 129	100 - 174			6.6 0.30				4.0 0.30					3.4 0.19 0.02			0.40 0.19 0.02
130 - 224	175 - 299		6.6 0.20										3.4 0.19 0.02			0.40 0.19 0.02
225 - 449	300 - 599	6.4 0.20					4.0 0.20					2.0 0.19 0.02			0.40 0.19 0.02	
450 - 559	600 - 749		6.4 0.20													
≥ 560	≥ 750						6.4 0.20					3.5 0.19 0.10				3.5 0.19 0.04

In the 50 to 75 horsepower category there are two options. Option 1 requires a reduced PM level (3.0 vs. 4.0), but allows Final Tier 4 to be delayed one year (2018).
NOTE: The vertical dashed lines, indicating the years, show when the seven-year life of the Tier 2/3 Equipment Flexibility Provision ends and engines can no longer be placed in service production.

Fuel Sulfur Regulations

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Nonroad	5000 ppm						500 ppm					15 ppm			
On-road	500 ppm														

Legend

EPA	Tier 1	Tier 2	Tier 3	Interim Tier 4	Final Tier 4
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Now emissions regulations take effect January 1 of the year indicated by color change unless otherwise noted.

Examples

NOx	2.0	2.0, the maximum amount of nitrogen oxide (NOx) allowed in grams / kW hr.
NMHC	0.19	0.19, the maximum amount of nonmethane hydrocarbons (NMHC) allowed in grams / kW hr.
PM	0.025	0.025, the maximum amount of particulate matter (PM) allowed in grams / kW hr.
NMHC + NOx	7.5	7.5, the maximum amount of NMHC + NOx allowed in grams / kW hr.
PM	0.60	0.60, the maximum amount of PM allowed in grams / kW hr.

EPA Non-Road Emissions Regulations

USDA-NRCS provides technical and financial assistance to help Rhode Island's farmers, ranchers and forestland managers replace old high-emitting diesel engine equipment with low-emitting diesel or electric equipment. Funding is set at a fixed rate per engine HP.

NRCS uses the EPA diesel engine non-road emissions Tier chart (above) to determine replacement eligibility. This program replaces in-use and operational Tier 0 to Tier 2 diesel powered tractors and other diesel powered farm equipment with new, Tier 4-Final equipment. To determine your Tier, match your equipment's gross HP with the manufacture year. The resulting color identifies your Tier in the Legend at the bottom of the chart.

Equipment Types



- Tractors
- Balers
- Sprayers
- Harvesters
- Loaders
- Forklifts
- Backhoes
- Motor graders
- Diesel-powered irrigation systems
- Orchard/vineyard frost protection equipment



Destruction of replaced equipment

Practice Options

- Replace in-use high-emitting diesel equipment with low-emitting diesel equipment.
- Replace existing in-use diesel equipment with electric alternatives.

Benefits

- Reduced or zero emissions
- Increased efficiency
- Upgraded technology
- Farm Bill/ IRA funding available

Requirements

- Conversion from internal combustion to cleaner internal combustion, or from internal combustion to electric powered equipment.
- Replacement engines/equipment must be new.
- Old engine starts, no drivetrain problems, working PTO.
- Off-road use exclusively.
- Owned and operated for minimum of 2 years.
- Old engine destruction & proper disposal at certified facility.