

USDA (NRCS & Other) Funding Opportunities for Air Quality Improvement and Energy Efficiency: Diesel Reduction Goal

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NRCS 5-year Strategic Plan



- **Foundation Goals:**
 - High-quality, Productive Soils
 - Clean and Abundant Water
 - Healthy Plant & Animal Communities
- **Venture Goals:**
 - *Clean Air*
 - Adequate Energy Supply
 - Working Farm & Ranch Lands

NRCS Air Quality and Atmospheric Change, and Energy Activities

- NRCS has been active in Air Quality and Atmospheric Change for more than 10 years
- NRCS developed both Air Quality and Atmospheric Change, and Energy Technology Development Teams in 2004
- Agency promotes conservation activities on private lands, and this includes helping ensure clean air and an adequate energy supply

Helping People Help the Land...and the Air



Conservation Activities Make a Difference!

- Conservation Management Plans from the NRCS adopted by more than 6,000 farmers in the San Joaquin Valley have helped bring the SJV into attainment last year for PM10
- NRCS enables producers to make “clean” choices through conservation planning and incentive programs



NRCS Conservation Programs: EQIP

- Environmental Quality Incentives Program
- Voluntary program; promotes agricultural production and environmental quality as compatible national goals
- Provides financial and technical help to install or implement structural and management practices on eligible agricultural land
- Offers contracts--incentive payments and cost-shares
- EQIP plan of operations developed in conjunction with the producer that addresses applicable natural resource concerns



NRCS Conservation Programs: EQIP

- Environmental Quality Incentives Program
 - \$444 million EQIP total nationwide in 2005
 - \$31 million Air Quality-related
 - Examples: Irrigation Pump Engine Replacement in CA; Animal waste lagoon cover; PM10 reduction off fields, roads, etc.
 - Conservation Innovation Grants (CIGs) under EQIP



NRCS Conservation Programs: EQIP

- EQIP tied to specific NRCS Practice Standards (more than 160 of them)
- 370 Atmospheric Resource Quality Management Standard—Diesel Projects primarily use this one
- EQIP priorities set by NRCS State Technical Advisory Committees
- Diesel reduction/engine replacement and efficiency programs in only a few states (CA; perhaps FL)



EQIP Diesel-Related Initiatives

California Example: 2007

- ***Diesel Engine Replacement Initiative (NOx):***
- NOx Reduction Initiative – Air Management, Pumping Plant Practice Code 533A, and 370 (Atmospheric Resource Management) standard
- Replacement of stationary or portable (non-self propelled) irrigation pumping power units—within 25% of existing engine’s horsepower rating
- Minimum two-year EQIP contract. Must certify destruction of old engine and replace with new
- “Tier III” diesel, electric motor, propane or natural gas-powered engine



EQIP Diesel-Related Initiatives

California Example: 2007

- **Agricultural Pump Engine Repowering Project:
Diesel Replacing Diesel**
(Stationary or portable non-self propelled agricultural engines)
- **Must meet CARB Tier III Emission Requirement for NO_x**
- **Replaced engine must not be sold—must be destroyed**

- | Horsepower | Max Cost Share |
|------------|----------------|
| 50-99 | \$ 5,000 |
| 100-174 | \$ 7,500 |
| 175-250 | \$12,500 |
| 251-300 | \$14,000 |
| 301-399 | \$16,000 |
| 400-499 | \$19,000 |
| 500-599 | \$23,000 |
| 600+ | \$40,000 |



EQIP Diesel-Related Initiatives

California Example: 2007

- **Electric Motor Replacing Diesel Engine Project**
(Stationary or portable non-self propelled agricultural engines)

- All electrics meet CARB Tier III Emission Requirement for NO_x
- Replaced engine must not be sold—must be destroyed

- | Horsepower | Max Cost Share |
|------------|----------------|
| 50-70 | \$ 5,000 |
| 71-100 | \$ 7,000 |
| 101-125 | \$10,000 |
| 126-150 | \$12,000 |
| 151-200 | \$13,000 |
| 201-300 | \$17,500 |
| 301-400 | \$25,000 |
| 401-500 | \$37,500 |
| 500+ | \$42,500 |



Diesel Engine Replacement in the SJV: EQIP Air Quality Success Story

Year*	Number of Engines	NOx Reductions (Tons)		Cost Shares Provided
		This Year	Life of Contract**	
2003	179	376	752	\$2,675,000
2004	75	158	316	\$691,502
2005	28	59	118	\$598,601
2006	25	53	106	\$467,512
TOTAL	307	646	1,292	\$4,432,615

Total NRCS California AQAC 2007 Budget: \$5.5 million

Total NRCS CA for Diesel Engine Replacement: \$1 million

(50% cost share); so far 27 sign-ups for \$389,500—Carl Moyer up to 100% cost share



EQIP Diesel-Related Initiatives

Other Examples: 2007

- **Connecticut:** Practices include replacing farm equipment fuel with bio-diesel or ethanol to reduce fossil fuel use; energy efficient irrigation pumps on irrigated cropland; and solar, wind, or geothermal renewable energy projects—new for this year; rates and structure not yet determined
- **Massachusetts:** Boat engine replacement under the Shellfish Aquaculture Management (706) interim standard: 100% cost-share up to \$2250 for 25 hp and up to \$3000 for 40 hp



EQIP Conservation Innovation Grants (CIG)

- A “*voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection*”
- Cooperating producers must be “EQIP eligible”
- National and State Grants; up to 50% cost share
- 2007 National Proposals were due February 2
- Only a few states will offer state CIG this year—CA has state CIG this year—proposals due April 20
- Grants announced in summer



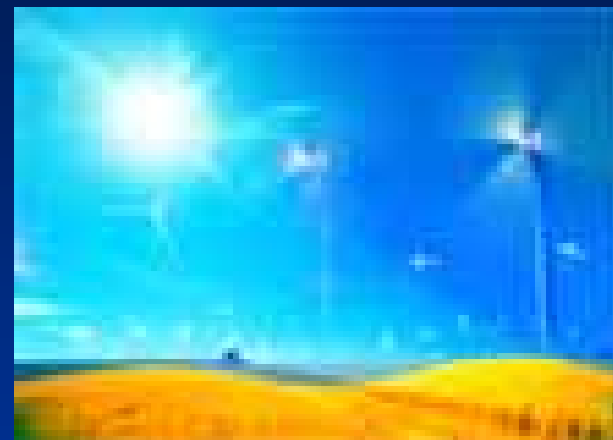
EQIP Conservation Innovation Grants (CIG)

- 66 funded in 2006
- 7 with full or partial air quality focus
- Total AQ dollars: \$3.28 million
- Diesel alternative proposals seriously considered
- Examples: Colorado State Univ.: Odor and Ammonia reduction BMP demo on feedlots and dairies



NRCS Energy Activities

- *Save Energy, Save Money!*
- 4 Energy Calculators now online at:



www.nrcs.usda.gov/technical/energy/index.html

– Animal Housing, Tillage, Irrigation and Nitrogen



NRCS Energy Activities

- Newly proposed Energy practice standard for “Conservation Power Plants”
- Focused on wind turbines and photovoltaic systems
- Possible funding in eastern Colorado under EQIP, as alternative to using diesel engines, and others



Conservation Security Program (CSP)



- *“Reward the Best; Motivate the Rest”*
- Funded in 2004, 2005, 2006
- Still uncertain about program status this year, and future—New Farm Bill would increase total acreage to nearly 100 million by 2017
- Current program rolls out CSP by watersheds
- Proposed CSP will rank applicants and likely make available to most/all private lands



Specific CSP Air Resource & Energy Enhancements Reducing Diesel Emissions

- ***On-Farm Activities:***
- Utilization of renewable fuels (biodiesel, ethanol)
- Alternative Energy Generation (wind, solar, etc.)
- Energy Audits
- Reduced tillage or no-till
- Reduction of travel
- Combining and/or reducing field operations
- Reduced pesticide applications through use of forecast system



SARE Grants

- *A competitive grants program for researchers, agricultural educators, farmers and ranchers, and students in the U.S.*
- Types of Grants:
 - Research & Education (\$30,000 to \$150,000)
 - Professional Development (Extension, other Ag Professionals)
 - Producer (\$1,000 to \$15,000; demos, neighbor outreach)
 - On-Farm Research (Extension, NRCS, others)
 - Sustainable Community Innovation
- Thru USDA's Cooperative State Research, Education, and Extension Service (CSREES); 4 Regions
- Can be for testing and demonstrating environmentally sustainable systems, including alternative energy

www.sare.org





United States Department of Agriculture
Natural Resources Conservation Service

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