

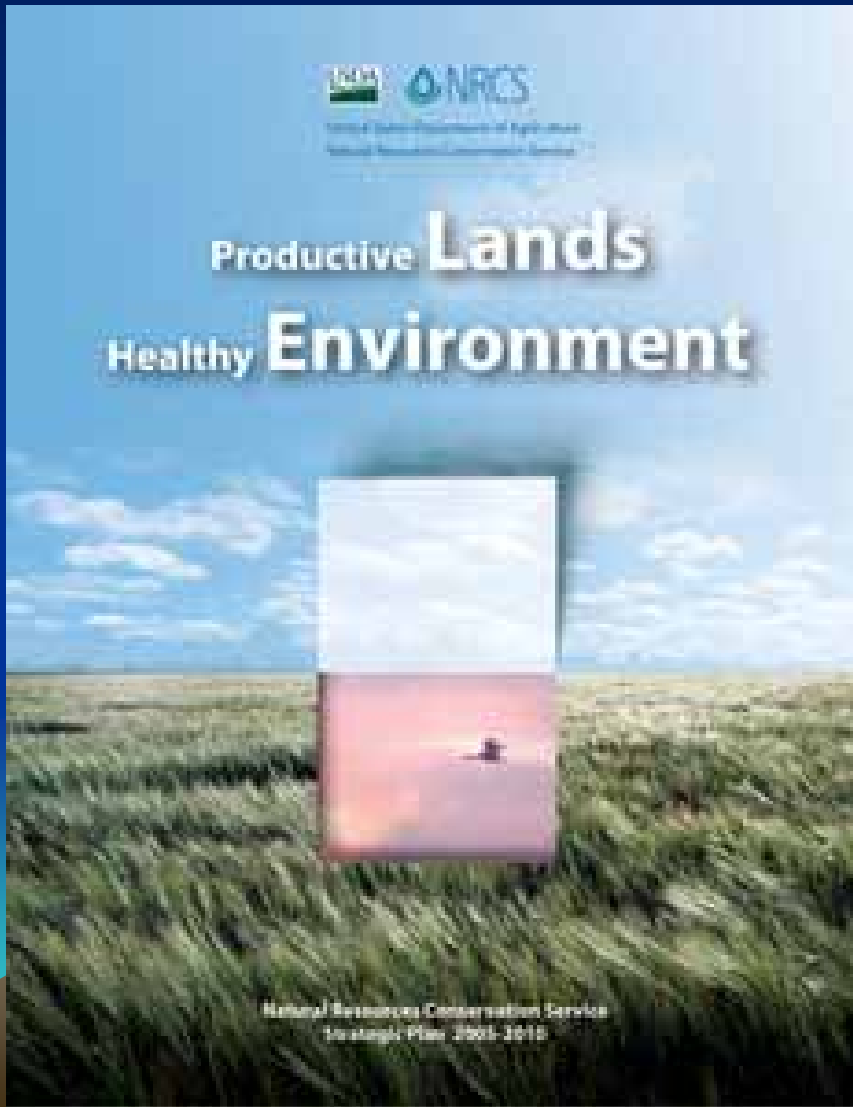
# USDA (NRCS & Other) Funding Opportunities for Air Quality Improvement and Energy Efficiency: Diesel Reduction Goal

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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<sub>x</sub>**
- **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<sub>x</sub>
- 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
<b>TOTAL</b>	<b>307</b>	<b>646</b>	<b>1,292</b>	<b>\$4,432,615</b>

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](http://www.nrcs.usda.gov/technical/energy/index.html)

– Animal Housing, Tillage, Irrigation and Nitrogen

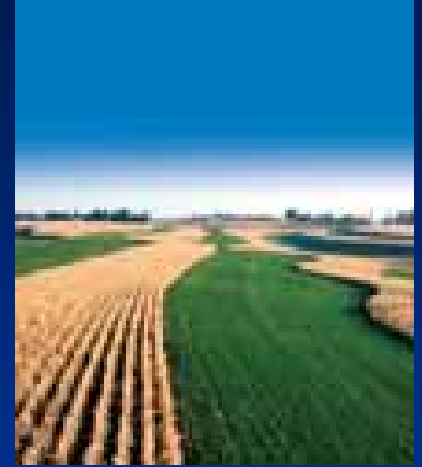


# NRCS Energy Activities

- 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](http://www.sare.org)





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