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

Clean Diesel Agriculture Leaders Forum
Sacramento
March 28-29, 2007

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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\textsubscript{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 

USDA
NRCS Natural Resources Conservation Service
Diesel Engine Replacement in the SJV: EQIP Air Quality Success Story

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Engines</th>
<th>NOx Reductions (Tons)</th>
<th>Cost Shares Provided</th>
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<tr>
<td></td>
<td>This Year</td>
<td>Life of Contract**</td>
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<tr>
<td>2003</td>
<td>179</td>
<td>376</td>
<td>752</td>
</tr>
<tr>
<td>2004</td>
<td>75</td>
<td>158</td>
<td>316</td>
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<td>2005</td>
<td>28</td>
<td>59</td>
<td>118</td>
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<tr>
<td>2006</td>
<td>25</td>
<td>53</td>
<td>106</td>
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<tr>
<td>TOTAL</td>
<td>307</td>
<td>646</td>
<td>1,292</td>
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</tbody>
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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”
- 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
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