

San Joaquin Valley Air Pollution Control District



Perspectives on Biofuels

Joint California Agriculture Biofuel Forum
September 22, 2011

SJV Air Quality

- Air quality is improving
 - Attained PM10 standard
 - Steady ozone improvements
 - Cleanest winters on record for PM2.5
- Natural challenges: climate, mountains
- Predisposition to ozone & particulate matter
- Need 75% NOx reduction
- Mobile sources
 - 80% of NOx emissions
 - Reductions slow, beyond District's authority
- Stationary source reductions diminishing
- Tighter EPA standards



Valley's Clean Air Strategy

“Leave No Stone Unturned”

- Cost-effective regulations on business
- State regulations for on-road and off-road diesel engines (trucking & construction)
- Incentive grants (goal: \$200 million per year)
- Land-use: smart growth, indirect source review
- Public engagement – *Healthy Air Living*
- Technology advancement
- Co-benefits from state climate change initiatives



HEALTHY AIR LIVING™

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Air Regulations Affecting Agriculture

- Permit-exempt per state law until 2004
- District regulations
 - Confined Animal Facilities
 - Stationary IC Engines
 - Open Burning
 - Conservation Management Plans
 - Regulation VIII - Fugitive Dust
 - Title V (federal) permitting
- State regulations
 - Pesticides
 - Portable equipment
 - Trucks
 - Off-road equipment – 2013

Incentives for Cleaner Equipment

- Increasingly important in SJV clean air strategy
 - \$300+ million awarded to-date
 - 82,000 tons of NOx reductions
- Fleet upgrades
 - Heavy-Duty Diesel Trucks
 - Agricultural Irrigation Engines
 - Off-Road Equipment, e.g., tractors
 - Diesel School Buses
 - Gross-polluting Passenger Vehicles
- Valley Air District recognized as most productive in turning funds into reductions
 - Partnerships with other districts
 - Administration of statewide programs
- Technology Advancement Program to develop Valley-specific solutions

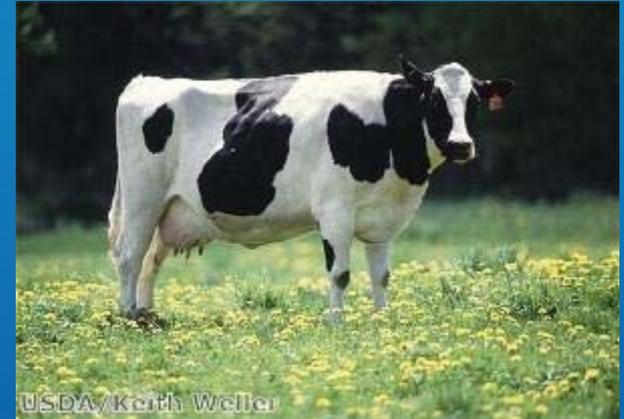


Perspective on Biofuels

- District mission focused on public health of Valley residents
 - GHG strategies and co-benefits can contribute
- Waste-to-Fuel
 - Biomass power plants: critical for reducing SJV open burning emissions
 - Dairy waste: significant SJV VOC source
 - Biodiesel: PM reduction but NOx issues not yet overcome
- Purpose-grown feedstock
 - Replacement of current crops
 - Refining and marketing capacity

Waste-Derived Biomethane

- 2 million dairy cows in SJV
 - 200 million lb/day dairy waste
 - 640 tons/day methane from dairy lagoons
 - Annual potential for 2.1 million MW-hr, or
 - 176 million gallons/yr of diesel equivalent
- SJV dairy digester experience
 - Onsite generators need strong BACT to conform to SJV NOx strategy
 - Onsite electrical generation competes with cleaner central power plants
 - Biomethane as vehicle fuel, injection to utility pipelines
- Promising opportunities
 - Multi-dairy gas gathering system + central plant appears most economical
 - Excess energy (more than can be used onsite)
 - Projects need start-up assistance, utility rate structure adjustments



Recap

- SJV air quality progress & challenges
- Comprehensive clean air strategy
- Impacts on agriculture
- Biofuels experience & opportunities



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