

Environmental Justice

Dairy Workgroup #2



Everybody's Watching



Why we are here:

SB 1383 requires the formation of a dairy and livestock sector Working Group to identify and address technical, market, regulatory, and other barriers to the development of dairy methane reduction projects [...] The Working Group will foster important relationships and build the cooperation necessary to **maximize environmental benefits, minimize impacts to disadvantaged communities**, and utilize available resources efficiently.

Achieving Success in Equity and Access

- Continue to engage local organizations and invest in disadvantaged communities to ensure broad access to clean technologies;
- Ensure air pollution reductions happen where they are needed the most;
- Integrate across programs and agencies to ensure complementary policies provide maximum benefits to disadvantaged communities;
- Implement California Energy Commission and CARB recommendations to overcome barriers to clean energy and clean transportation options for low-income residents;
- Implement AB 617 to dramatically improve air quality in local communities through targeted action plans.

AB 108, Committee on Budget. Public resources.

Section 16428.86

(a) Prior to awarding grant funds from moneys made available from the Greenhouse Gas Reduction Fund, the Department of Food and Agriculture shall review the applicant's analysis identifying potential adverse impacts of the proposed project, including a net increase in criteria pollutants, toxic air contaminants, and hazardous air pollutants; groundwater and surface water impacts; and truck traffic and odor.

(b) **A project shall not receive funding unless the applicant has** demonstrated to the Department of Food and Agriculture that the applicant has done all of the following:

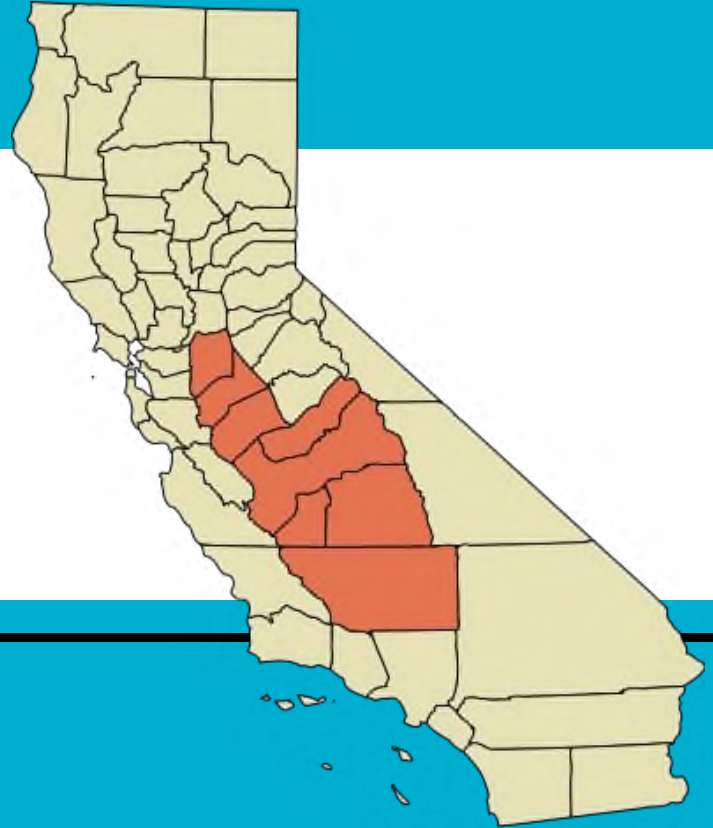
- (1) **Conducted outreach** in areas that will potentially be adversely impacted by the project.
- (2) **Determined potential adverse impacts** of the project.
- (3) **Committed to measures to mitigate impacts.**

(c) In making awards, the Department of Food and Agriculture shall **prioritize projects based on the criteria pollutant emission benefits** achieved by the project.

(d) A project funded by the Department of Food and Agriculture that results in localized impacts in disadvantaged communities shall not be considered to provide a benefit to disadvantaged communities for the purposes of Section 39713 of the Health and Safety Code.

Compared to the national average,
children in the San Joaquin Valley are
twice as likely to be diagnosed with
asthma before the age of 18.

CONTEXT

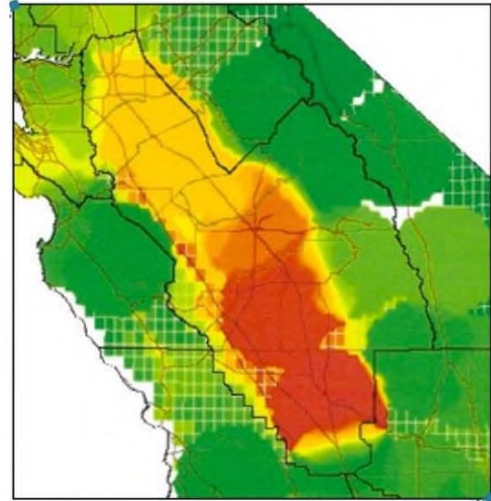


STATE OF THE AIR 2016



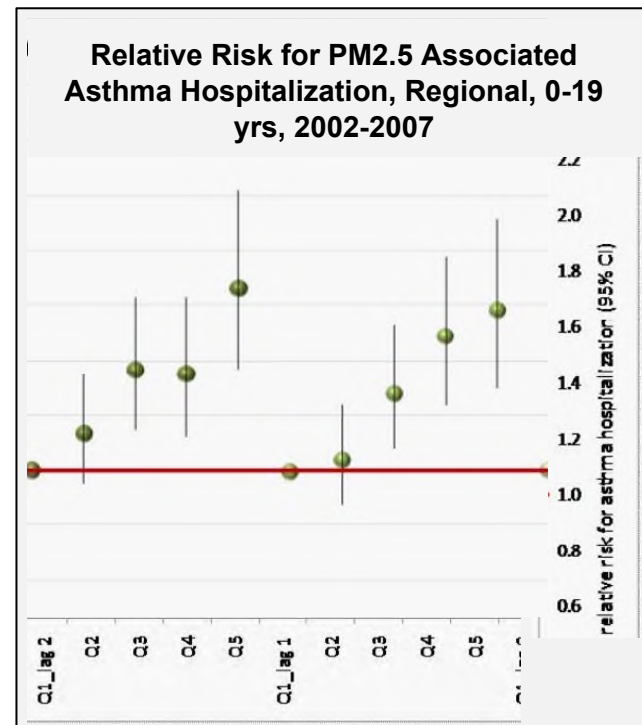
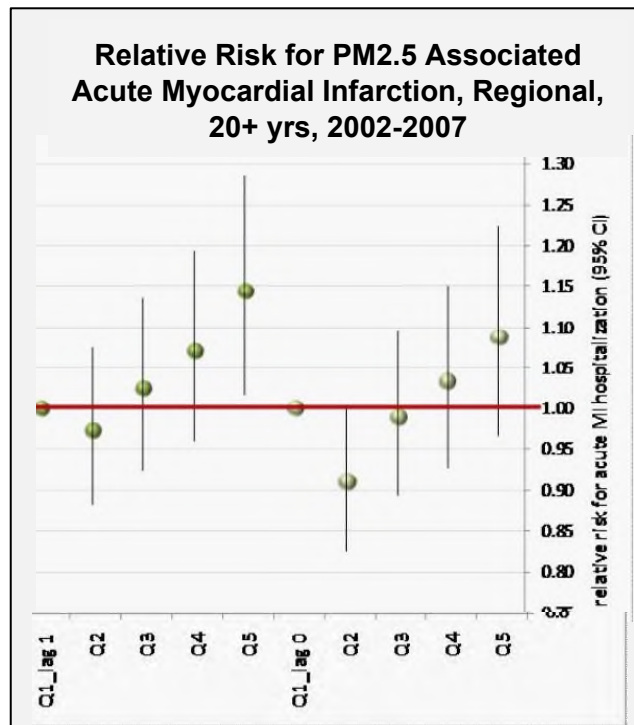
PM2.5 POLLUTION

- #1: [Bakersfield, CA](#)
- #2: [Fresno-Madera, CA](#)
- #2: [Visalia-Porterville-Hanford, CA](#)
- #4: [Modesto-Merced, CA](#)
- #5: [Fairbanks, AK](#)



The Impacts of Short-term Changes in Air Quality on Emergency Room and Hospital Use in California's San Joaquin Valley

PM2.5 Quintiles	Regional
Q5	43.4+
Q4	29.1 - 43.3
Q3	20.1 - 29.0
Q2	12.4 - 20.0
Q1	<= 12.3



STATE OF THE AIR 2016



OZONE POLLUTION

- #1: [Los Angeles-Long Beach, CA](#)
- #2: [Bakersfield, CA](#)
- #3: [Fresno-Madera, CA](#)
- #4: [Visalia-Porterville-Hanford, CA](#)
- #5: [Phoenix-Mesa-Scottsdale, AZ](#)



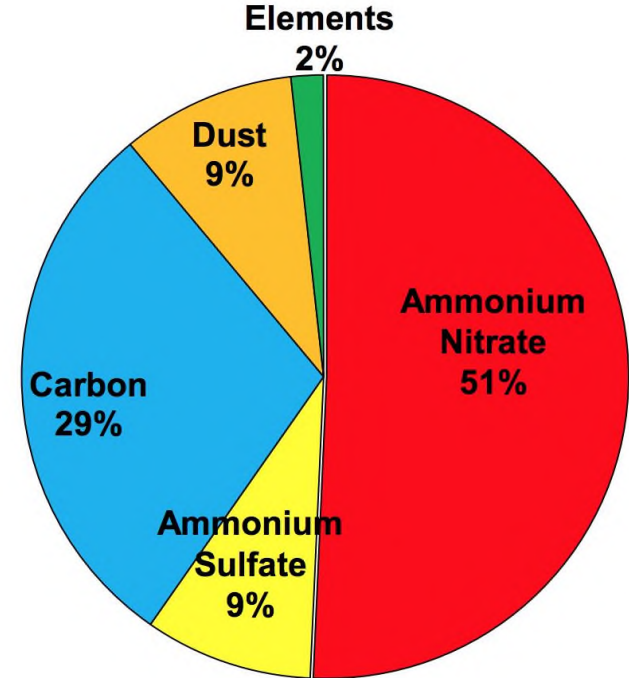
Dairy Emissions



Ammonia - Dairy cattle are the largest source of ammonia emissions in the SJV

- Ammonia is a gaseous contaminant resulting from the breakdown of manure and urine.
- Ammonia has a low odor threshold and is one of the primary factors in the diminishment of quality of life for residents of communities.
- Ammonia is a toxic air contaminant.
- Ammonium Nitrate is the largest component of PM_{2.5} in the SJV.

Bakersfield
Average Winter PM_{2.5} Composition



Volatile Organic Compounds - Dairy Cattle are the largest source of VOCs in the San Joaquin Valley



Passenger Vehicles: 13 tons/day

Livestock Silage: 39 tons/day

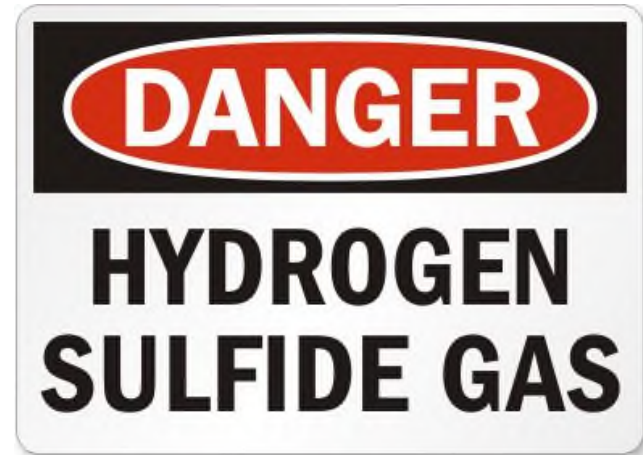
Consumer Products: 21 tons/day

Dairy Cattle: 41 tons/day

Oil and Gas Production: 25 tons/day

Hydrogen Sulfide

- Hydrogen Sulfide is a colorless gas with the characteristic foul odor of rotten eggs.
- Hydrogen sulfide is a broad-spectrum poison, meaning it can poison several different systems in the body, although the nervous system is most affected. Its toxicity is comparable to carbon monoxide.
- Most emissions occur during anaerobic storage of manure. The barn floor or drylot may also be an important emitter with minor emissions following field application.



Climate Pollutants

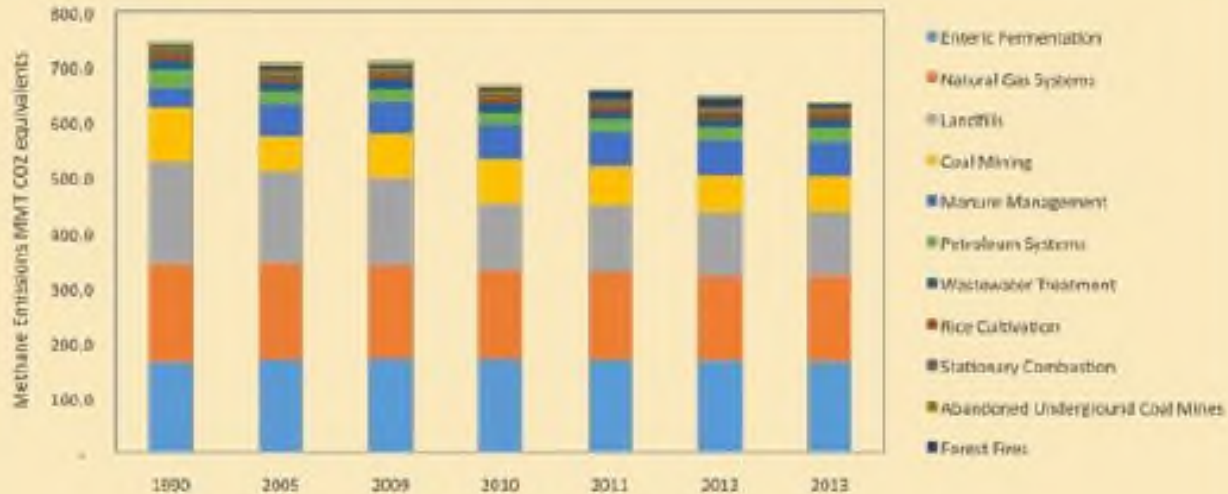


Figure 3. U.S. Methane Emissions by Sector, 1990-2013.

Source: EPA Greenhouse Gas Inventory Report 1990-2013, published 2015

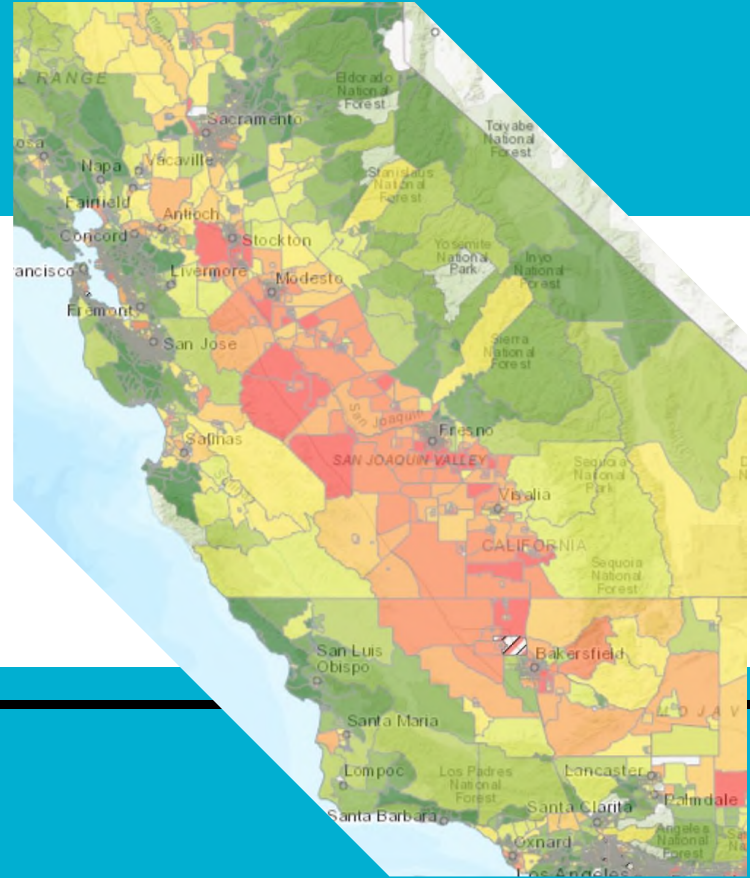
Carbon Dioxide

Methane

Black Carbon

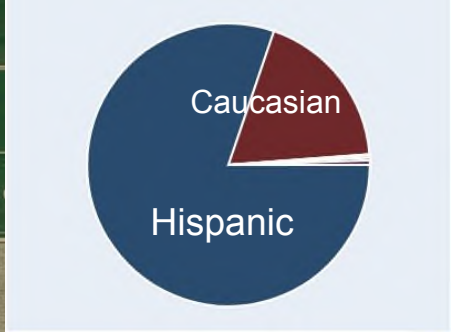
NOx

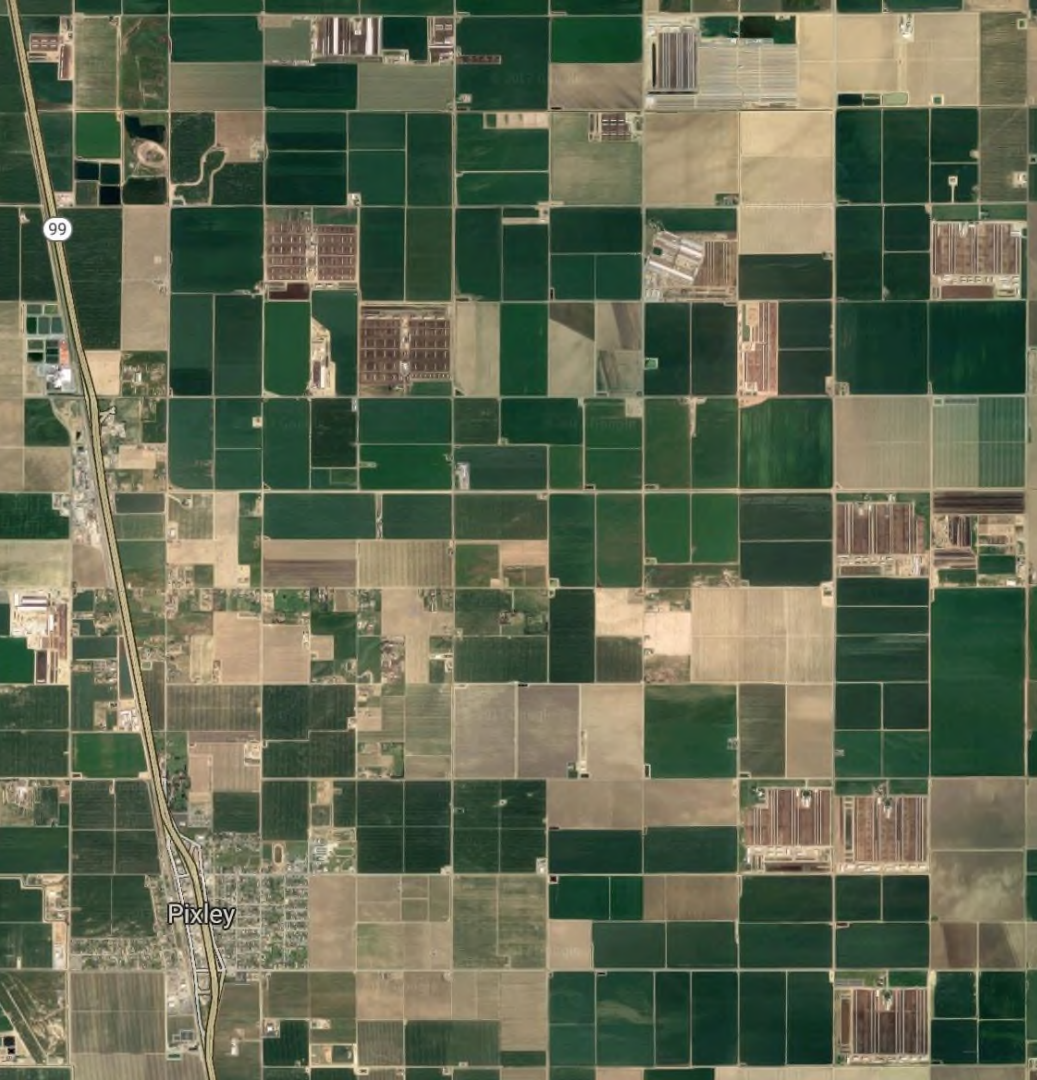
Community Profiles



Tipton Census Tract 6107003200

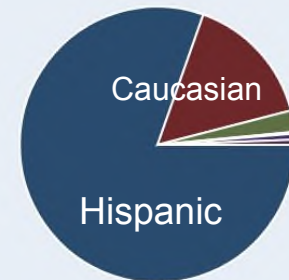
Indicator	Percentile
Ozone	91
PM2.5	98
Drinking Water	91
Education	100
Linguistic Isolation	95
Poverty	98





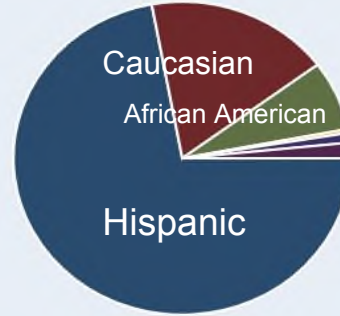
Pixley Census Tract 6107004200

Indicator	Percentile
Ozone	91
PM2.5	99
Drinking Water	94
Education	99
Linguistic Isolation	98
Poverty	99



Tulare Census Tract 6107002901

Indicator	Percentile
Ozone	85
PM2.5	99
Drinking Water	56
Education	82
Linguistic Isolation	82
Poverty	95





Environmental Justice

“Environmental Justice”

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.



“Fair Treatment”

Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies ."



Example: Community Benefits Agreement

A Community Benefits Agreement is a contract signed by community groups and a developer/project manager that requires the developer to provide specific **amenities and/or mitigations** to the local community or neighborhood. In exchange, the community groups agree to publicly support the project, or at least not oppose it.

GROUNDBREAKING GOOD NEIGHBOR AGREEMENT REACHED BETWEEN RECOLOGY AND KERN COUNTY COMMUNITY GROUPS

***Local Community Groups Reach Historic Agreement with Recology to Modernize Operations
and Abatement Programs, and to Partner on Local Community Projects***

Lamont, CA – Yesterday community groups in Arvin and Lamont reached an agreement with Recology over the company's new operation of Recology Blossom Valley Organics – South, a large composting facility outside of Lamont. The agreement will bring significant economic and environmental benefits to a region that has been over-burdened by pollution for decades. This agreement marks nearly a decade of work by local residents to curb pollution and odors from the previous owner's operation of the facility, and will provide some immediate relief to residents living near the mega-composting facility. The agreement will ensure the operation is safe, protects public health, and also makes significant financial investments in the community.

Dairy Digesters



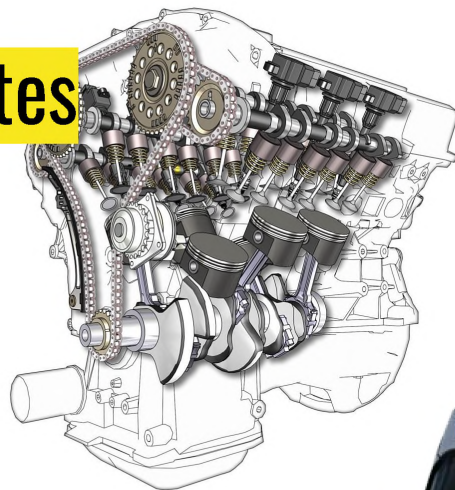
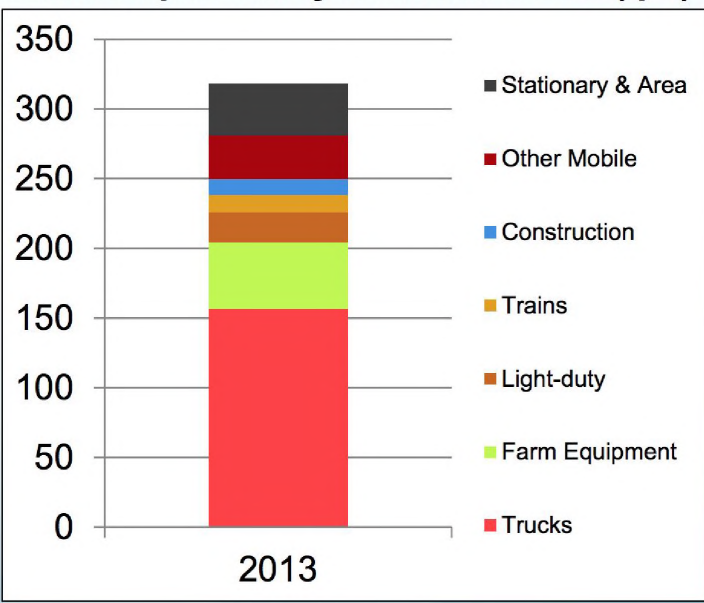
Benefits

A black and white cow is the central focus, standing in a dirt enclosure. In the background, another cow is visible behind a metal fence. The scene is brightly lit, suggesting a sunny day. A yellow box with the word 'Benefits' is in the top left corner. A list of two bullet points is overlaid on the cow's body.

- **Digesters can reduce methane, but could also reduce SO_x, H₂S, Ammonia, VOCs and water quality impacts.**
- **Using biomethane as a transportation fuel could displace diesel fuel use, reducing diesel particulates and NO_x in the Valley.**

NOx & Diesel Particulates

San Joaquin Valley NOx Emissions (tpd)





Contents lists available at ScienceDirect

Agriculture, Ecosystems and Environment

journal homepage: www.elsevier.com/locate/agee

Greenhouse gas and ammonia emissions from digested and separated dairy manure during storage and after land application

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FINDING: Anaerobic Digestion resulted in a **gas emission tradeoff** as it increased ammonia emissions by 81% during storage. This could be mitigated by subsequent solid-liquid separation, manure storage covers, or other beneficial management practices.

EJ Position On Dairy Digester Projects

- No new on-farm emissions (climate, toxic, criteria)
 - Communities are already over burdened
 - Beneficial practices to mitigate ammonia increases
 - All new emissions mitigated at other on-farm sources
 - Electrification, Natural Gas
 - Construction
- Appropriate land-use planning
 - Buffer zones
 - Transportation (weight and load limitations)
 - Safety (incomplete streets passing housing and schools)
- Community Engagement
 - EPA standard
 - Community Air Monitoring
 - Community Benefits Agreement

The End (Thank You)

