



# Permitting Digesters and Co-digesters in California

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# Topics

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- To successfully develop digesters, important to understand permitting requirements before starting
- Background data
- Regulatory processes
- Improving the permitting process
- What is still needed



# Background Dairy Data

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- 1700 dairies in California
- 1200 in the San Joaquin Valley, south of Sacramento
- Average valley herd size 1,000 cows
- 50 farms between 3,500 and 10,000 cows
- Freestall barns and open corrals
- Most flush but some scrape or vacuum



# Water Regulatory Approach

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- Protect beneficial uses, Fishable, Swimable, Drinkable
- Impacts described in terms of stream miles or lake area with impaired uses
- Implications for public health



## Regulatory Approach is Different for Air

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- Impacts of air quality in terms of human morbidity and mortality
- Air pollution districts are “de facto public health agencies”
- A different dynamic - adds a sense of urgency to air quality issues



# Greenhouse Gases

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- Hard to compete with air and water
- EPA finds public health implications
- Water – once removed from public
- Air – immediate link to public
- GHG's – several levels removed
- Cap and Trade developing
- C market not rewarding or stable



## For a Successful Program ...

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- Technology - it exists, evolving
- Entrepreneurial interest – also exists
- Plentiful resources and co-digestion substrates – they exist
- Production sites – they exist



# What We are Missing

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- Receptive regulatory system
- Additional systems to move bioenergy from the farm to the point of use
- Main factor is the price of biogas
- If the price is high enough all remaining problems can be resolved



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