Landfill Emission Estimates: PIER supported research

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California Energy Commission

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PIER Program

- Funded by the electricity and natural gas rate-payers
- Funding climate change research since 2001
- Implementing a roadmap of research developed in 2003
- Created the California Climate Change Center
- Produced more than 50 PIER reports on
  - Climate Analysis and Modeling
  - Inventory Methods
  - Mitigation Options
  - Impact and Adaptation Studies
- Organizes Annual Research Conferences on Climate Change
PIER/CEC Landfill Methane Study

- Methane emissions estimates from landfills are highly uncertain

- Goals:
  - Obtain a better understanding of the performance of various cover materials to control methane emissions
  - Create a detailed landfill methane emissions model
  - Incorporate these results into an improved inventory methodology for landfill methane emissions

- A 3-year project, from 2007-2010
Project Description

- Investigate the use of data collected by IWMB and air district as predictive parameters
- Collect 2 years of field data, using flux chambers to obtain emission rates
- Measurements taken at individual landfill cells
- Methane plume mapping with lasers will be in use at one landfill to provide additional field validation (Waste Management)
- Create a scientifically sound and practical “validated” model
  - Account for variation across landfills and climates
  - Account for oxidation in cover soils. This will be a key component of the model
Researchers / Locations

- **PI: Jean Bogner**
  - Coordinating Lead Author (IPCC AR4 – Chapter on Waste Management)
  - President, Landfills + Inc
  - Prof. University of Illinois

- **Modeler: Kurt Spokas, USDA**

- **3 landfills for field validation**
  1. Scholl Canyon (LACSD)
  2. Marina (MRWMD)
  3. Lancaster (Waste Management)
Technical Advisory Committee

- Brian Ellis, CEC
- Scott Walker and Judy Friedman, IWMB
- Larry Hunsaker and Byard Mosher, ARB
- Mike McCormick, California Climate Action Registry
- Ray Huitric/Frank Caponi, LACSD
- Amy Banister, Waste Management
- William Merry, MRWMD
- Pat Sullivan, SCS Engineers
- Scott Smithline, Californians Against Waste
- Matthew Cotton, Integrated Waste Management Consulting, LLC
Thank You!

For more information about PIER’s work on climate change, please go to http://www.climatechange.ca.gov/research/index.html

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