



# Biogas Activities in the United States

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# Country Update: United States

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## ■ Municipal Solid Waste

### — In the United States

- USEPA's Landfill Methane Outreach Program continues to promote the collection, control, and beneficial use of landfill biogas (since 1994)
  - Now over 1,100 partners, including industry, communities, and states
  - 634 landfill biogas energy projects nationwide (as of June 2017)
- The U.S. is beginning to shift focus towards organics diversion
  - USEPA announced a 50% food waste reduction goal by 2030
  - 21 states have landfill bans on yard waste
  - 5 states also ban food waste disposal in landfills
  - ~200 municipalities have food waste collection programs in place

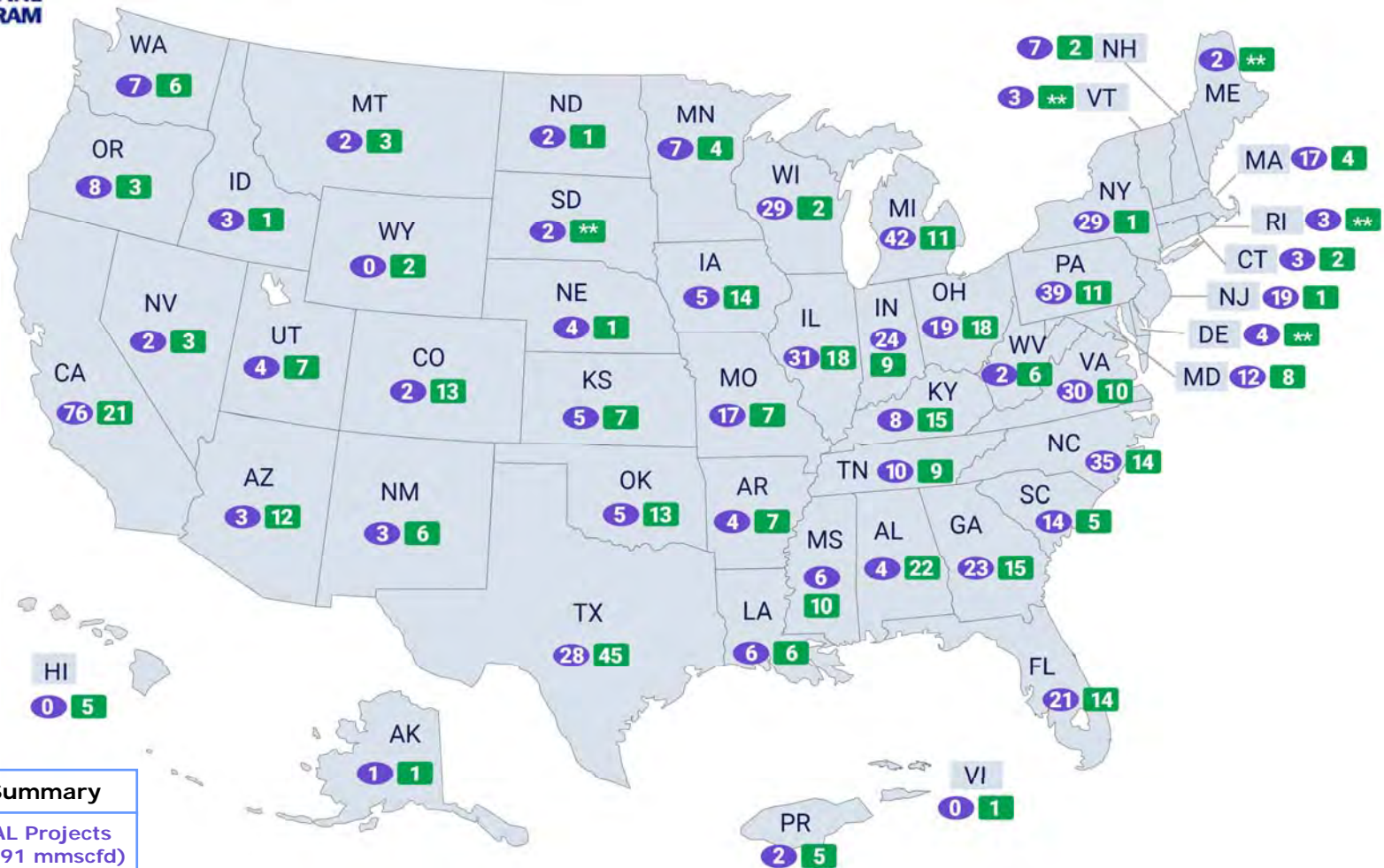
### — Internationally

- Developing a methodology with China's National Center for Climate Change Strategy and International Cooperation (NCSC)
- Working with Chinese officials to identify a pilot city in which to implement a low carbon city concept program
  - Focus on methane
  - Linking waste and wastewater treatment





# LFG Energy Projects and Candidate Landfills



**Nationwide Summary**  
 634 OPERATIONAL Projects  
 (2,143 MW and 291 mmscfd)  
 ~400 CANDIDATE Landfills  
 (780 MW or 434 mmscfd,  
 38 MMTCO<sub>2</sub>e/yr Potential)

OPERATIONAL PROJECTS  
 CANDIDATE LANDFILLS\*

\* Landfill is accepting waste or has been closed 5 years or less, has at least 1 mm tons of waste, and does not have an operational, under-construction, or planned project; can also be designated based on actual interest by the site.

\*\* LMOP does not have any information on candidate landfills in this state.

These data are from LMOP's database as of June 2017.

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- **Municipal Wastewater**
  - Outreach / Action Planning
    - Help to develop tools and resources such as: biogas modeling tools, case studies, training activities, and pre-feasibility studies.
    - Example: BioWATT
  - Technical Assistance
    - Continue support of international GMI wastewater projects focused on technical assistance and training to overcome technical, institutional, and financial barriers to project development.
    - Current focus: China and Mexico
  - Collaboration
    - Identify and seek ways to better collaborate with Partner Countries; the private sector; and multilateral organizations.



# Wastewater Biogas Systems in the U.S.

## Operational Biogas Systems in the U.S. - Wastewater Systems Only



# Country Update: United States

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## ■ Agriculture

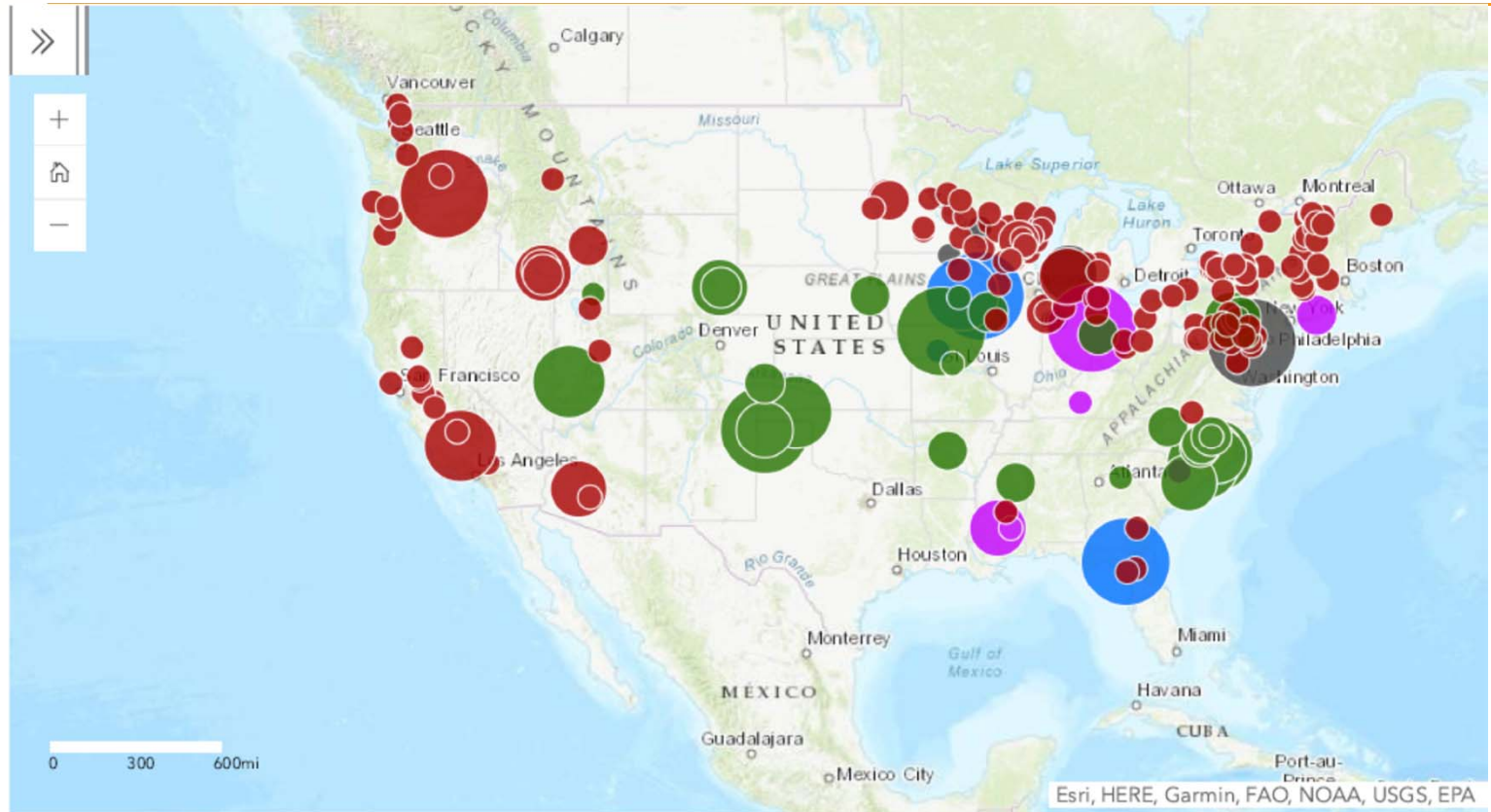
### — AD trends in the United States:

- Co-digestion of food waste and other organic waste streams with livestock manure and bio-solids (sludge)
- Eco-markets aspects of AD systems
- Commercialization of small-scale nutrient recovery
- Third-party project investment and development
- Digester biogas to vehicle fuel

### — GMI International Ag Efforts:

- Interface w/CCAC Ag Initiative relative to Ag High Level Assembly
- Cooperative Agreement with Global Alliance for Clean Cookstoves on household and small-scale AD biogas
- Resource assessment updates (six countries)
- Sponsored UK/AD Forum-World Biogas Expo (July 2017, Birmingham)
- Community scale AD projects in Indonesia
- Regional level Resource Assessment in China

# Agricultural Anaerobic Digester Projects in the U.S.



● Dairy ● Hog ● Poultry ● Beef ● Mixed | [View larger map](#)