State of the U.S. Biogas Industry
Patrick Serfass, Executive Director
American Biogas Council: The Voice of the US Biogas Industry

- The **only** U.S. organization representing the biogas and anaerobic digestion industry
- **134 Organizations** from the U.S., Germany, Italy, Canada, Sweden, Belgium and the UK
- **All** Industry Sectors Represented:
  - Landowners
  - Fuel refiners
  - Manufacturers
  - Project developers
  - Biogas users
  - Plant owners
  - Financiers
  - EPC firms
  - Wastewater
  - Utilities

www.americanbiogascouncil.org
Dedicated to maximizing the production and use of biogas from organic waste

Some of our members:

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Input:
Any organic waste

Farm

Urban

Wastewater

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2,200+ biogas-producing sites Currently Operational

- 171 Digesters on Farms (100 MW)
- 1,500 Digesters at Wastewater Treatment Plants (only 250 use the biogas they produce)
- 563 landfill-based energy projects (26 pipeline, 537 electricity/boiler)

11,000+ sites Available for Development

- Farms: 8,200 (only counting dairy and swine)—1700 MW
- Wastewater Treatment Plants (WWTPs): 3,250—750 MW
  - 2,000 WWTPs > 1 MGD don’t have a digester
  - 1,250 WWTPs producing, but not using biogas
- Landfills/MSW?

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Clover Hill Dairy, Wisconsin
1,250 cows
300kW power
Huckabay Ridge, Texas
+10,000 cows + fats, oils and greases from restaurants
+2.7 million scf/day gas
+650,000 MMBtu/year
(the energy equivalent of 4.6+ million gallons of heating oil)
City of Tulare, California
+11.5 MGD wastewater
+500,000 scf/day gas
+generates 1.2 MW, uses 2.7 MW
+saves $1.2M/year in electricity costs
+provides 94.5% reliable power
Working Groups

- Agriculture
- Biofuel (Rolfe Philip, Yield Energy - Chair)
- Biogas to Electricity (Doug Litwiller, Energy Solutions, LLC (chair))
- Biomethane to Grid (natural gas)
- Construction (Bryan Steffen, FBi Buildings, Inc. (Co-Chair))
  - Goal: Create an information database to enhance understanding of capital and operating expenses in order to educate and prepare the customer base
- Digestate (Tom Ferencevic, Yield Energy - Chair)
- Education, Outreach & Training
- Feedstock
- GHG Credit Markets
- Municipalities

Committees

- Legislative and Regulatory Affairs
  - Federal Co-Chairs: Ted Niblock, Homeland Biogas Energy; Amy Kessler, Turning Earth
  - State Co-Chairs: Norma McDonald, Organic Waste Systems; Wayne Davis, Harvest Power
- Education and Outreach
  - Chair: Nora Goldstein, BioCycle
- Membership and Fund-raising

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Policies Currently Helping the Biogas Industry

- **Farm Bill programs** – 2008 Energy Title, especially REAP (Rural Energy for America Program), as well as conservation and other financing programs
  - REAP: 19+ “new” grants announced last week. (See ABC website: www.americanbiogascouncil.org/media_news.asp
- **2007 Energy Bill** – Provides incentives for the use of biogas as a transportation fuel
- **Section 1603 Treasury Grants** – allows owners of property qualifying for a tax credit in Internal Revenue Code Section 45 or 48 to receive a 30% grant from the U.S. Treasury in lieu of the tax credit
- **Federal Renewable Energy Production Tax Credit (PTC)** - per kilowatt-hour tax credit for electricity generated by qualified energy resources including biogas. Under Recovery Act modification a facility which would qualify for the PTC can elect to take the **Investment Tax Credit** instead, but only if it is an electric generation facility
Policy Gaps and Opportunities

• Establish **parity** for biogenic energy in all federal programs
• Establish an **investment tax credit** for biogas facilities that does not require onsite electric generation
• Ensure continued funding for **Farm Bill** energy and conservation programs (i.e., REAP, etc.)
• Extend **Section 1603** deadlines, and underlying tax credits.
• Increase flexibility for states to regulate buyback prices for renewable energy generation, by supporting **PURPA Plus**
• Support Rep. Doggett’s **HR.66 Waste to Energy bill** for biogas facilities using wastewater or municipal waste
• Support the **NAT GAS Act** for natural gas vehicles (upgraded biogas = renewable natural gas)
• Ensure that biogas is fairly treated in any Federal Renewable Energy Standard or **Clean Energy Standard**
• Encourage expansion of **DOE Biomass Program** to include biogas technology
Positive Economic Impacts to the Biogas Industry if the Sec. 1603 12/31/11 Deadline is Extended

- Total Projects: 324*
- Total Power Capacity: 649 MW*
- Total Industry Investment: $3.5 billion
- Average: $5.74 million/MW
- Average: $12.6 million/project

*As reported by individual companies to the American Biogas Council, Fall 2011
Promoting the Advancement of Anaerobic Digestion Technologies

California Snapshot with Comparisons to U.S. Totals

- US Today: 30 biogas to pipeline projects (4 AD, 26 landfill); 40,000 MMBTU/day = 14.2 million MMBTU/yr. = 216 MW
- 2/3 to California = 144 MW
- Even if gas to CA doubles (300MW) or triples (450 MW), just a drop in the RPS bucket
- Yet, CA regulations can have a HUGE impact on growing the biogas industry in CA and the US at large
- Project developers want to build digesters in CA AND build them in other states to sell the renewable gas to CA
- CA pays a premium for renewable gas to support its RPS

<table>
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<tr>
<th>Type (EIA: 2009)</th>
<th>Capacity (megawatts)</th>
<th>Percent of CA Total</th>
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<tbody>
<tr>
<td>Total Net Summer Electricity Capacity (California)</td>
<td>65,948</td>
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<tr>
<td>Total Net Summer Renewable Capacity (California)</td>
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<td>Geothermal</td>
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<td>Solar</td>
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<td>MSW/Landfill Gas</td>
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<tr>
<td>Other Biomass</td>
<td>96</td>
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Thank You – Get Involved!

- **Take Legislative Action**
- **Become a Member** of the American Biogas Council (dues start @ $100-$1,000)
  - How? ABC Website, or call/email me
- **Sign up for the FREE Biogas News**
  - How? ABC Website, or give me your card

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Additional Slides
Potential Methane Production from Agriculture (manure only)
+ 88 billion scf - enough for 894,000 homes or to make 8.8 billion kWh of electricity (NREL)
+ 8,241 farms; 1,667 MW of power; 13.1 million MWh/year of electricity (AgSTAR)
Potential Methane Production from Urban Waste
+ 536 billion scf - enough for 5.5 million homes or to make 54 billion kWh of electricity only counting landfill waste (NREL)
Potential Methane Production from Wastewater
+ 20 billion scf - enough for 200,000 homes or to make 2 billion kWh of electricity (NREL)
LRA. 2010 achievements...

- **Federal/National** – identified sponsor, Rep. Ron Kind to propose biogas ITC bill to be added to House Way & Means clean energy package

- **Iowa** – lobbied for setaside for biogas projects (non-wind) which shifted renewable energy tax credits from large wind to non-wind projects (1.5 cents/kWh and $4.50/MMBTU

- **Indiana** – lobbied to include waste heat recovery and biogas in Voluntary Clean Energy Program, passed in late May

- **Indiana** – worked with Utilities Regulatory Commission to approve Voluntary FIT (NIPSCO) for 30MW – 12 cents/kWh and 2MW Net Metering

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Food Waste Digester