



# A Snapshot of RNG and the Market

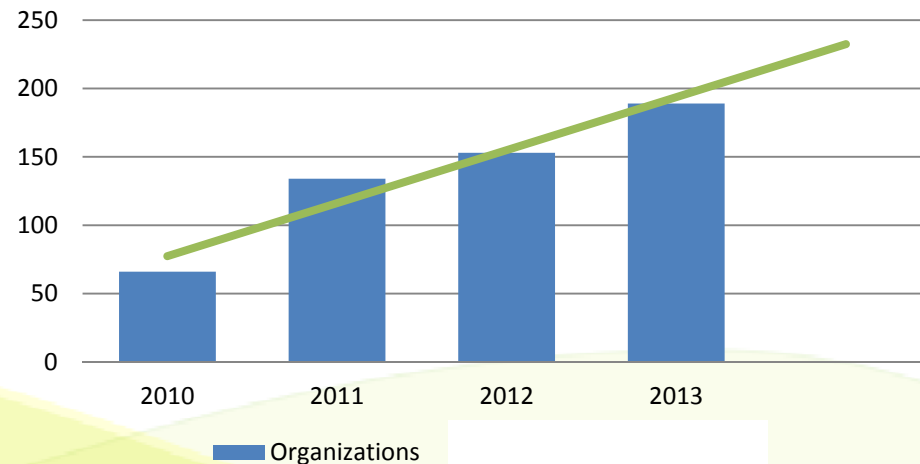
From ABC's RNG Working Group

Last updated May 12, 2014

# American Biogas Council: The Voice of the US Biogas Industry

- The **only** U.S. organization representing the biogas and anaerobic digestion industry
- **Over 200 Organizations** from the U.S., Germany, Italy, Canada, Sweden, Belgium and the UK
- **All Industry Sectors Represented:**
  - project developers/owners
  - anaerobic digestion designers
  - equipment and supply chain companies
  - waste managers
  - waste water companies
  - farms
  - composters
  - utilities
  - consultants and EPCs
  - financial firms

**ABC Membership**



# The US RNG Market Potential

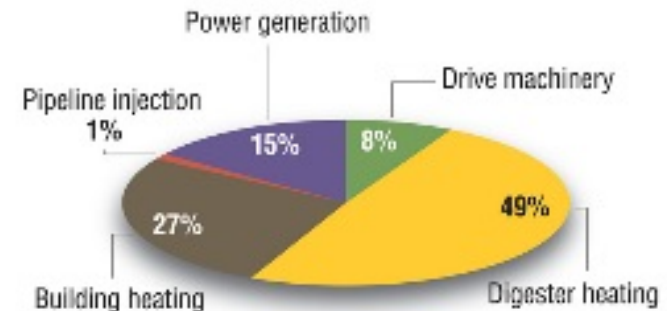
- Major Biogas Sources:

Source	Total	Biogas to CHP	Biogas to RNG	Untapped potential
Landfill Gas	2434 Landfills	555	39	~540 sites
Wastewater Treatment Plants	3200 Large WWTP (>1MGD)	319	21	>2000 WWTP
Animal Waste	6500 industrial size farms	195	7	>6298 Farms
Food Waste	Data not recorded	N/A	N/A	Millions of sites around the country.

# Wastewater Treatment Plants

- The taskforce biogasdata.org comprised by several industry leaders conducted a thorough study of the WWTP scene in the United States.
- Out of the 3200 potential WWTP projects (of over 1 MGD), 2133 currently have a biogas project in place.
- According to the graph below, the use of biogas is thermal in its majority. 319 plants do power generation and only 21 do RNG. Due to RINS and low PPAs, plant administrators are considering retiring the CHP units and moving to RNG.

**Figure 2. Percentages of biogas utilization technologies in use at WWTPs producing biogas**



## Animal Waste

- The EPA's AgStar program has identified around 8,000 industrial farms that are good candidates for biogas generation.
- Currently, only 202 farms produce biogas. Out of those only 7 farms produce RNG. (4%)
- The main challenge with animal waste is scalability and the sourcing of organic waste for codigestion. A current trend shows that projects are being aggregated to create clusters of Animal Waste AD.

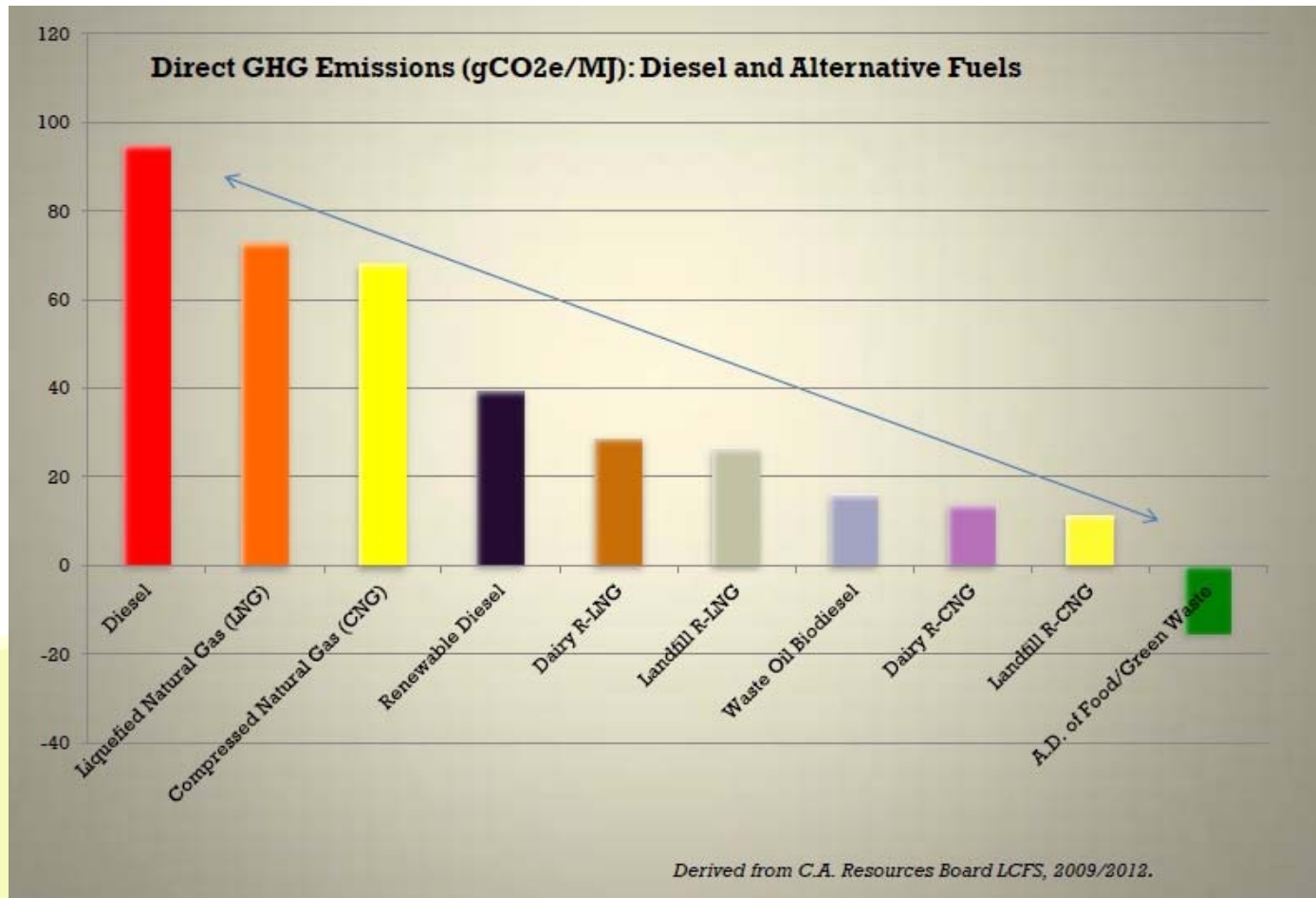
## Industrial Organic Waste

- Hard to collect data because of proprietary information.
- Cargill, Premium Standard Farms, Stonyfield, Abita Brewery, National Beef, Tyson, Bruce Foods and many others have AD systems on site.
- Cogen and thermal seem to be the preferred use for these applications.

## Vehicle Fuel vs. Other Uses

- It generates RIN (Renewable Identification Number) credits! Using RNG for transportation is currently the only way to get RINs from biogas.
- RNG qualifies as an Advanced Biofuel under the EPA Renewable Fuel Standard.
  - 1 Advanced Biofuel RIN equals 1 gallon equivalent of gasoline or 69,500 BTUs.
  - Advanced Biofuel RINs currently trade between \$0.74 and \$1/RIN. This equals a range between \$9 and \$13/mmBTU.

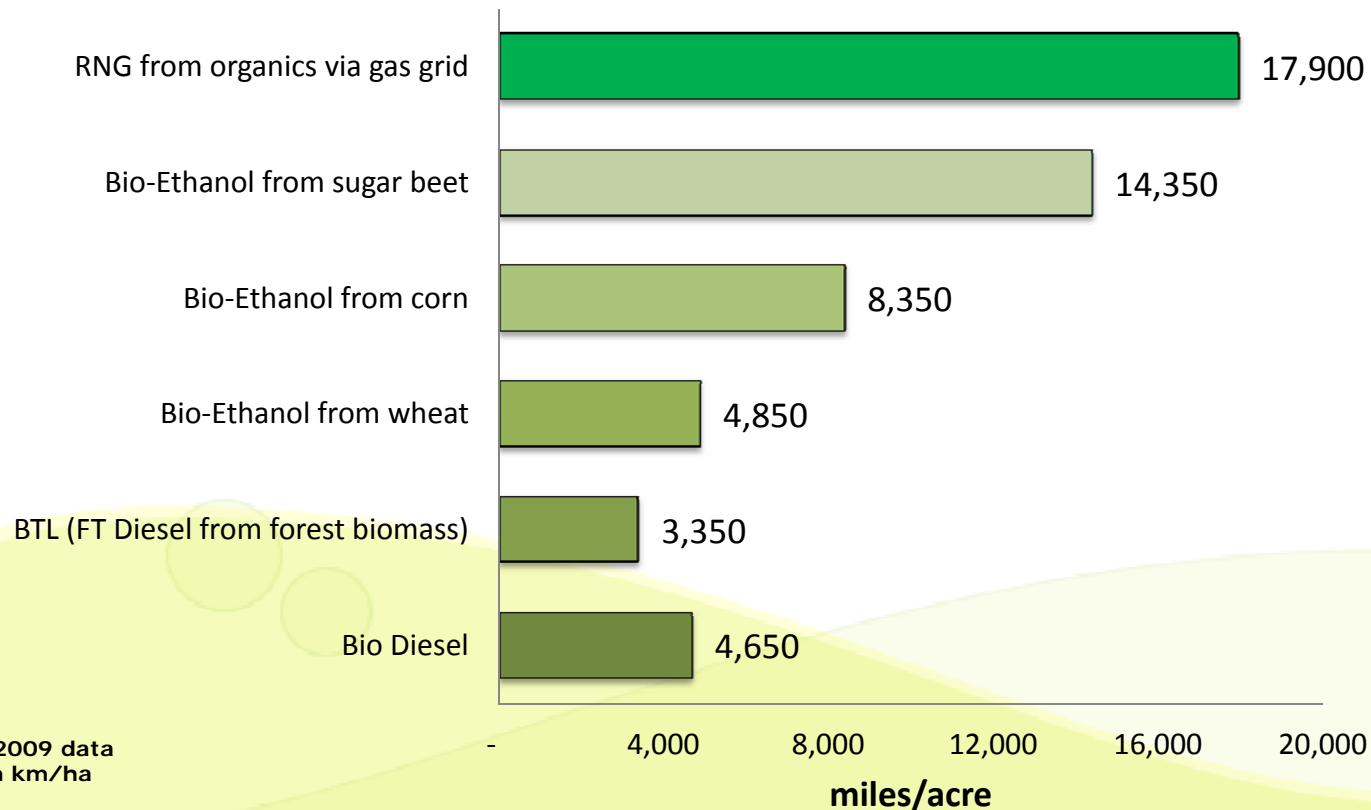
# Greenhouse Gas Emissions of RNG



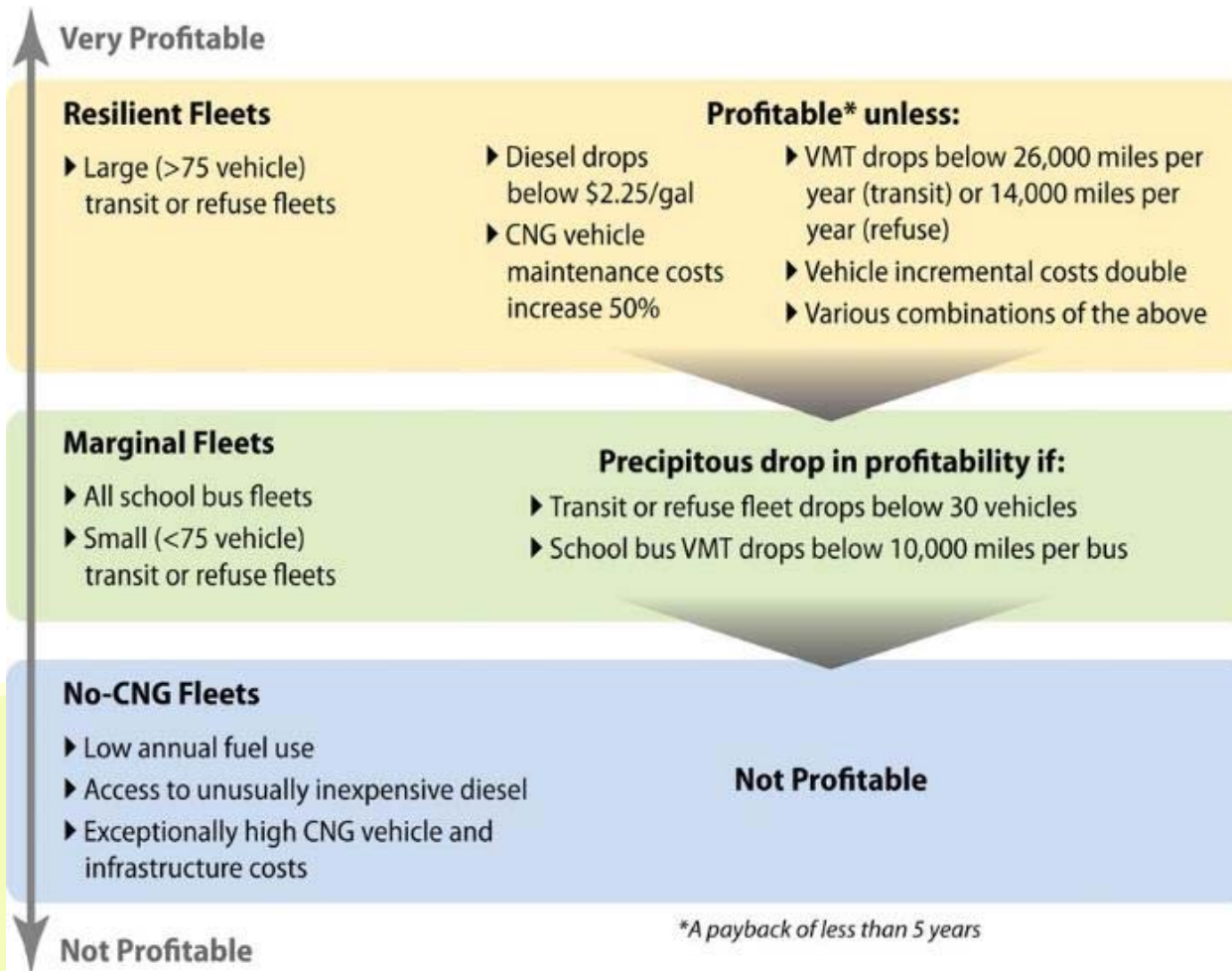


# RNG vs. Other Alternative Fuels

A renewable fuel with superior efficiency: How many miles will a car run with the fuel produced from 4 tons of organics?



# Doing Feasibility



## Next Steps

- **Learn More**
  - More resources at: [www.AmericanBiogasCouncil.org](http://www.AmericanBiogasCouncil.org)
  - Sign up for the **FREE Biogas News**
- **Become a Member**
  - Use link above for an application, or contact us:

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