We count 14,958 new sites ripe for development today: 8,574 dairy, poultry, and swine farms and 3,878 water resource recovery facilities (including ~380 who are making biogas but not using it) could support new biogas systems, plus 2,036 food scrap-only systems and utilizing the gas at 415 landfills who are flaring their gas. If fully realized, according to an assessment conducted with the USDA, EPA and DOE as part of the Federal Biogas Opportunities Roadmap, plus data from ABC, these new biogas systems could produce 103 trillion kilowatt hours of electricity each year and reduce the emissions equivalent of removing 117 million passenger vehicles from the road. These new biogas systems would also catalyze an estimated $45 billion in capital deployment for construction activity, which would result in approximately 374,000 short-term construction jobs to build the new systems and 25,000 permanent jobs to operate them. Indirect impacts along supply chains would be even greater.

Operational U.S. Biogas Systems

The U.S. has over 2,200 sites producing biogas in all 50 states:

250 anaerobic digesters on farms, 1,269 water resource recovery facilities using an anaerobic digester (~860 currently use the biogas they produce), 66 stand-alone systems that digest food waste, and 652 landfill gas projects.

For comparison, Europe has over 10,000 operating digesters and some communities are essentially fossil fuel free because of them.

Potential for U.S. Biogas Systems

The U.S. biogas industry has enormous growth potential.
Some biogas can be used to heat the digester.

**1. Organic Material**
- Animal manure
- Food scraps
- Wastewater
- Biosolids
- Restaurant grease
- Organic byproducts

Microorganisms break down organic material over 2-4 weeks producing biogas and digestate.

**2. The Digester**
- Anaerobic digester system of airtight tanks equipped for mixing and warming organic material.

**3a. Biogas**
- Consists mostly of methane and carbon dioxide, plus water vapor and other trace compounds (e.g., siloxanes).
- Biogas processed to gas pipeline quality is often called biomethane, renewable natural gas, or RNG.

**3b. Digested Material**
- Solid and liquid digestate containing valuable nutrients (nitrogen, phosphorus & potassium) and organic carbon.
- May be returned for livestock, agricultural and gardening uses.

**Step 1**
ORGANIC MATERIAL
Organic materials are the “input” or “feedstock” for a biogas system. Some organic materials will digest more readily than others.

**Step 2**
THE DIGESTER
An anaerobic digester is a system of airtight tanks that can be equipped for mixing and warming organic material.

**Step 3a**
BIOGAS
Biogas consists mostly of methane and carbon dioxide, plus water vapor, and other trace compounds (e.g., siloxanes).

**Step 3b**
DIGESTED MATERIAL (DIGESTATE)
In addition to biogas, digesters produce solid and liquid digestate, containing valuable nutrients (nitrogen, phosphorus & potassium) and organic carbon.

RENEWABLE NATURAL GAS
Biogas processed to gas pipeline quality is often called biomethane, renewable natural gas, or RNG.