**quasar** is an Ohio-based renewable energy company.

- Aggregation of the best anaerobic digestion technology available
- Provide complete full service, turn-key anaerobic digestion solutions for our customers
- Produce energy for use as electricity & fuel from organic sources
- Operate laboratory & engineering facilities on OSU-OARDC campus
- Dedicated to building systems based on US components and US suppliers
- More than 40 projects in our current business pipeline
- Four facilities operating in Ohio and one in Massachusetts

**quasar’s Mission ...** “To produce affordable renewable energy from commercial, municipal and agricultural biomass, while improving the environment.”
Quasar has four facilities operating.

Operational facilities are:
- Columbus, Ohio – 1 MW
- Rutland, Massachusetts – 300 kW
- Wooster, Ohio /OSU-OARDC – 600 kW
- Zanesville, Ohio – 1 MW

Facilities under construction are:
- Cleveland, Ohio – 1 MW
- Haviland, Ohio – 1 MW
- North Ridgeville, Ohio – 1 MW
- Zanesville, Ohio iADs - expansion

Quasar’s operating facilities are exceeding design capacity by approximately 30% . . .
ANAEROBIC Digestion

Anaerobic digestion is a natural process where microorganisms break down organic biomass in the absence of oxygen.

**Inputs**
- Agricultural Biomass (manure, crop residuals, energy crops)
- Food Processing Residuals & FOG (fats, oils and grease)
- Municipal Wastewater (biosolids)
- Ethanol residuals
- Expired, damaged or depackaged organics

**Products**
- Renewable Energy – Natural Gas, Electricity, Motor Vehicle Fuel (CNG/LNG)
- Animal Bedding, Peat Alternative, & Compost
- Concentrated fertilizer (P) separation
- Reduced Greenhouse Gas Emissions, Cleaner Water, Soil & Cleaner Air
CLEVELAND, OH

Under Construction:
Annual Tons: 42,600 wet tons
Generator: 1 MW

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COLUMBUS, OH

Placed in Service: 2010
Annual Tons: 50,000 wet tons
Generator: 1 MW
HAVILAND, OH

Under Construction
Annual Tons: 43,000 wet tons
Generator: 1 MW
RUTLAND, MA:

Placed in Service: 2011
Annual Tons: 15,000 wet tons
Generator: 300 kW
WOOSTER, OH

Placed in Service: 2010
Annual Tons: 20,000 wet tons
Generator: 600 kW
ZANESVILLE, OH

Placed in Service: 2010
Annual Tons: 30,000 wet tons
Generator: 1 MW
ANAEROBIC DIGESTERS

Planned in Ohio

- **Operational Facilities:**
  - Akron, OH
  - Columbus, OH
  - Wooster, OH
  - Zanesville, OH
  - Rutland, MA

- **Coming in 2011:**
  - Celina, OH
  - Cincinnati, OH
  - Cleveland, OH
  - Columbus, OH
  - Dayton, OH
  - Haviland, OH
  - North Ridgeville, OH
  - Norton, OH
  - St. Clairsville, OH
  - Wooster, OH
  - Zanesville iADs, OH

- **Offices:**
  - Headquarters
    - Cleveland, OH
  - Engineering
    - Wooster, OH
  - Laboratory
    - Wooster, OH
COLLABORATING with The Ohio State University

Engineering Offices:

Laboratory:

BioHio Digester:
An aerobic digestion can generate energy that will offset fossil fuel use.

1. Ohio can support thousands of anaerobic digestion renewable energy facilities that can produce: **Natural Gas** - $1.76 Billion or **Electricity** - $1.44 Billion or **CNG** - $3.33 Billion

2. These facilities represent $18.2 Billion in investment that will:
   - **Energy:** Promote Energy Independence
   - **Economy:** Create Green Jobs
   - **Environment:** Reduce Greenhouse Gas Emissions

3. By training the next generation of technicians now, we can be prepared to answer the growth of this industry with a ready and able workforce

4. This isn’t about building biogas plants it’s about building a new energy economy for Ohio and improving our environment.

**Imagine 17% of Ohio’s fuel being supplied from organic sources in Ohio!**

1. Based on a study supported by The Ohio State University
quasar is working with more than 60 Ohio contractors, suppliers, manufacturers and fabricators to source components and labor for our facilities.

- Prior to 2007, components for AD systems were primarily sourced in Europe.
- Over the past 5 years, quasar has worked with U.S. and specifically Ohio vendors to source major components.
- **NOW**, more than 98% of our components are sourced in the U.S. and more than 76% of those are from Ohio based companies!
COMPONENTS

Designed by quasar

Flare

Membrane

Mixers & Stands

Live Bottom Hopper

Heat Exchanger
Growing a bioenergy industry means growing the demand for educated, experienced technicians.

**Direct Jobs:**
- Civil Engineering
- Mechanical Engineering
- Electrical Engineering
- Construction Management
- Plant Operators
- Biological Analysis
- Regulatory Compliance
- Agronomy
- Wastewater Specialists
- Accounting
- Project Finance
- Biogas Specialists

**Indirect Jobs:**
- Agriculture
- Engineering
- Soil Analysis
- Environmental Analysis
- Biomass Transportation
- Component Design
- Component Fabrication
- Component Supply
- System Construction
- Legal – Advanced Energy
- Waste Management
- Manufacture of CNG Vehicles
- Design and construction of CNG/LNG fueling systems
Quasar is integrating CNG fueling stations into our anaerobic digestion facilities to service public and private fleets, and small vehicles.

- **CNG costs less** than gasoline or diesel.
- **Ohio** can lead the way in U.S. conversion of vehicles to CNG fuel. The time is NOW.
qng STATION At the Columbus Digester