



RELIABLE BIOGAS SOLUTIONS

WORLDWIDE

BIOGAS



01

COMPANY PROFILE

Biogas engineering in harmony
with people and nature.





Wens Foodstuff Group Co., Ltd.

Shenzhen-listed agri-food enterprise



1983

Founded



100+ bn RMB

Revenue in 2024



50,000+

Employees



110+ bn RMB

Market Cap



387

Subsidiaries

Wens operates an integrated agri-food value chain covering breeding, feed production, food processing, cold-chain logistics and environmental solutions.



Parent Company Overview — Wens Foodstuff Group

2025 Business Scale



Listed Hogs

40.4769
million head

5.60% of China's
total hog marketings;
No. 2 among
listed peers.



Listed Broilers

1.303
billion birds

Approx. 8.6% of China's
total broiler marketings;
No. 1 among
listed peers.



Listed Ducks

48.1375
million birds



Egg Sales

65,700
tons



Listed Pigeons

1.7668
million birds



National Key Leading Enterprise
in Agricultural Industrialization



Top 100 Enterprise in
China's Animal Husbandry Industry



Top 500
Chinese Enterprises



Yikang Ecological Overview

Founded in 2014, Yikang Ecological Environmental Technology Group Co., Ltd. is a comprehensive solutions provider in the field of rural environmental protection under Wens Foodstuff Group.

We focus on agricultural pollution control, biomass resource recycling, and rural ecological governance, providing customers with integrated solutions for the treatment of solid, liquid, and gas wastes and resource utilization.

Our services cover livestock wastewater, manure, straw and other agricultural/forestry waste.

As a leader in the rural environmental protection industry, we deliver integrated, full-chain, and multi-dimensional service capabilities.



Business Scope

- Environmental engineering design and construction
- Environmental equipment R&D and manufacturing
- Environmental project operation
- Biomass energy project investment and construction
- Rural environmental governance
- Organic fertilizer production and sales



Qualifications

- Class I Qualification for Environmental Engineering Design
- Class I Qualification for Environmental Engineering Construction
- Class I Qualification for Environmental Engineering General Contracting
- Class II Qualification for Environmental Engineering (Water Pollution Control) Design
- Class II Qualification for Municipal Public Works Construction General Contracting
- Labor Service Qualification

Associated Enterprises

Integrated industrial network across China

Coordinated coverage across headquarters, manufacturing, ecological service and fertilizer businesses.



GLOBAL MARKET



**Integrated equipment
and biogas solutions
for global clients.**



**Project footprint across
Southeast Asia, Australia,
the Middle East, Africa,
Europe, North America and
South America.**



02

BIOGAS SOLUTION

Sustainable energy. Clean environment.
Stronger tomorrow.



Feedstocks Handled by YHR

Broad substrate capability across
agriculture, livestock and organic waste streams.



Plant straw: corn, paddy, wheat



Napier grass, bagasse, POME



Animal slurry and manure



Kitchen and food waste



Agricultural organic waste and sludge



Dead or diseased animal bodies





STRAW SILAGE | DRY STRAW | ANIMAL MANURE



Tongliao **SPIC** Bio-CNG Project

Corn straw and animal manure are anaerobically digested, with biogas upgraded to bio-CNG and fertilizer products.

📍 Location: Tongliao, Inner Mongolia

60,000 m³/d
Biogas





DRY STRAW

China Resources Wuchang Project



8 MW

Total Power
Generation Capacity



12
CSTR digesters



Corn straw +
paddy straw



Dry straw feedstock,
TS > 80%



260 t/d
feedstock



80,000 m³/d
biogas



160,000 kWh/d
power generation



Location:
Wuchang,
Heilongjiang
Province



Core technology for
biogas production with **Dry straw**

China Resources Yilan 4MW Project

The project consists of 8 CSTR digesters with a volume of 5,000m³ of each. It has a daily biogas production of 40,000m³/d by feeding 130 tons of dry straw per day.

Location: Yilan, Heilongjiang Province

China Resources BinXian 4MW Project

5 CSTR digesters with a volume of 6,000m³ of each, daily biogas production capacity is 40,000m³/d.

Location: Binxian, Heilongjiang Province





CORN STRAW SILAGE · DRY WHEAT STRAW · ANIMAL MANURE



Converting agricultural wastes into clean energy and organic fertilizer through advanced anaerobic digestion and purification.

Supporting green energy supply and rural revitalization.



18,000 m³/d
Biogas

- 140,000 t/y manure + 20,000 t/y straw
- 5.3 million m³ biogas annually
- 20,000 t/y organic fertilizer
- Grid injection and circular agriculture model

📍 Lixin County, Anhui



ANIMAL MANURE

China Three Gorges Corporation

Leiyang CHP Project

- 370,000 t/y animal manure treatment capacity
- 26.64 million kWh green electricity annually
- Location: Leiyang, Hunan Province
- Large-scale manure-to-energy utilization



Integrated anaerobic digestion and CHP
for renewable power generation.



中国长江三峡集团公司
China Three Gorges Corporation

40,000 m³/d
Biogas





ANIMAL MANURE | RICE STRAW

Shanghai Bio-CNG Project



13,500 m³/d
Biogas



Feedstocks

Cattle manure, rice straw,
and vegetable residues



Project Support

Supports feedstock supply for
Shanghai's local 100,000-ton
green methanol project



Circular Resource Utilization

Converts organic waste into clean energy
and valuable fertilizer, advancing circularity



Process Highlights

- Hydrolysis pretreatment improves feedstock degradation
- Semi-dry anaerobic digestion ensures system stability
- Multi-feedstock co-digestion enhances biogas yield and operational flexibility



Location: Shanghai, China





DUCK & CHICKEN



Biaofa Group Biogas Plant

Duck and chicken manure-based biogas project with 6 vertical digesters.
Biogas is used mainly for bio-CNG production, with 1.0 MW CHP capacity.



Feedstock: duck & chicken manure



Configuration: 6 vertical digesters



50,000 m³/d
Biogas



350,000
t/y poultry
manure



10.5
million m³
green CBG





CORN STRAW SILAGE | ANIMAL MANURE



Shizong Bio-CNG Project



1,000,000 t/y
manure



73,000 t/y
straw



80,000 t/y
organic fertilizer



5 million m³/y
Bio-CNG



6 × 5,000 m³ GFS CSTR digesters



Shizong, Yunnan Province



CORN STRAW SILAGE | DRY WHEAT STRAW | ANIMAL MANURE



33,000
m³/d Biogas

Tianlong Bio-CNG Project

-  3,600 m³ × 9 CSTR
-  Semi-aerobic hydrolysis pretreatment
-  Codigestion with cow manure
-  Location: Sanhe, Hebei Province



ANIMAL MANURE | CORN STRAW SILAGE



Meikeduo

Zunhua Biogas Project

45,000 m³/d
biogas



268 t/d
chicken manure



165 t/d
straw



150 t/d
human waste



Location:
Zunhua, Hebei Province



ANIMAL MANURE | RICE STRAW



CPCEP

CPCEP Bio-CNG Project

40,000 m³/d
biogas



Two-phase development



Semi-aerobic hydrolysis pretreatment



Rice straw utilization



Location: Huaian, Jiangsu Province

Biogas Plants for Large-Scale Dairy Farms



Liken Dairy Farm Biogas Plant



🔥 Daily biogas production: 50,000 m³/d

⚡ Biogas usage: CHP

📍 Location: Pingluo, Ningxia Province



Shouguang Farm Biogas Plant



🔥 Daily biogas production: 20,000 m³/d

⚡ Biogas usage: CHP

📍 Location: Shouguang, Shandong Province



Saikexing Benfang Biogas Plant



🔥 Daily biogas production: 20,000 m³/d

⚡ Biogas usage: CHP

📍 Location: Huanghua, Hebei Province

COUNTY-WIDE MANURE CENTRALIZED TREATMENT

PROJECT FEATURES



The livestock farming is relatively decentralized within a county region, posing challenges to manure treatment and management for the local government.

The centralized treatment center provides sustainable services for regional livestock manure treatment.



The project treats mainly pig manure delivered from the pig farm around the plant. 2MW CHP + 10,000 tons annually organic fertilizer.

Location: Xinyu, Jiangxi Province



Xinyu centralized manure treatment plant



The project treats mixed animal manure from the farms nearby. 2MW CHP, 10,000 tons annually organic fertilizer.

Location: Dingnan, Jiangxi Province



Dingnan centralized manure treatment plant

BIOGAS PLANTS OF LARGE SCALE DAIRY FARMS



Weixian Dairy Farm Biogas Plant



Daily biogas production **24,000**m³/d

Biogas usage: CHP

Location: Weixian, Hebei Province



Daming Dairy Farm Biogas Plant



Daily biogas production **24,000**m³/d

Biogas usage: CHP

Location: Handan, Hebei Province



Jiuyuan Bio-CNG Project



Daily biogas production **30,000**m³/d

Biogas usage: Upgrade to Bio-CNG

Location: Taizhou, Jiangsu Province

Manure Treatment for Large-Scale Pig Farms

Pig farms with liquid manure systems typically have low TS (<2%).

Recommended technologies: Anaerobic Biological Doubling Process (ABDP) and Ring-in-Ring (RIR).



ABDP technology

Capacity: 2 MW CHP

Location: Guangshui, Hubei Province



COFCO Wuhan Guangshui pig manure project



ABDP technology

Capacity: 1 MW

Location: Ankang, Liaoning Province



New Hope Group Liaoning pig farm project



RIR technology

Capacity: 0.8 MW

Location: Chifeng, Inner Mongolia



COFCO Chifeng pig farm project

DRY & WET FERMENTATION SYSTEM

Animal manure is treated by wet CSTR system and straw substrate is treated by dry fermentation system.



Garage-type dry fermentation, daily handle animal manure 200 tons, paddy straw 85 tons, biogas production 8,000m³/d, used for CHP, annual fertilizer production 30,000 tons/year.



Shanghai Electric Group biogas project
Location: Chongming Island, Shanghai



Garage-type dry fermentation, daily handle animal manure 200 tons, corn straw 25 tons, biogas production 16,000m³/d, used for CHP, annual fertilizer production 20,000 tons/year.



CHD Group biogas project
Location: Fengning, Hebei Province

Agricultural Organic Waste



01 Guyuan Potato Starch Waste Treatment Project



Feedstock

agricultural process
waste and potato residue



Biogas production

20,000 m³/d



Biogas use

CHP and process
self-use



Location

Guyuan, Hebei
Province



02

Luliang Vegetable Waste Treatment Project



Feedstock: 2,500 t/d vegetable waste leaves



Biogas production: 20,000 m³/d



Biogas use: upgraded to Bio-CNG



Location: Luliang, Yunnan Province

OVERSEAS PROJECT REFERENCES (I)



Brazil Sugarcane Bagasse and Manure Biogas Project



- Construction Time: 2025
- Tank Volume: 7,797 m³
- Tank Dimensions: $\Phi 34.38 \times 8.4$ m (H) $\times 4$
- Tank Type: Glass-Fused-to-Steel (GFS) assembled tanks



Dairy Farm Manure Treatment Project



- Construction Time: 2025
- Tank Volume: 5,842 m³; Gas Holder Capacity: 3,000 m³
- Tank Dimensions: $\Phi 9.1 \times 20.4$ m (H) $\times 2$
- Ground Gas Holder Dimensions: $\Phi 16.41 \times 15.21$ m (H) $\times 1$
- Tank Type: Glass-Fused-to-Steel (GFS) assembled tanks

OVERSEAS PROJECT REFERENCES (II)



Ecogas Biogas Plant Project



Construction Time: 2022



Tank Capacity: $1,780 \text{ m}^3 \times 2$; $4,010 \text{ m}^3 \times 3$



Tank Dimensions: $\Phi 15.47 \times 9.5 \text{ m (H)} \times 2$;
 $\Phi 23.2 \times 9.5 \text{ m (H)} \times 3$



Yili Group Food Processing Water Storage Project



Construction Time: 2020



Tank Capacity: $1,070 \text{ m}^3 \times 2$; $140 \text{ m}^3 \times 1$; $50 \text{ m}^3 \times 2$



Tank Dimensions: $\Phi 13.75 \times 7.2 \text{ m (H)} \times 2$; $\Phi 6.11 \times 4.8 \text{ m (H)} \times 1$;
 $\Phi 3.82 \times 4.8 \text{ m (H)} \times 2$

OVERSEAS PROJECT REFERENCES (III)



Municipal Wastewater Treatment Project



- Construction Time: March 2025
- Tank Volume: 3,500 m³
- Tank Dimensions: $\Phi 28.27 \times 5.4 \text{ m (H)} \times 2$
- Tank Type: Glass-Fused-to-Steel (GFS) assembled tanks



Livestock Wastewater Treatment Project



- Construction Time: 2024
- Tank Volume: 477 m³
- Membrane Roof Volume: 276 m³
- Membrane Roof Tank Dimensions: $\Phi 12.99 \times 3.6 \text{ m (H)} \times 2$
- Tank Type: Glass-Fused-to-Steel (GFS) assembled tanks

OVERSEAS PROJECT REFERENCES (IV)



Municipal Wastewater Treatment Project



Construction Time: 2022



Tank Capacity: MBBR $220 \text{ m}^3 \times 2$; sludge storage tank $50 \text{ m}^3 \times 1$



Tank Dimensions: $\Phi 7.64 \times 4.8 \text{ m (H)} \times 2$; $\Phi 5.35 \times 3.6 \text{ m (H)} \times 1$



Tank Type: Glass-Fused-to-Steel (GFS) assembled tanks



Municipal Wastewater Treatment Project



Construction Year: 2022



Tank Capacity: Aeration tank 530 m^3



Tank Dimensions: $\Phi 12.99 \times 4.2 \text{ m (H)} \times 1$



Tank Type: Glass-Fused-to-Steel (GFS) assembled tank

CORE TECHNOLOGY

Proven process routes for efficient biogas production

ANAEROBIC BIOLOGICAL DOUBLING PROCESS



| ABDP TECHNOLOGY

Suitable for low-TS feedstocks.

- Separates HRT, MRT and SRT
- Enables higher organic loading
- Improves reactor efficiency for dilute substrates

HIGH-LOADING ANAEROBIC PROCESS



| HLAP TECHNOLOGY

For agricultural and municipal organic waste.

- Handles manure, straw and kitchen waste
- Typical digester TS: 13–14%
- Higher loading, smaller digester volume, lower recirculation

BIOLOGICAL DESULFURIZATION



| BDT TECHNOLOGY

Stable H₂S removal for biogas upgrading.

- Efficient and reliable sulfur removal
- Two selectable treatment routes
- Flexible to different biogas end uses

SEMI-AEROBIC HYDROLYSIS



| SAH TECHNOLOGY

For lignocellulosic substrates such as agricultural straw.

- Microbial pretreatment accelerates hydrolysis
- Improves substrate utilization
- Shortens digester retention time

03



EQUIPMENT MANUFACTURING

Precision equipment. Sustainable tomorrow.
Engineering biogas solutions for generations to come.



MANUFACTURING BASE



61,000 m²

Manufacturing base



80,000 pcs / year

GFS tank plates



150,000 pcs / year

Epoxy-coated plates



3 Core Products

GFS tank · Epoxy tank ·
Membrane biogas holder

ANAEROBIC REACTORS



Assembled Reactor Solutions

Anaerobic reactors are key equipment for organic solid waste and high-concentration organic wastewater treatment.

YHR customizes assembled reactor solutions to match different wastewater characteristics and treatment goals.



Modular Design

Factory-assembled modules for efficient installation



Customized Solutions

Tailored configurations for different wastewater characteristics



Process Adaptability

Stable and efficient performance across varying conditions



Reactor Types

CSTR · UASB · IC · UBF · USR

ASSEMBLED REACTOR

GFS IC / UASB REACTOR

Suitable for high-strength organic wastewater, including landfill leachate, kitchen wastewater, pharmaceutical wastewater, papermaking wastewater, brewery wastewater, and food-processing wastewater.



Pharmaceutical wastewater IC reactor



Vegetable leachate IC reactor



Landfill leachate IC reactor



Landfill leachate UASB reactor

QUALITY

ASSEMBLED REACTOR

GFS/EPOXY COATED

CSTR REACTOR



The high inert glaze layer on the surface of the steel plate has excellent anti-corrosion performance, and can be applied to high concentration of suspended solids wastewater or waste residues, such as livestock manure, crop straw, kitchen waste, municipal sludge, wine lees, etc



MUNICIPAL WASTEWATER

STANDARDIZATION & MODULARIZATION



In the global water industry, whether it is industrial or municipal wastewater, there is an increasing trend towards equipment-based solutions. This trend is conducive to standardized design, efficient construction, and quality control of engineering projects.



Guangxi Guilin sewage project



Jiuquan sewage project



Jiangsu Wuzhong sewage project



Urban sewage treatment integration AO project

Leading the Way in Biogas Technology for a Greener Future

EXCEED CUSTOMER EXPECTATIONS

THANK YOU



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