BHT Environ®
Biologische Hochleistungs-Technologie

博汇特环保

BIOLOGISCHE HOCHLEISTUNGS-TECHNOLOGIE

Biochemical Technology Leader in Water Treatment Industry

Beijing BHT Environmental Technology Co., Ltd

Contents

01

About BHT

关　于　博　汇　特

About BHT

BHT Environ
Biologische Hoch-effiziente Technology

Principal Shareholder

朝阳科技集团 CHAOYANG TECHNOLOGY GROUP

中化 sinochem 科 | 学 | 至 | 上

Mission

Let the environment come back to nature

Core values

Open Freedom Advance Innovation

Founded: 2009

Enterprise type: Listed company under national ownership.

Company position: Being a comprehensive **technology service provider** in the field of waste water treatment, with **high-end** environmental protection **equipment** manufacturing, **new material** and **new ecological agents** together covering the entire process of core technology.

- Leader in water treatment industry
- PHD team of prestigious school
- Leading technology and products
- Prosperous and diverse business models
- Covering multiple industries and scenes

Key Words

BHT Environ
Biologische Hoch-effiziente Technology

16+ Years Experience

200+ Projects

200+ Staffs

3+ Factories

6+ Branch Offices

200+ Patents

Bussiness Structure

BHT Environ
Biologische Hoch-effiziente Technology

Business Scope

1. Water technology investment
2. New project process package service
3. Reconstruction and expansion
4. Technical service and consultation
5. Waste water plant operation

Industry and industrial park

Petrochemical industry, coal chemical industry, pharmaceutical, new energy, etc.

Municipal sewage

5,000 - 200,000 m^3/d

Decentralized sewage

0.5 - 5,000 m^3/d, towns, villas, military camps, high-speed service areas, etc.

Water environment remediation

River pollution interception and treatment, urban black and odorous water bodies

Technical System

BHT Environ
Biologische Hoch-effiziente Technology

Aerobic biological treatment tech.

- BioDopp – Biological treatment process
- BioComb –Biological treatment equipment
- FMBBR – Integrated rapid biological treatment equipment
- BMR – Integrated treatment equipment

Anaerobic biological treatment tech.

- BioDopp AFP
- ABR

Physical-chemical tech.

- ChemixComb
- ECO electrocatalytic oxidation technology

Sludge disposal technology

- Low temperature drying technology
- Spray drying technology
- BioChar sludge pyrolysis technology

Environmental protection new materials

- NDI foam filter
- BiVe super efficient aeration hose

Environmental protection ecological agent

- BioC-1M composite carbon source
- NFSSS nano flocculant
- SiRem simultaneous nitrogen and phosphorus removal agent

Main Technologies and Products

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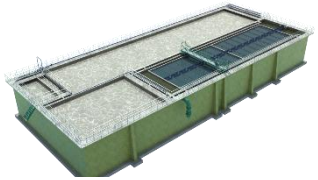
Technology and products		Application scenario	Customer
BioDopp®		Industrial/Industrial Park/Municipal Sewage	中国石油 SINOPEC LANDKREIS WALDSHUT, EIGENBETRIEB ABFALLWIRTSCHAFT
BioComb® Bioreactor-Clarifier Combo for Small WWTP		Villages / high-speed service areas / airports / villas / resorts / emergency purification	BEWG 北控水务 MCC 中冶京诚 CNCEC
BAR®		River remediation/urban odor pollution/emergency purification/municipal overflow sewage	SWET
NFSSS® Nanofloc for Sludge Rapid Sedimentation BioC-1M®		Industrial/Industrial Park/Municipal Sewage	CSCEC CSIC CNOOC
BiVE®		Industrial/Industrial Park/Municipal Sewage	TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION SINOCHEM

Market and Plate Layout

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R&D：BHT

BiVE:
Manufacture of new polymer materials

BPT:
Produce and sale of eco-friendly water treatment agent

Xingtai BHT:
Manufacture of high-end environmental protection equipment and non-standard equipment

BioFilter:
Sale of unpowered environmental protection equipment

Other regions:
Market development and local operation technical services

Global Footprint

BHT Environ
Biologische Hoch-effiziente Technology

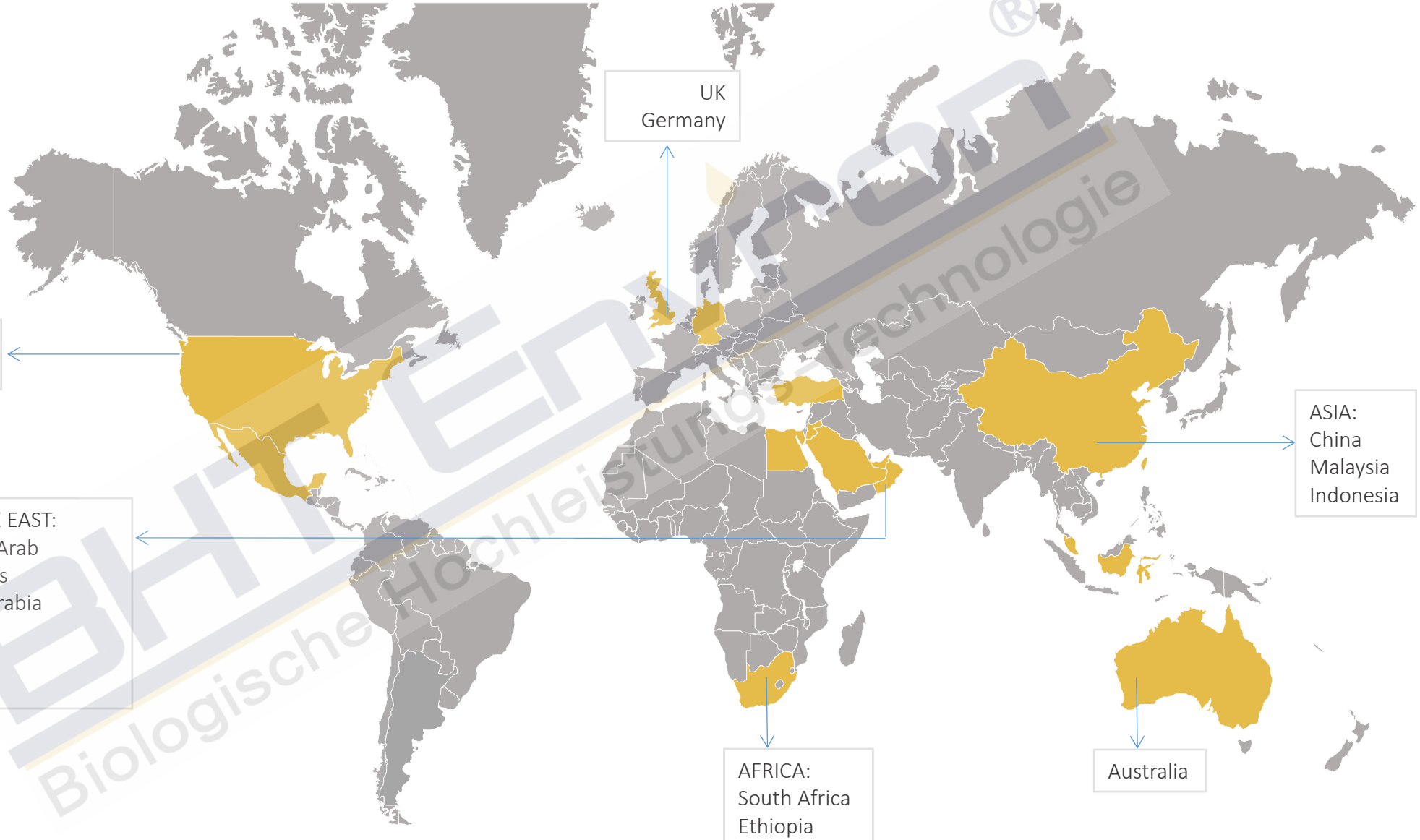
10+
Countries

29+
Provinces (domestic)

200+
Projects

20+
Industry fields

3+
Million tons of water per day



R&D Ability

BHT pays special attention to R&D and innovation to improve the core competitiveness in its fields.

200+
Patents(total)

2
International PCT patent

50+
Patent of invention

150+
Utility model patent

Institution for Production-Education-Research Cooperation:
University of Michigan, International Particle Technology Research Center, Tsinghua University, University of Science and Technology Beijing, etc.,

Honor and Certification (only a part)

BHT Environ
Biologische Hoch-effiziente Technology

Obtained more than **50** provincial and ministerial technical certifications and honors.

02

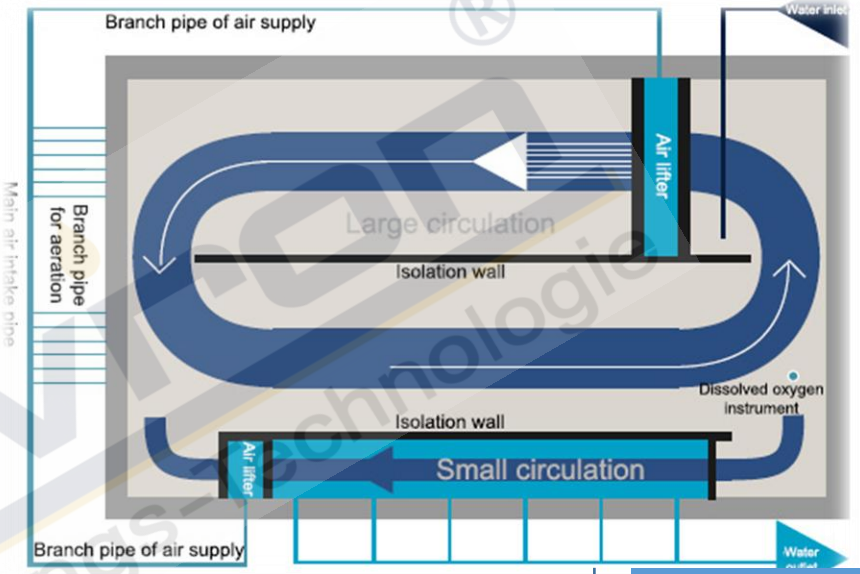
Our Technology

技　　术　　简　　介

BioDopp®

BHT Environ
Biologische Hoch-effiziente Technology

ITEMS	DATA
Name	BioDopp
Waste Source	**Industrial/Municipal Wastewater**
Unit Capacity	**5,000-200,000m³/d**
Technology	SND and clarifier all in together
Process parameters	Low DO and double MLSS
Installation Method	Above Ground or Under ground



Domestic leading

International leading

1 current technology

2 future technology

BioDopp → BioHopp → BioSopp → BioTopp

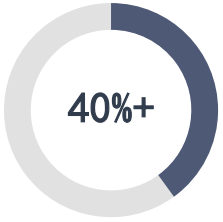
For the general Domestic sewage/ industrial sewage

·Strengthen the impact resistance
·Strengthen nitrogen and phosphorus removal treatment
·For surface class IV water discharge standard

·Strengthen the impact resistance
·Strengthen the treatment of refractory pollutants
·Short-cut nitrification and denitrification

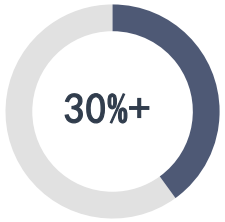
·Micro-aerobic granular sludge process
·Reaches/approaches the quasi-III water quality.
·P resource recovery coupled with pyrolysis technology
·Build an energy-neutral water plant

It has obvious advantages in the fields of high-concentration refractory industrial wastewater treatment and municipal wastewater treatment, with an industrial scale of **nearly 3 million tons** per day. In the field of **micro-oxygen** process segmentation, BioDopp process has developed into a process with the highest international market share, the deepest industrialization and the widest industry coverage.



Reduce energy consumption

Energy saving



Improve the reaction efficiency

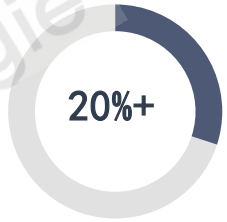
High-efficiency

Reduce sludge volume

Low-carbon

Save floor area

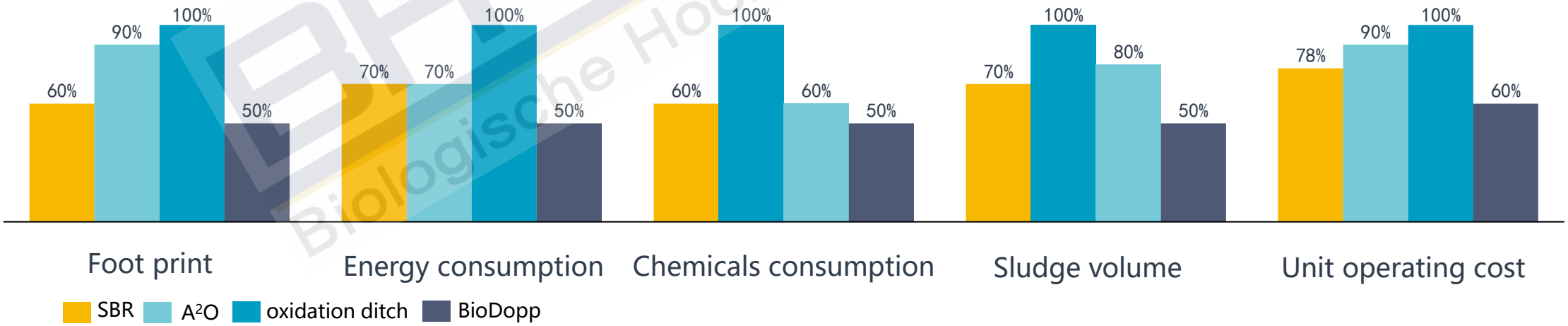
Intensive



Reduce the consumption of chemicals

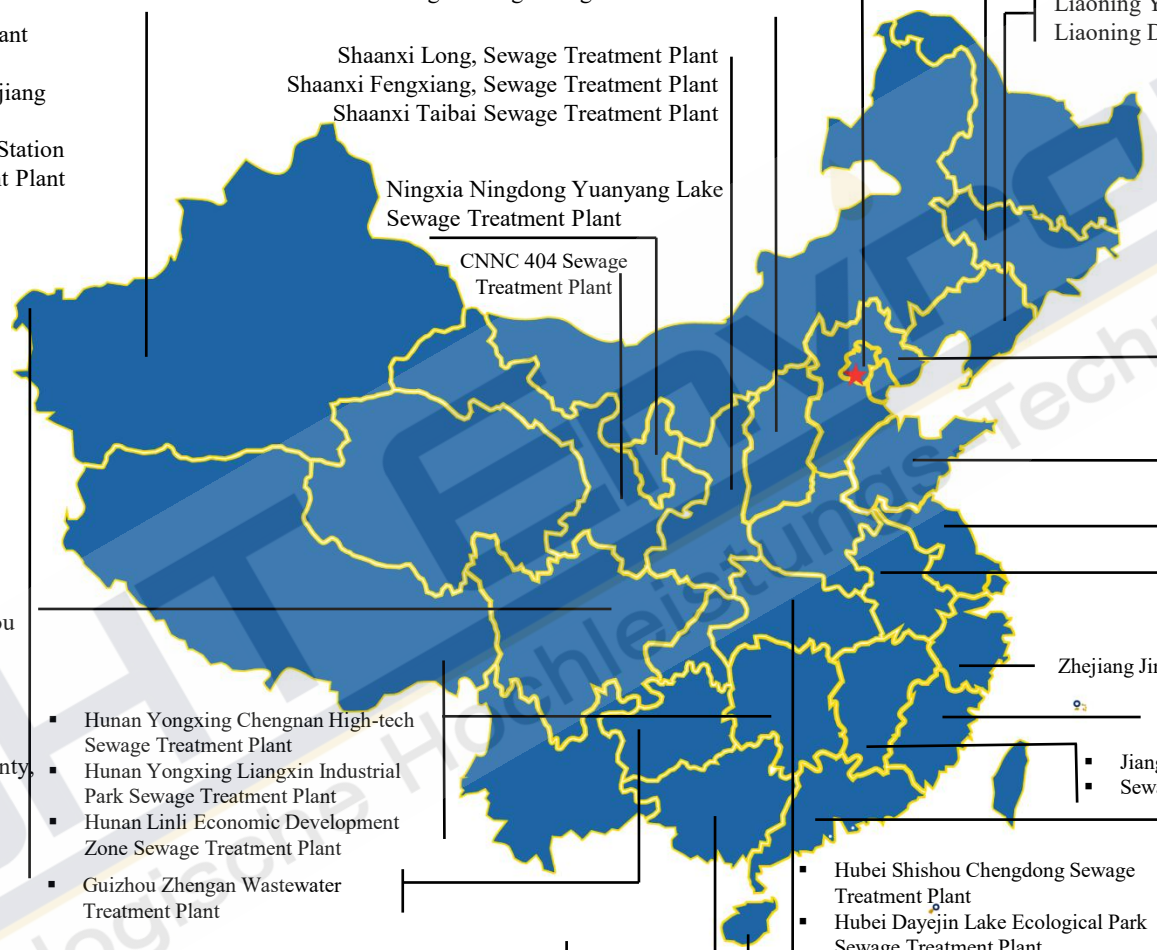
Ecological

BioDopp has obvious advantages compared with traditional process



BioDopp Cases

BHT Environ
Biologische Hoch-effiziente Technology



- Xinjiang Manas New Lake Sewage Treatment Plant
- Xinjiang Huyanghe Sewage Treatment Plant
- Sewage Treatment Plant of 181 Regiment of Xinjiang Agricultural 10th Division
- Xinjiang Shengwo Chemical Sewage Treatment Station
- Xinjiang Atushi Central Urban Sewage Treatment Plant

Beijing Fangshan Rural Sewage Treatment Project

Shanxi Datong Yudong Sewage Treatment Plant

Shaanxi Long, Sewage Treatment Plant
Shaanxi Fengxiang, Sewage Treatment Plant
Shaanxi Taibai Sewage Treatment Plant

Ningxia Ningdong Yuanyang Lake Sewage Treatment Plant

CNNC 404 Sewage Treatment Plant

Jilin Nong'an Second Sewage Treatment Plant

Liaoning Yingkou Industrial Base Sewage Treatment Plant
Liaoning Datang Fuxin East Sewage Treatment Plant

- Hebei Hengshui Binhu New Area Sewage Plant
- Hebei Guantao Sewage Treatment Plant
- Hebei Dingxing County Sewage Treatment Plant
- Hebei Cangxian Xingji Sewage Treatment Plant
- Hebei Zanhuang County Huangming Sewage Treatment Plant
- Hebei Qinhuangdao North Sewage Treatment Plant
- Hebei Longhua Miaoshan Sewage Treatment Plant

- Shandong Expressway Service Area Sewage Treatment Project
- Shandong Linqing Rural Sewage Treatment Project

- Jiangsu Qidong Dongyuan Wastewater Treatment Plant
- Lianyungang Runze Chemical Sewage Treatment Station in Jiangsu

- Anhui Yixian Wastewater Treatment Plant
- Anhui Xiatang Industrial Park Sewage Treatment Station

Zhejiang Jingshan Town Integrated Technology Demonstration Project

Fujian Tianchen Yaolong Sewage Treatment Plant

- Jiangxi Yichun Wentang Town Sewage Treatment Plant
- Sewage treatment in Economic Development Zone, Jiangxi

- Sichuan Yilong County Urban Domestic Sewage Treatment Plant
- Sichuan Yilong Hexi domestic sewage plant
- Sichuan Yingjing Integrated Sewage Treatment Plant
- Sichuan Xuyong County Urban Domestic Sewage Plant
- Sichuan Shifang City Domestic Sewage Treatment Plant
- Sichuan Longchang Sewage Treatment Plant
- Sichuan Lezhi Wastewater Treatment Plant
- Sichuan Ebian County Sewage Treatment Plant
- Sichuan Dachuan Sewage Treatment Plant
- Dahua Town Sewage Wastewater Treatment Plant, Chongzhou City, Sichuan Province
- Sichuan Mianzhu Industrial Park Sewage Treatment Plant
- Sichuan Zigong Chenguang Industrial Wastewater Treatment Plant
- Sewage Treatment Plant of Hexi Industrial Zone, Yilong County, Sichuan

- Hunan Yongxing Chengnan High-tech Sewage Treatment Plant
- Hunan Yongxing Liangxin Industrial Park Sewage Treatment Plant
- Hunan Linli Economic Development Zone Sewage Treatment Plant
- Guizhou Zhengan Wastewater Treatment Plant

- Guangxi Chongzuo Emergency Sewage Treatment Station Project

- Hainan Haikou Guilinyang Sewage Treatment Plant
- Hainan Changan Pharmaceutical Sewage Treatment Station
- Hainan Wenchang Moon Bay Decentralized Sewage Treatment Station
- Hainan Qionghai Litao Village Decentralized Sewage Treatment Station
- Emergency purification of Shapo Reservoir in Haikou, Hainan

- Hubei Shishou Chengdong Sewage Treatment Plant
- Hubei Dayejin Lake Ecological Park Sewage Treatment Plant
- Hubei Daye Baoan Town Sewage Treatment Plant
- Hubei Daye Lingxiang Sewage Treatment Plant
- Hubei Daye City Chengui Sewage Treatment Plant

- Environmental comprehensive improvement project of Jiukeng River drinking water source in Dinghu District, Zhaoqing, Guangdong
- Emergency purification of rivers in Shishan Town, Foshan, Guangdong
- Emergency drainage purification of No. 1 rainwater pump station in Guicheng North District, Foshan, Guangdong
- Guangdong Dongguan Tangxia Sewage Treatment Station
- Comprehensive treatment of Shima River basin in Dongguan, Guangdong
- Guangdong Maoming Dianbai Rural Sewage Treatment Station
- Guangdong Heyuan Zijin Sewage Treatment Station

BioComb®

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ITEMS	DATA
Name	**BioComb**
Waste Source	Domestic/Municipal Waste
Unit Capacity	**20-500m³/d**
Technology	**AO with filler**
Main Tank Material	Weathering resistant steel
Height	2.7-3.0 meters
Installation Method	Above Ground or Semi-Under ground

- First-class brand in China
- The only product in China that has been certified by the Ministry of Environmental Protection and the Ministry of Industry and Information Technology.
- **Two national standard setter**

High quality
Low cost
Remote control

Advantages

Fast transportation

Easy operation
Remote control

Advanced technology
Lower power consumption
Stable operation

Flexible & fully automatic

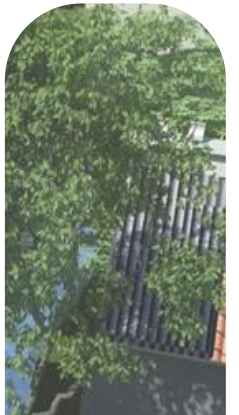
Less footprint
Custom appearance











BioComb®

BHT Environ
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BHT invested in the innovation, research, and development of BioComb-integrated sewage treatment equipment in 2011, which was widely developed and promoted in 2017. Up to now, more than **800 sets of BioComb** integrated equipment had been put into use, with a total water treatment capacity of **160,000 m^3**, involving more than **100** sewage treatment **projects**, covering **19 provinces** in the country and overseas countries such as Sharjah, the United Arab Emirates.

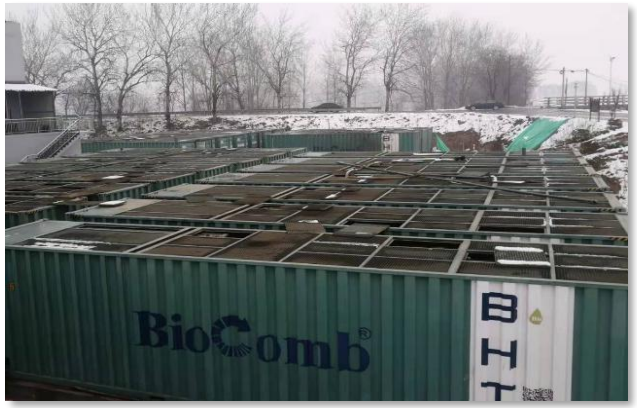
Villa area

Township and rural sewage

Expressway service area

Treatment of black and odorous container

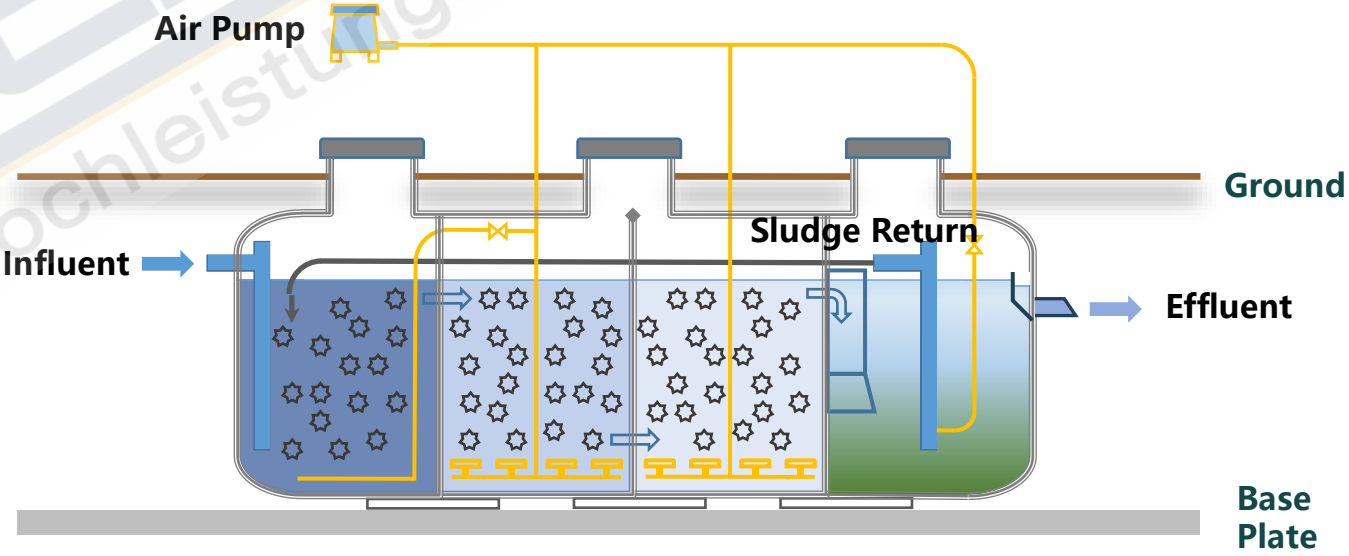
Container emergency treatment



Sewage plant overflow sewage

BioComb is a small and micro sewage treatment device independently developed by BHT's R&D team. It is specifically designed for sewage treatment systems in suburban and rural areas where water volume is small or pipeline networks are unavailable for coverage.

The effluent quality of BioComb meets the standards for **marine discharge** or **reclaimed water in the Middle East region.**



BioComb®

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Technology: IFAS (Immersed Fixed-Film Activated Sludge) . Considering the characteristics of inlet water in the Middle East, such as high COD (Chemical Oxygen Demand) and high ammonia nitrogen, BioComb adopts the IFAS (Integrated Fixed-Film Activated Sludge) process combining suspended bed biofilm and activated sludge. This process improves sewage treatment efficiency and effectively ensures the effluent performance of BioComb.

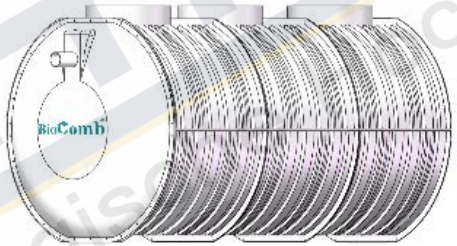
Enclosure: SMC molding; the main equipment adopts a FRP (Fiberglass Reinforced Plastic) molded tank.

Aeration System: Aerator with High Oxygen Utilization Efficiency.

Biological Media: High Specific Surface Area Modified MBBR Media.

Blower: Energy-Saving Diaphragm Air Pump.

Standardized Manufacturing
Outstanding Quality
Long Service Life



Advanced Technology
Ultra-Low Energy Consumption
Flexible Combination
Stable and Reliable

Modular Assembly
Convenient and **Fast Transportation**

Intelligent Control
Remote Operation and Maintenance

BMR®

BHT Environ
Biologische Hoch-effiziente Technology

BMR is a system that can be constructed in a short period of time. It only takes 2 months to complete the construction of a water treatment plant with a scale of 2,000 to 50,000 m^3/d. It has a long service life, is easy to install, allows for customizable appearance, and has a low cost. It is mostly used in emergency scenarios and for river purification.

Quality advantage

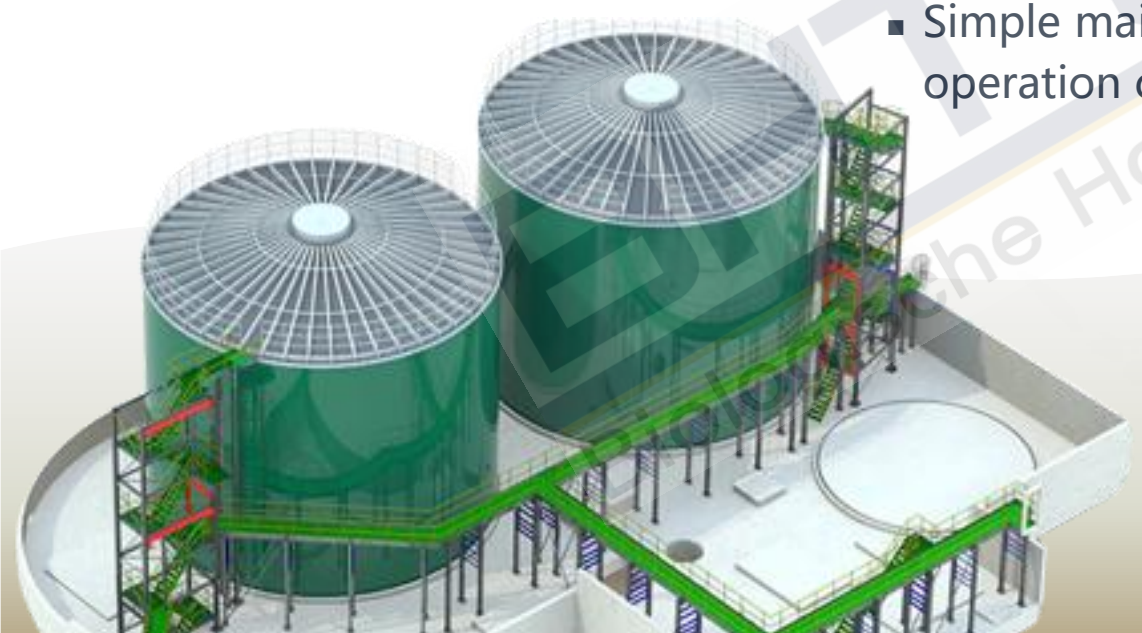
- Graceful appearance
- Service life > 30 years
- S tandardization

Cost advantage

- Short construction period and low cost
- no need for large-scale installation equipment
- Simple maintenance and low operation cost.

Installation advantage

- Installation is less affected by climate
- Convenient and simple construction
- Arbitrary expansion, disassembly and migration



Application field:

- Municipal overflow sewage
- River sewage
- Emergency projects

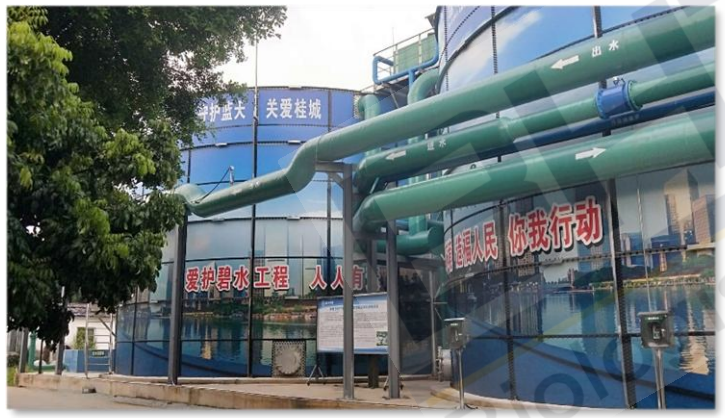
Processing scale and case:

- 2,000-50,000m^3/d
- Covering many provinces

Emergency treatment of overflow from sewage treatment plant

Emergency treatment of overflow sewage

Emergency treatment of overflow from sewage treatment plant



Improvement of outlet quality in forebay of rainwater pumping station

Bypass purification of river and lake water quality

Emergency treatment of black and odorous water body

Water Treatment Agent

BHT Environ
Biologische Hoch-effiziente Technology

NFSSS®

Nanofloc for Sludge Rapid Sedimentation

Rapid precipitation agent

- NFSSS flocculant is liquid, which belongs to non-hazardous and non-toxic compound products.
- Promote the rapid sedimentation of activated sludge for controlling sludge bulking; Increasing the treatment load of sedimentation tank
- Combined with Tsinghua University Industry-University-Research, the problem of overflow pollution caused by CSO (combined sewage system) is completely solved.

Identified as **leading in the world**

No need for expansion | Rapid precipitation | Nontoxic and harmless | Phosphorous removal | Good flocculation effect

BioC-1M®

Carbon Sources for Biological Denitrification

Composite carbon source

- Independent research and development, the most cost-effective, group and industry standard setter
- Non-toxic and harmless, liquid dosing, high efficiency and low temperature availability.
- The 100T/d production line is ready to go, and production and marketing centers are set up in each region.
- Source from brewery wastewater, resource utilization.

TN removal rate	Operating cost	Sludge production
+15%	-30%	-30%

New Polymer Materials

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NDI aeration hose

- The oxygen utilization rate is as high as **55%** in 6m clean water, which is twice as high as that of traditional aeration, and it is efficient and energy-saving.
- **Military quality**, excellent anti-reflux function, self-cleaning, non-stop maintenance
- Strong physical and chemical properties, can be used in complex environments, and the service life is more than or equal to **10 years.**

Application environment	BioDopp MAT	EPDM	silica gel
Soft and crack-resistant	√	X	√
Ultraviolet resistance	√	X	√
Continuous tensile property	√	X	X
Resistant to engine oil and fat	√	X	X
Mineral oil resistance	√	X	X
Biodegradation resistance	√	X	√
Hydrolysis resistance	√	X	X
Strong oxidant resistance	√	X	√

NDI sponge filler

The NDI sponge filler features a high porosity, enabling rapid biofilm formation. It has an extended service life and can significantly enhance the treatment capacity of biological tanks.

BioFilter Unpowered Maintenance-free Purification Tank

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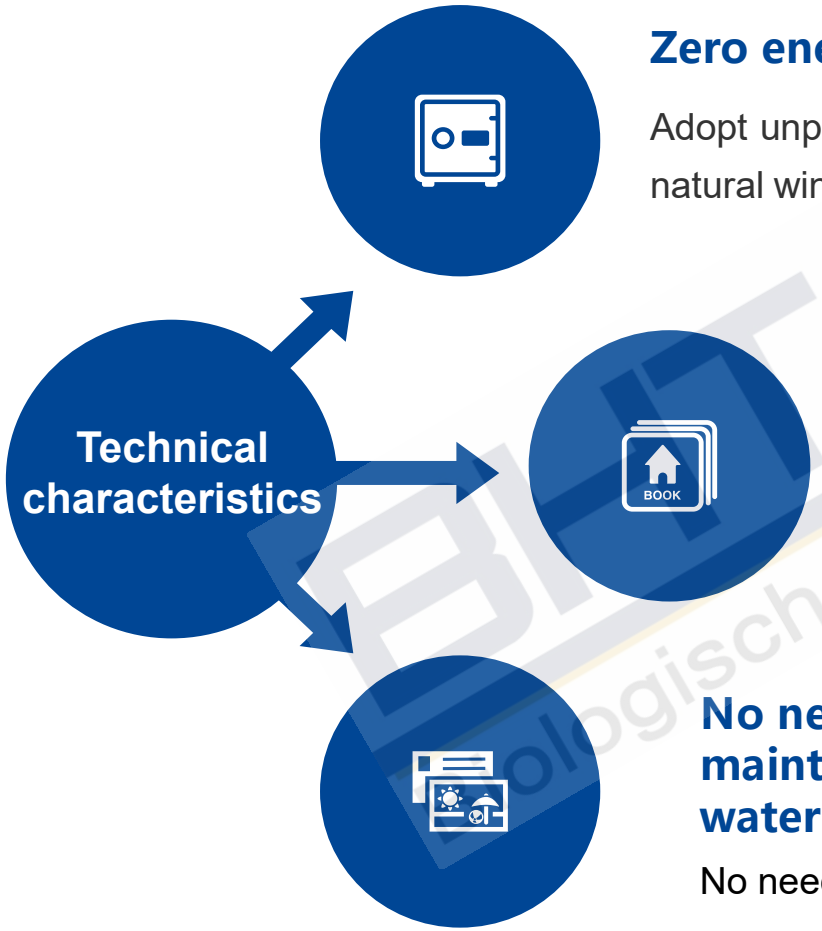
The non - powered and maintenance - free purification tank is suitable for small rural villages. It has obtained international authoritative certifications and has been applied in more than ten countries.This product has many models, up to 5 units can be connected in parallel, and the maximum processing capacity is **50m³/d.**



Zero energy consumption

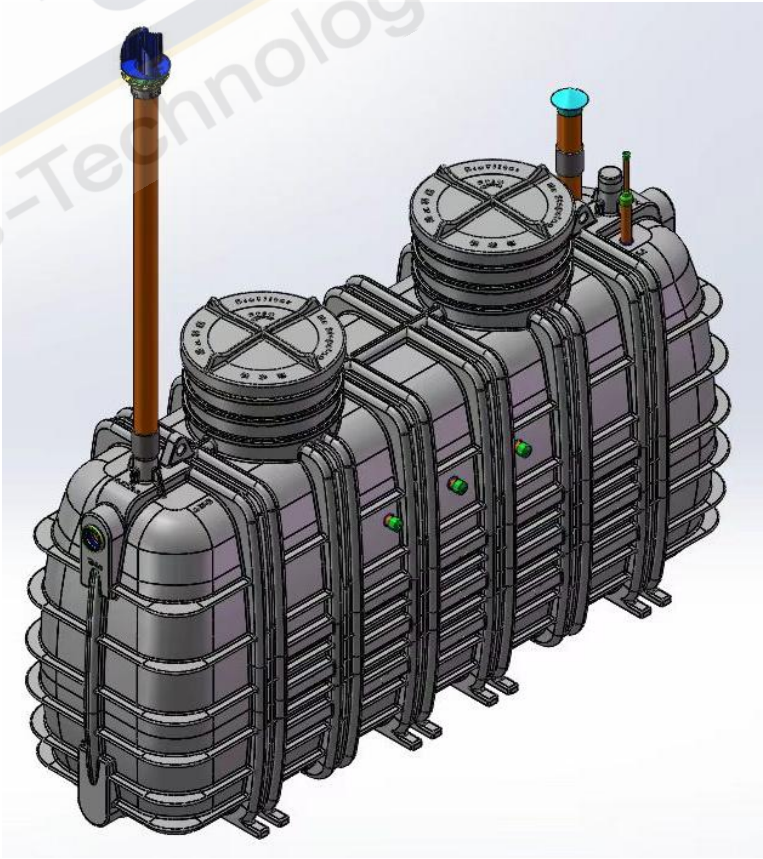
Adopt unpowered fan, and introduce natural wind into the equipment.

Quick start without debugging

The filler is treated by special enzymes and can be treated by natural water for 7 days.

No need to operation and maintenance, acceptable waterless shutdown

No need to replace parts.



03

Business Model

商　　务　　模　　式

Business Model

The Belt and Road Initiative

BHT actively responds to the Belt and Road Initiative and has carried out a rich and diverse range of business models, such as EPC、 BOO、BOT， etc.

EPC
Engineering
Procurement
Construction.

BOO
Build, Own, Operate.

BOT
Build, Operate, Transfer

PP
Process package

RENT

BOOT
Built, Own ,Operation, Transfer

BTO
Build,
Transfer,operating

04

Overseas Cases Study

海　外　案　例

Project Implementation

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Biologische Hoch-effiziente Technology

Indonesia - The first country to advocate the Maritime Silk Road

A coking industrial park waste water treatment project - under construction

Location : Indonesia Tsingshan Industrial Park

Type of sewage : Coal coking park sewage

Capacity: 800m^3/h, of which the evaporated ammonia wastewater is about 500m^3/h

Difficulty : High carbon and nitrogen

Business Model: PP

Test indicat	Influent water /mg/L	Effluent water /mg/L
COD_{Cr}	5000	150
NH_3-N	250	25
SS	150	70
VPs	800	0.3
CN^-	100	0.2

Project Implementation

BHT Environ
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United Arab Emirates (UAE) - A major Player in the Belt and Road Initiative

High-end community project in University City, Sharjah, UAE - under construction

Location: University of Sharjah's urban area.

Type of sewage: Municipal sewage

Capacity: 5,750 m^3/d.

Treated water: Reuse for irrigation

Business Model: EPC

Test indicat	Influent water /mg/L	Effluent water /mg/L
COD_{Cr}	600	50
BOD_5	300	10
NH_3-N	44	5
SS	300	10

Project Implementation

BHT Environ
Biologische Hoch-effiziente Technology

United Arab Emirates (UAE) - A major Player in the Belt and Road Initiative

Tanker Drainage Project in Sharjah, UAE - Under Construction

Location： Sharjah , UAE

Project Background： In many areas of Sharjah, there is a lack of sewage pipeline coverage. Every day, more than 8,000 tank trucks collect sewage throughout the city and transport it for treatment. Therefore, need to build decentralized sewage treatment plants.

Capacity: 3,000m^3/d.

Project form： 10 BioComb integrated equipment is adopted for in-situ treatment.

Business Model: BOO, the operation period is more than 10 years.

Test indicat	Influent water /mg/L	Effluent water /mg/L
COD_{Cr}	400	60
BOD_5	300	20
NH_3-N	30	8
SS	300	20

Project Implementation

BHT Environ
Biologische Hoch-effiziente Technology

United Arab Emirates (UAE) - A major Player in the Belt and Road Initiative

PROPOSAL FOR DESIGN & BUILT SEWAGE TREATMENT PLANT (STP) – FOR HAYYAN RESIDENTIAL COMMUNITY

Location: Hayyan Residential Community at Al Barashi, Sharjah, UAE

Type of sewage: Municipal sewage

Capacity: 2,4000 m^3/d.

Treated water: Reuse for irrigation

Business Model: EPC

Test indicat	Influent water /mg/L	Effluent water /mg/L
COD_{Cr}	500	50
BOD_5	300	10
NH_3-N	44	3
TN	60	50
SS	300	10
Fecal coliforms	-	23

Project Implementation

Mongolia - A major Player in the Belt and Road Initiative

Project for the treatment of a brackish water lake in the far outskirts of the city of Erdenet

Location: Mongolia

Type of sewage: Concentrated brine lakes

Capacity: 800 m^3/d

Business Model: EPC

Test indicat	Influent water /mg/L	Effluent water /mg/L
COD_{Cr}	76-122	30-50
BOD_5	61-92	20
TN	27-42	15
TP	0.39-1.8	1.5
SS	300	10

BHT Environ®
Biologische Hochleistungs-Technologie

治水治源 / 趋于自然
Source Healing Environment Naturalizing

水处理行业综合技术服务商

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