

COMPANIES CATALOGUE

OF THE EUROPEAN BIOGAS ASSOCIATION



Leading Companies in Biogas Technology

Manufacturers of biogas plants and components

Science & Research

Consulting

Operators

Planners

Training



EBA
European Biogas Association

January 2015

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Who is Who?

Companies and their business areas in a nutshell (in alphabetical order)

Name	Active company offices or sales	Active company offices or sales	Operators	Manufacturers, suppliers of plant components	Substrate	Services, consulting	Science & Research	Training	Page
AB Energy (Gruppo AB)	Italy, Poland, Spain, Romania, Croatia, Serbia, Czech Republic			✓		✓		✓	6
Agraferm Technologies AG	Germany	✓				✓			7
AC Biogas GmbH	Germany, UK		✓						8
APROVIS Energy Systems GmbH	Worldwide			✓					9
Awite Bioenergie GmbH	Germany, partners in BeNeLux, Spain, UK, Poland, Turkey, Canada, Thailand, Indonesia, Malaysia			✓					10
Balmoral Tanks Ltd.	UK, Europe	✓		✓					11
BDI - BioEnergy International AG	Austria, France, Germany	✓	✓	✓		✓			12
Biogest Biogas	Austria, Bulgaria, Croatia, Czech Republic, Hungary, Italy, Poland, Ireland, Romania, Serbia, Slovakia, UK	✓	✓	✓		✓	✓	✓	13
BTA International GmbH	Germany, licensees in Italy and North America	✓		✓		✓			14
BTS Biogas	Italy, Germany, Czech Republic, France, UK, Poland, Canada, Japan, Thailand, Korea, Turkey	✓	✓	✓		✓	✓	✓	15
DSM	Netherlands, Germany, Austria, Czech Republic, Slovenia, Italy, USA, Canada, India, China, UK, France	✓		✓		✓	✓	✓	16
Franz EISELE u. Söhne GmbH u. Co.KG	Worldwide			✓					17

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Eurotec WTT	Italy, Spain, Cameroon, Czech Rep., Croatia, Greece, Egypt, Argentina	✓		✓		✓		✓	18
Evonik Fibres GmbH	Austria, Germany, Italy, UK, Eastern Europe, Canada, USA, Scandinavia, Taiwan, China, Korea, Japan, South Africa			✓					19
Fraunhofer IWES	Germany		✓			✓	✓	✓	20
Future Biogas Ltd.	UK	✓	✓						21
Gasunie	The Netherlands, Germany	✓		✓		✓			22
IES BIOGAS	Italy, Czech Republic, Romania, Serbia, Croatia, Poland, Bulgaria, Slovakia, Italy, Argentina	✓	✓	✓		✓			23
KWS SAAT AG					✓				24
Malmberg Water AB	Sweden, Denmark, Finland, Germany, UK	✓							25
MT-Energie	Germany, Italy, France, UK, Czech Republic, Slovakia, Poland, Romania, Hungary, Ukraine, Russia, Latvia, Lithuania, Bulgaria, Serbia, Greece, Turkey, Canada, USA, Brazil, Argentina, Australia	✓	✓	✓		✓	✓	✓	26
Parker Hannifin Manufacturing Germany GmbH & Co. KG	Worldwide			✓					27
Pentair Haffmans	Worldwide	✓		✓					28
Sattler AG	Offices in Austria, Germany; Sales: worldwide			✓		✓		✓	29

Who is Who?

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Schaumann Bioenergy GmbH (Enbycon Holding)	EU Members States, China, USA, Brazil, Thailand	✓	✓		✓	✓		✓	30
Schmack Biogas GmbH (Viessmann Group)	Italy, USA, Germany, UK, Turkey Representatives: France, Belgium, The Netherlands, Bulgaria, Czech Republic, Slovakia, Baltic countries, Ukraine, Norway, Sweden, Finland, Denmark, Australia	✓	✓	✓	✓	✓	✓	✓	31
Institute for Biogas, Waste Management and Energy; University of Rostock	Germany					✓	✓	✓	32
Serge Ferrari	France, Germany, Netherlands, Spain				✓				33
streisal GmbH	Worldwide				✓				34
TNO Energy	Europe, Asia, South America						✓		35
Vireo Energy AB	Poland, Belarus, Russia	✓	✓						36
Xylem Water Solutions AB	Worldwide			✓					37



Services

Manufacturer/supplier of plant components

- *Gas cleaning, gas processing*
- *Control & instrumentation systems*
- *Fans and compressors*
- *Cogeneration units*
- *Other energy conversion technologies (e.g. ORC, fuel cells)*
- *Construction and insulation materials*
- *Pipes & heating pipes*
- *Safety systems, monitoring and warning systems*
- *Working materials (oils, lubricants, etc.)*
- *Transformers, connection to electricity grid*
- *Heat utilization*

Services / consulting

- *Financing*

Others

- *Training*

AB Energy (Gruppo AB)

Address: Via Caduti del Lavoro, 13, Orzinuovi BS , Italy

Phone: +39 030 9400100

E-Mail: info@gruppoab.it

Website: www.gruppoab.it

Contact person: Caio Pezzola, Marketing Manager;
caio.pezzola@gruppoab.it, +39 334 6966758

Year founded: 1981

Total number of employees: 500

Number of employees in biogas department: 500

Turnover: € 134 million

Active biogas offices or sales in: Turkey;

Representatives: Italy, Poland, Spain, Romania, Croatia, Serbia, Czech Republic

Key business area: Combined heat and power plants - CHP. Modular outdoor and indoor solutions from 63 to 1484 kW

References:

- Number of built biogas plants: 630
- Number of performed services: 350
- Total built capacity of biogas plants: 700 MW_{th}
- Total serviced capacity of biogas plants: 380 MW_{th}

What makes your service unique to the biogas industry ?

Gruppo AB has the products and the skills to make it unique on the European scenario of cogeneration from biogas. All the companies of the group are synergic one to the other and take advantage of constantly evolving common know-how and multi-disciplinary resources: all this is translated into high performances and reliable plants.

Services

Planner/manufacturer of biogas plants

- *Project development/planning*
- *Arranging permitting*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Services / consulting

- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*

Agraferm Technologies AG

Address: Färberstr. 7, 85276 Pfaffenhofen an der Ilm, Germany

Phone: +49 8441 8086 100

E-Mail: info@agraferm.com

Website: www.agraferm.com

Contact person : Markus Ott; m.ott@agraferm.com, +49 8441 8086-101

Year founded: 2004

Total number of employees: 85

Number of employees in biogas department: 85

Active biogas offices or sales in: Germany

Key business area: EPC contractor, technology provider, technical biological service, technical service – for Anaerobic Digestion / Biogas plants; Affiliated company BTA International: Waste pre-treatment and digestion of waste.

References:

- Number of built biogas plants: 110 (including 14 gas-to-grid/biomethane)
- Total built electrical capacity of biogas plants: 110 MW
- Services performed in the following countries: Germany (50%), UK (20%), Italy (10%), Slovakia (10%), Czech Republic (3%), Latvia (3%), Belgium (3%)

What makes your service unique to the biogas industry ?

High substrate flexibility, high performance fermentation with high reliability and maximum system availability, small footprint with minimum operating costs, industrial-quality plant construction.

Services

Operator of biogas plants

- *Biogas plant*
- *Biomethane plant*

- **Address:** Hafenweg 15, D-48155 Münster, Germany
Phone: +49 251 27601 100
E-Mail: info@ac-biogas.de
Website: www.ac-biogas.de
Contact person: Susanne Fritz, Head of Corporate Communications; +49 251 27601 121
Year founded: 2004
Total number of employees: 220
Number of employees in biogas department: 220
Active biogas offices or sales in: Germany, UK

References:

- Number of biogas plants operated by your company: 90 (Germany) + 1 (Austria), thereof 11 biomethane plants

What makes your service unique to the biogas industry ?

AC Biogas is one of Germany's largest decentralized producers of energy from biogas. The company operates biogas plants in 91 locations. Its current electricity generation capacity is 89 MW. AC Biogas is a vertically integrated company that covers large portions of the entire biogas supply chain: project development, approval planning, financing, construction works, commercial and technical plant management, management of raw materials, biological support, grid connection, sale of electricity, heat and biomethane. In addition to heat and electricity generation, AC Biogas operates 11 plants for feeding biomethane into the natural gas network. The capacity of these plants adds up to 550 Mio kWh per year. AC Biogas intends to continue growing in this sector and will be scaling up its investment in biomethane projects in the future.

Services

Manufacturer/supplier of plant components

- *Gas cleaning, gas processing*
- *Heat utilization*

● **Address:** Ornbauer Str. 10, 91746 Weidenbach, Germany

Phone: +49 9826 65830

E-Mail: info@aprovis-gmbh.de

Website: www.aprovis-gmbh.de

Contact person: Michael Kalb, Product Manager;

michael.kalb@aprovis-gmbh.de, +49 (0) 9826 6583 181

Year founded: 2000

Total number of employees: 100

Number of employees in biogas department: 8

Key business area: Exhaust gas heat recovery (e.g. exhaust gas heat exchanger and steam boiler), gas cooling units, activated carbon filtration and catalytic converters including the maintenance and service of the equipment.

Services: worldwide

● **References:**

- Number of built units for biogas plants: several thousand within the last five years
- Total built thermal capacity for biogas plants: from 100 MWh/a up to 300 MWh/a
- Services performed in the following countries: Germany, Austria, Czech Republic, UK, Italy, France, Benelux, Spain, Slovakia, Poland

● **What makes your service unique to the biogas industry ?**

Specialized in the engine CHP business APROVIS provides expert knowledge in exhaust gas heat recovery and gas treatment from planning until start-up of your plant. Latest technical expertise and references at well-known customers ensure maximum reliability and benefit for your plant.



Awite Bioenergie GmbH

Services

Manufacturer/supplier of plant components

- *Gas analysis*
- *Control & instrumentation systems*
- *Gas control systems*

● **Address:** Grünseiboldsdorfer Weg 5, D-85416 Langenbach, Germany

Phone: +49 8761 72 162 0

E-Mail: info@awite.com

Website: www.awite.com

Contact person : Dr.-Ing. Martin Grepmeier

Year founded: 2001

Total number of employees : 31

Number of employees in biogas department : 31

Active biogas offices or sales in: Germany, partners in BeNeLux, Spain, UK, Poland, Turkey, Canada, Thailand, Indonesia, Malaysia

● **References:**

- Number of gas analysers: 1,700
- Number of plants equipped with automation system: 100
- Services performed in the following countries by the company and partners: Europe-wide

● **What makes your service unique to the biogas industry ?**

We at Awite Bioenergie GmbH develop, manufacture, sell and maintain individually designed process analysis systems for various types of bio technological plants. The systems can be used for biogas analysis, to monitor the injection of biogas into the natural gas grid, to control fuel cell applications, raw biogas distribution, CDM (Clean Development Mechanism) applications and can also take over additional control tasks. Moreover we offer the automation and visualization of biogas plants, wastewater treatment plants and lab-scale plants.

No matter what your individual needs are: top quality and individually designed solutions are at the center of everything we do. Every employee at Awite Bioenergie GmbH represents this standard, from individual consulting services to the planning phase and the final implementation.

Services

Planners/manufacturers of biogas plants

- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Manufacturer/supplier of plant components

- *Fermenters/containers*

Balmoral Tanks Ltd.

Address: 321 Hough Lane, Barnsley, UK. S73 0LR

Phone: +44 1226 340370

E-Mail: industrialtanks@balmoral.co.uk

Website: www.balmoralindustrialtanks.com

Contact person: Jonathan Smith;

j.smith@balmoral.co.uk, +44 1226 340370

Year founded: 1980

Total number of employees: >100

Number of employees in biogas department: 15

Active biogas offices or sales in: UK, Europe

Key business area: Balmoral Industrial Tanks, formerly known as Galglass, is Europe's foremost designer and manufacturer of anaerobic digestion & biogas-related tanks. Benefitting from decades of design and installation experience, Balmoral's product range covers all aspects of AD tank specification including bases, roofs, insulation and leak detection systems.

What makes your service unique to the biogas industry ?

Balmoral's engineering, production and installation teams operate to the highest standards and are accredited to demanding international criteria. The company's commitment to R&D keeps it ahead of the competition; it is this strategy of continuous improvement that has taken Balmoral to the forefront of the AD, water and wastewater sectors.

Services

Planners/manufacturers of biogas plants

- *Project development/planning*
- *Arranging permitting*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Operators of biogas plants

- *Biogas plant*
- *Biomethane plant*

Manufacturer/supplier of plant components

- *Substrate preparation and processing*
- *Fermenters/containers*
- *Stirring and pump systems*
- *Gas cleaning, gas processing*
- *Control & instrumentation systems*
- *Hygiene systems*
- *Waste treatment*
- *Size reduction/depacking systems*
- *Fermentation product processing, separation system*
- *Heat utilization*

Services / consulting

- *Consulting*
- *Biological support*

Address: Parking 18, 8074 Grambach/Graz, Austria

Phone: +43 316 4009 100

E-Mail: sales@bdi-bioenergy.com

Website: www.bdi-bioenergy.com

Contact person: Edgar Ahn; sales@bdi-bioenergy.com

Year founded: 1996

Total number of employees: 120

Number of employees in biogas department: 8

Key business area: Specialised in the development of technologies that make optimum use of resources in the industrial processing of by- and waste products. BDI carries out research on the development of processes for the processing of new raw materials at its own large laboratories and owns an extensive patent portfolio that has resulted from its in-house research and development activities.

References:

- Number of built biogas plants: 3
- Total built electrical capacity of biogas plants: 58.000 MWh

What makes your service unique to the biogas industry ?

The BDI BioGas Technology is particularly suitable for the bioenergetic recovery of difficult industrial and municipal residual and waste products that are available as a raw material throughout the year, 24/7 After Sales Service.

Services

Planner/manufacturer of biogas plants

- *Project development/planning*
- *Arranging permitting*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Operator of plants

- *Biogas plant*

Manufacturer/supplier of plant components

- *Substrate preparation and processing*
- *Fermenters / containers*
- *Stirring and pump systems*
- *Gas accumulators*
- *Gas cleaning, gas processing*
- *Gas analysis*
- *Control & instrumentation systems*
- *Gas control systems*
- *Fans and compressors*
- *Cogeneration units*
- *Other energy conversion technologies (e.g. ORC, fuel cells)*
- *Construction and insulation materials*
- *Covers, films and foils*
- *Pipes*
- *Safety systems, monitoring and warning systems*
- *Hygiene systems*
- *Waste treatment*
- *Washing and cleaning systems*
- *Fermentation product processing, separation systems*
- *Connection to gas grid*
- *Heat utilization*
- *Natural gas vehicles*

Services / consulting

- *Consulting*
- *Biological support*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Emissions protection assessors*
- *Safety assessors*
- *Insurance*
- *Financing*
- *Quality assurance for fermentation products*
- *Computers and software for plant management*
- *Direct marketing of power*

Science & Research

- *Own research department*

Address: Inkustraße 1-7/5/2, A-3400 Klosterneuburg, Austria

Phone: +43 2243 20840 00

E-Mail: office@biogest-biogas.com

Website: www.biogest-biogas.com

Contact person: Martin Schlerka; +43 2243 20840, martin.schlerka@biogest-biogas.com

Year founded: 2007

Total number of employees: 40

Active biogas offices or sales in: Austria, Bulgaria, Croatia, Czech Republic, Hungary, Italy, Poland, Republic of Ireland, Romania, Serbia, Slovakia and United Kingdom

References:

- Number of built biogas plants: ~80
- Total built capacity of biogas plants: ~ 50 MW
- Services performed in the following countries: Czech Republic, Slovakia, Poland, Austria, Hungary, Serbia

What makes your service unique to the biogas industry ?

Biogest is an international biogas plant manufacturer with two offices in Austria and one each in the Czech Republic, Italy, Serbia and United Kingdom. The biogas plants are installed in the well-established Biogest PowerRing technology. PowerRing has advantages because of its unique space-saving construction and specially designed stirring technique. The low electricity consumption and heating energy demand, the high reliability and availability makes the solid PowerRing technology a good choice to produce biogas from agricultural products and other wastes especially in the target markets. The core capabilities of Biogest range from project development, planning and financing through to the turnkey plant construction and technical and biological services. In addition to plant engineering activities, the Own Plant Operations business builds and operates facilities which are owned or part-owned by Biogest. To date, more than 90 biogas plant projects have been realized worldwide.

Others

- *Training*

Services

Planner/manufacturer of biogas plants

- *Turnkey wet mechanical pre-treatment systems*
- *Turnkey anaerobic digestion plants*
- *Turnkey plants (M&E)*

Manufacturer/supplier of plant components

- *BTA® Hydromechanical Pre-treatment - Process Control System for*
 - *anaerobic digestion*
 - *process water management*
 - *composting*
- *Pre-treatment systems in combination with or complementary to the BTA® Hydromechanical Pre-treatment*

Services/consulting

- *Process engineering*
- *Planning and supervision / assistance of start-up*
- *Support during operation (consultancy, technical inspections and assistance, maintenance contracts etc.)*
- *Plant Refurbishment*

BTA International GmbH

● **Address:** Färberstraße 7, 85276 Pfaffenhofen, Germany

Phone: +49 8441 8086 666

E-Mail: info@bta-international.de

Website: www.bta-international.de

Contact person: Stephan Schulte, Sales Manager;
s.schulte@bta-international.de, +49 8441 808 6611

Year founded: 1984 as BTA GmbH&Co KG;

2006 BTA International GmbH

Total number of employees: 22

Number of employees in biogas department: 19

Turnover: € 8 million

References:

- Number of built biogas plants: 9 Mechanical Biological Treatment Plants for municipal solid waste, 23 biogas plants for biowaste, food waste and/or commercial waste, 4 co-digestion plants with sewage sludge, 3 co-digestion plants with agricultural residues, 8 agricultural biogas plants and 3 biogas plants refurbished
- Cumulated treatment capacity: 1,2 million tons (incl. 236 thousand under construction)
- Cumulated annual biogas production: approx. 122 million Nm³ (incl. approx. 24 million Nm³ under construction)

What makes your service unique to the biogas industry ?

BTA International GmbH is the leading specialist for the hydromechanical pre-treatment of different kinds of waste and the subsequent anaerobic digestion of the cleaned organic fraction according to the BTA® Process for the production of biogas. The efficient removal of impurities upfront the digestion is the key for the successful digestion of biowaste, food waste, commercial waste and the organic fraction from municipal solid waste. BTA Hydromechanical Pre-treatment characterizes itself by its substrate flexibility and its high efficiency in the removal of impurities out of the organic suspension. This allows for high operation reliability, minimizes the disposal costs of the rejects, maximizes the biogas yield and ensures the highest quality of the digestate and thus the final compost material.

Services

Planners/manufacturers of biogas plants

- *Project development/planning*
- *Arranging permitting*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Manufacturer/supplier of plant components

- *Fermenters/containers*
- *Feeding, metering and weighing systems*
- *Stirring and pump systems*
- *Gas accumulators*
- *Gas cleaning, gas processing*
- *Gas analysis*
- *Control & instrumentation systems*
- *Fans and compressors*
- *Cogeneration units*
- *Construction and insulation materials*
- *Covers, films and foils*
- *Pipes and heating pipes*
- *Safety systems, monitoring and warning systems*
- *Waste treatment*
- *Washing and cleaning systems*
- *Size reduction/depacking systems*
- *Process aids (e.g. enzymes)*
- *Fermentation product processing, separation systems*
- *Transformers, connection to electricity grid*
- *Heat utilization*

Services / consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Nutrient auditing*
- *Emissions protection assessors*
- *Safety assessors*
- *Approved monitoring centres*
- *Computers and software for plant management*

BTS Biogas

Address: Via S. Lorenzo 34, I-39031 Brunico (BZ), Italy

Phone: +39 0474 37 01 19

E-Mail: info@bts-biogas.com

Website: www.bts-biogas.com

Year founded: 2008

Total number of employees: >100

Number of employees in biogas department : >100

Turnover: € 35 million

Active biogas offices or sales in: Italy, Germany, France, UK, Czech Republic, Poland, Canada, Korea, Japan, Turkey and Thailand

Key business area: BTS Biogas deals with design, installation, construction and operation of biogas plants. We offer unique technologies like the BIOaccelerator, the BIOdry and the software dinaMETAN, which increase and optimise the productivity and profitability of our power plants. We also offer biological assistance and consulting and have our own laboratory in Italy.

References:

- Number of built biogas plants: >170
- Total built capacity of biogas plants: >140 MW_e
- Services performed in the following countries: Italy, Germany, Czech Republic, Poland, France, UK, Japan, Korea

What makes your service unique to the biogas industry ?

The matured technology of our BIOaccelerator (three different units to pretreat by-products) enables existing and new biogas plants to work with unused substrate and increases the biogas yield. With our large network of professional partners, we are able to quickly and cost-effectively carry out services in connection with constructing and maintaining a biogas plant.

Science & Research

- *Own research department*

Training

Services

Planner/ manufacturer of biogas plants

- *Project development/planning*

Manufacturer/ supplier of plant components

- *Substrate preparation and processing*
- *Waste treatment*
- *Process aids (e.g. enzymes)*
- *Fermentation product processing, separation systems*

Services / consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Nutrient auditing*

Science & Research

Others

- *Training*

Address: PO box 1, 2600 MA, Delft, Netherlands

Phone: +31-15-2792613

E-Mail: Info.biogas@dsm.com

Website: www.dsmbiogas.com

Contact person : Christian Löchte;

Christian.Loechte@dsm.com, +49 172 2440 214

Year founded: 1902

Total number of employees : 22,000

Number of employees in biogas department : 4

Total turnover : € 9 billion

Active biogas offices or sales in: The Netherlands, Germany, Austria, France, UK, Czech Republic, Slovenia, Italy, USA, Canada, India, China

Key business area: DSM is a Life Science and Material Science company. In the biogas market specifically, DSM offers enzymes to support biomass hydrolysis and utilisation as well as a design of a complete new biogas production process based on control and management of feed into a novel reactor containing the microbes.

References:

- Number of performed services: >250 in operation and >1000 in contact
- Services performed in the following countries: Germany, Austria, UK, The Netherlands, Italy, Czech Republic
- Reference cases can be found on the website

What makes your service unique to the biogas industry ?

With more than 125 years of experience in Fermentation technology, DSM biogas team knows how to optimally use the "reactor" to create maximum output. This goes hand in hand with the knowledge on feeding the microbes the substrate they need to optimally perform. With the inhouse knoweldge of DSM in fermentation management, DSM is also actively working on major innovations in the biomass utilization towards renewable fuel or Biobased chemistry. A complete new and innovative process to make biogas is on the drawing board and to be expected soon.



Services

Manufacturer/ supplier of plant components

- *Stirring and pump systems*

Franz Eisele u. Söhne GmbH u. Co.KG

● **Address:** Hauptstrasse 2 - 4, D-72488 Sigmaringen, Germany

Phone: +49 7571 109-0; Fax 109-88

E-Mail: info@eisele.de

Website: www.eisele.de

Contact person : Rainer Eisler; rainer.eisler@eisele.de

Year founded: 1887

Total number of employees : 90

Number of employees in biogas department : 4

Active biogas offices or sales in: Worldwide

Key business area: Family-owned company founded in 1887. Manufacturer of slurry equipment (pumps, mixers, tankers, silos) for modern slurry management and of components for biogas plants (pumps, mixers) as well.

Services

Planners/manufacturers of biogas plants

- *Project development/Planning*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Manufacturers/suppliers of plant components

- *Fermenters/containers*
- *Waste treatment*

Services/consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Financing*
- *Computers and software for plant management*

Others

- *Pilot test systems*
- *Training*

Address: Riviera Maestri del Lavoro, 12, Padova, Italy

Phone: +39 049 870 4817

E-Mail: info@eurotecwtt.it

Website: www.eurotecwtt.it

Contact person : Leonardo Turolla

Year founded: 1998

Total turnover: € 8.4 million

Turnover of biogas department: € 3.8 million

Number of employees in biogas department: 18

Key Services: Primary water treatments, food process treatments, wastewater and by-products treatments (Industrial & agri-biotech)

Key business area: Food & beverage industry, dairy farms, livestock farms,

References:

- Number of biogas plants built : 25
- Total built electrical capacity of biogas plants (MWh): 15
- Total serviced electrical capacity of biogas plants (MWh): 20
- Services performed in the following countries: Italy (91%), Spain (2%), Cameroon (2%), Czech Rep. (1%), Croatia (1%), Greece (1%), Egypt (1%), Argentina (1%), other EU countries.

What makes your service unique to the biogas industry ?

Eurotec WTT with its Biogas plants aims at improving the quality of life and the business opportunities of its customers. For this purpose, the plants are simple and compact, but with an efficient and focused technology, supported by a fast implementation and high quality standard performances and reliable plants.

Services

Manufacturer/supplier of plant components

- *Gas cleaning, gas processing, gas upgrading and separation systems*

Evonik Fibres GmbH

Address: Gewerbepark 4, 4861 Schörfling, Austria

Phone: +43 7672 701 2891

E-Mail: sepuran@evonik.com

Website: www.sepuran.com

Contact person: Dr. Sandra Uebbing;
sandra.uebbing@evonik.com, +49 2365 496 433

Active biogas offices or sales in: Austria, Germany, Italy, France, UK, Scandinavia, Eastern Europe, Switzerland, USA, Canada, China, Korea, Japan, South Africa, Taiwan, Malaysia, Thailand

Key business area: Components (membrane modules) for engineering companies building biogas upgrading plants

References:

- Number of supplied biogas plants by your company: 20
- Total capacity of supplied biogas plants (Nm³/h): > 5 000 Nm³ /h
- Services performed in the following countries: Germany, UK, Switzerland, Austria, The Netherlands, China

Services

Operator of biogas plants

- *Biogas plant*

Services / consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Financing (Consulting)*
- *Computers and software for plant management*

Science & Research

- *Investigation of the whole process chain for electricity, heat, and energy source production from biomass*
- *Biomass usage for new energy conversion technologies*
- *Biogas based systems for decentralized use*
- *Optimization of the interaction between bioenergy systems and other renewable energy forms*
- *Opportunities and development of new integration and commercialization opportunities for bioenergy systems*
- *Monitoring and integration of biogas upgrading technology*
- *Development of biogas fed "micro gas networks"*

Others

- *Training*
- *Process Simulation*
- *Political Consulting*
- *Feasibility studies, due diligence and profitability analyses*
- *Surveys of new technologies*
- *Technology and system monitoring, evaluation and optimization*

Address: Königstor 59, 34119 Kassel, Germany

Phone: +49 561 7294 0

E-Mail: hbfz@iwes.fraunhofer.de

Website: www.iwes.fraunhofer.de

Contact person: Maren Brüscke, Assistant

Year founded: 2009, before known as ISET– Institute for Solar Energy Technology in Kassel/Hanau

Total number of employees: 500

Number of employees in biogas department: 25

Turnover: € 31 million

Key business area: Contract research, contract measurements, studies and consulting, technology assessments, pilot plants and demonstration plants

What makes your service unique to the biogas industry ?

The HBFZ (Hessian Biogas Research Center) investigates all aspects of energy production from biomass. Research activities begin with crop cultivation, continue with the adequate supply of the substrate, through to the production of biogas within the biogas installation as such, and also include the fermentation residues and the planting ground.

Furthermore, the HBFZ offers optimum conditions for testing energy management and control systems. Multiple PV-systems, a biogas plant with CHP, as well as a very flexible micro-gas-turbine and a wood chip-fired-plant are producing electrical or thermal energy. Moreover the facilities of the HBFZ include barns and stables, tool-room workshops, kitchens, boarding school and other facilities with a similar load profile found in a small village. The facilities are successively connected to a heating pipeline.

Services

Planner/manufacturer of biogas plants

- *Project development/planning*
- *Construction and commissioning support*

Operator of biogas plants

- *Biogas plant*
- *Biomethane plant*

● **Address:** 10-12 Frederick Sanger Rd, Guilford GU274D, UK

Phone: +44 1483 375 920

E-Mail: info@futurebiogas.com

Website: www.futurebiogas.com

Year founded: 2010

Total number of employees: 18

Number of employees in biogas department: 18

Active biogas offices or sales in: UK

Key business area: Development and operation of biogas plants

● References:

- Number of built biogas plants: 7
- Services performed in the following countries: United Kingdom

Services

Planner/manufacturer of biogas plants

- *Project development/planning*

Manufacturers/suppliers of plant components

- *Gas cleaning, gas processing*
- *Gas analysis*
- *Other energy conversion technologies (e.g. ORC, fuel cells)*
- *Pipes*
- *Safety systems, monitoring and warning systems*
- *Connection to the gas grid*

Services/consulting

- *Consulting*
- *Legal advice/legal support*
- *Financing*

Address: Concourslaan 17, 9727 KC Groningen, The Netherlands

Phone: +31 50 521 91 11

E-Mail: communicatie@gasunie.nl

Website: www.gasunie.nl

Contact person: W. C. de Groot: w.c.de.groot@gasunie.nl, +31 50 521 1062

Year founded: 1963

Total number of employees: 1700

Total turnover: € 1527 million

Key business area: Gasunie is one of the largest gas infrastructure companies in Europe. Our network annually conveys approximately 125 billion cubic metres of natural gas – almost a quarter of the total gas consumption in the European Union – using a network consisting of more than 15500 kilometres of pipeline in the Netherlands and Germany

References:

- Services performed in the following countries: The Netherlands 99%, Germany <1%

What makes your service unique to the biogas industry ?

Under label New Energy, Gasunie is examining the feasibility of sustainable technologies for larger-scale use. Gasunie cooperates with partners on creating new business models that are needed to bring the concept to maturity. Gasunie adopts in this process an independent, unifying, commercial position with an emphasis on the infrastructure required.

Services

Planner/manufacturer of biogas plants

- *Project development/planning*
- *Full-system suppliers/turnkey plants*

Operators of biogas plants

- *Biogas plant*

Manufacturers/suppliers of plant components

- *Fermenters/containers*
- *Feeding, metering and weighing systems*
- *Stirring and pump systems*
- *Gas accumulators*
- *Gas cleaning, gas processing*
- *Gas analysis*
- *Control & instrumentation systems*
- *Gas control systems*
- *Fans and compressors*
- *Cogeneration units*
- *Construction and insulation materials*
- *Covers, films and foils*
- *Construction chemicals*
- *Pipes and Heating pipes*
- *Safety systems, monitoring and warning systems*
- *Hygiene systems*
- *Waste treatment*
- *Working materials (oils, lubricants, etc.)*
- *Process aids (e.g. enzymes)*
- *Fermentation product processing, separation systems*
- *Transformers, connection to electricity grid*
- *Heat utilization*

Services / consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Nutrient auditing*
- *Emissions protection assessors*
- *Safety assessors*
- *Approved monitoring centres, authorized persons*
- *Regional planning*
- *Legal advice/legal support*
- *Financing*
- *Computers and software for plant management*
- *Direct marketing of gas*
- *Marketing service providers*

IES BIOGAS s.r.l.

Address: Via T. Donadon 4 - 33170 Pordenone, PN, Italy

Phone: +39 0434 363601

E-Mail: info@iesbiogas.it

Website: www.iesbiogas.it

Contact person: Dott. Marco Mazzero, Executive director; m.mazzero@iesbiogas.it

Year founded: 2008

Turnover : € 100 million

Active biogas offices or sales in: Italy, Czech Republic, Romania, Serbia, Croatia, Poland, Bulgaria, Slovakia, Italy, Argentina

Key business area: Design and construction of reliable, efficient, high performance biogas plants using state-of-the-art technology. IES BIOGAS is the company that has installed the largest number of biogas plant from 100 kWel to 999 kWel in Italy in the last 2 years. Over 120 infrastructure already installed in Italy and Europe.

References:

- Number of built biogas plants: 120
- Total built capacity of biogas plants: 107 MWel
- Services performed in the following countries: Germany, Austria, UK, The Netherlands, Italy, Switzerland, Czech Republic

What makes your service unique to the biogas industry ?

Very relevant is the numbers from the provision of continuity of IES BIOGAS plants. The average efficiency of installations made by the company since its inception ranges between 97% and 99%. Given the time necessary to routine maintenance, the net efficiency demonstrated by all of the detections is certified in substance equal to 100%. The IES BIOGAS plant supervision and control remote system, made on the basis of long experience of the subsidiary BIOGAS WESER EMS is developed entirely in Italy. It is simple and intuitive and can be customized according to specific customer requirements.

KWS



Seeding the future
since 1856

Services

Substrate

- *Seeds*

KWS SAAT AG

Address: Grimsehlstrasse 31, Postfach 1463, 37555 Einbeck

Phone: + 49 5561 311 0

E-Mail: info@kws.com

Website: www.kws.com

Contact person: Stefanie Eggers; stefanie.eggers@kws.com

Year founded: 1856

Total number of employees: 48 000

Turnover: € 1 178 billion

Key business area: The main areas of work of KWS lie in the breeding of varieties and the production and sale of seed for corn, sugarbeet, cereals, potatoes, oil-seed rape and sunflower



pure energy
clean water

MALMBERG

Services

Planner/ manufacturer of biogas plants

- *Full-system suppliers/turnkey plants*

Malmberg Water AB

Address: SE-296 85 Åhus, Sweden

Phone: +46 44 780 18 00

E-Mail: info@malmberg.se

Website: www.malmberg.se

Contact person: Erik Malmberg; erik.malmberg@malmberg.se, +46 44 780 18 53

Year founded: 1866

Total number of employees: 100

Number of employees in biogas department: 40

Turnover: € 43 million

Active biogas offices or sales in: Sweden, Denmark, Finland, Germany and UK

Key business area: Malmberg is a Cleantech company with a global focus on clean energy and clean water in the fields of biogas and water treatments. We are at the forefront of clean technologies as regards the design and production of biogas and natural gas refinement plants. Over 120 infrastructure already installed in Italy and Europe.

References:

- Number of biogas upgrading plants: 75
- Services currently performed in Sweden, Denmark, Finland, Germany and UK.

What makes your service unique to the biogas industry ?

Through our concept Malmberg COMPACT® we offer gas refineries with highest performance and availability, as well as unique products and solutions. We are among the pioneers in this field and have completed more than 70 gas treatment plants throughout Europe and China. The first biogas installation was already constructed in 1997.

Services

Planner/ manufacturer of biogas plants

- *Arranging permitting*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Operator of biogas plants

- *Biogas plant*
- *Biomethane plant*

Manufacturer/ supplier of plant components

- *Substrate preparation and processing*
- *Fermenters/containers*
- *Feeding, metering and weighing systems*
- *Stirring and pump systems*
- *Gas accumulators*
- *Gas cleaning, gas processing*
- *Gas analysis*
- *Control & instrumentation systems*
- *Gas control systems*
- *Fans and compressors*
- *Cogeneration units*
- *Other energy conversion technologies (e.g. ORC, fuel cells) – Biogas Upgrading Units*
- *Construction and insulation materials*
- *Covers, films and foils*
- *Pipes*
- *Safety systems, monitoring and warning systems*
- *Hygiene systems*
- *Waste treatment*
- *Washing and cleaning systems*
- *Fermentation product processing, separation system*
- *Connection to gas grid*
- *Heat utilization*
- *Natural gas vehicles*

Services / consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Nutrient auditing*
- *Emissions protection assessors*
- *Safety assessors*
- *Approved monitoring centres, authorized persons*
- *Legal advice/legal support*
- *Financing*
- *Insurance*
- *Quality assurance for fermentation products*

MT-Energie

Address: Ludwig-Elsbett-Straße 1, 27404 Zeven, Germany

Phone: +49 (0) 4281 98 450

E-Mail: info@mt-energie.com

Website: www.mt-energie.com

Contact person: Emanuel Bregulla, Sales Dep. Western Europe

Year founded: 2001

Total number of employees: approx. 650

Turnover: € 198.8 million

Active biogas offices or sales in: Germany, Italy, France, UK, Czech Republic, Slovakia, Poland, Romania, Hungary, Ukraine, Russia, Latvia, Lithuania, Bulgaria, Serbia, Greece, Turkey, Canada, USA, Brazil, Argentina, Australia

Key business area: MT-Energie offers complete biogas plants of all sizes and special components as well as technical and biological support. As a company of the MT Group MT-BioMethan offers innovative gas processing and feeding technology for biomethane production.

References:

- Number of built biogas plants: 583
- Number of performed services: approx. 1,000 customers
- Total built capacity of biogas plants: 347 MWel
- Total serviced capacity of biogas plants: approx. 600 MWel

What makes your service unique to the biogas industry ?

You can rely on us even after the start-up phase of your biogas system. With the help of remote monitoring we can track (constantly, if necessary) the changes in your biogas system. This allows for constructive cooperation between system operators and our team here at MT.

Science & Research

- *Own Research department*

Others

- *Training*

- *Computers and software for plant management*
- *Direct marketing of power*
- *Direct marketing of gas*

Services

Manufacturer/ supplier of plant components

- *Gas cleaning, gas processing*

Parker Hannifin Manufacturing Germany GmbH & Co. KG

Address: Hiross Zander Division, Im Teelbruch 118

Phone: +49 2054 934 0

Website: www.parker.com/hzd

Contact person: Steven Scott; steven.scott@parker.com,
Tel: +44 (0) 191 402 9688, Mob: +44 (0) 752 747 0765

Year founded: 1979

Total number of employees: 233

Number of employees in biogas department: 10

Active biogas offices or sales in: Sales and Service through Parker offices and sales companies worldwide

Key business area: Biogas Dehumidification Systems, Biogas and Natural Gas Filtration, Biomethane Drying, Siloxane Removal, O₂ generators

References:

Over 500 installations worldwide including Germany, Italy, UK, Sweden, Austria, Spain, France, Ireland, Czech Republic, Slovakia, Russia, Poland Turkey, USA, India, Thailand, Malaysia, Australia

What makes your service unique to the biogas industry ?

In the field of biogas and biomethane treatment, Parker are unique in being the original manufacturer of all of the key components such as gas filters, separators, coolers and adsorption dryers. This means that our systems are built using our extensive experience of gas treatment applications and are designed to purify biogas and biomethane down to the levels of cleanliness demanded by national and international standards. Our worldwide sales and service teams are highly experienced in supporting all Parker products which means we can offer support, advice and service wherever the installation is located.

HAFFMANS

Services

Planner/ manufacturer of biogas plants

- *Project development/planning*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Manufacturer/ supplier of plant components

- *Gas cleaning, gas processing*
- *Gas analysis*
- *Control & instrumentation systems*
- *Gas control systems*
- *Fans and compressors*
- *Pipes*

Pentair Haffmans

Address: Marinus Dammeweg 30, 5928 PW Venlo, The Netherlands

Phone: +31 77 323 23 00

E-Mail: marketing@haffmans.nl

Website: www.haffmans.nl

Contact person: Toine Toten; Toine.Toten@Pentair.com, +31 77 850 3874

Niels den Heijer; Niels.denHeijer@Pentair.com, +31 77 323 2396

Year founded: 1947

Total number of employees: Pentair Ltd. 30,000; Pentair Haffmans approx. 170

Number of employees in biogas department: 10

Active biogas offices or sales in: worldwide

Key business area: Specialist in Biogas Upgrading & CO2 Recovery Solutions

References:

- Number of built biogas plants: 14
- Total built capacity of biogas upgrading plants (MWh): 4.5 million Biomethane / year
- Services performed in the following countries: Netherlands, UK, Germany, France

Services

Manufacturer/ supplier of plant components

- *Gas accumulators*
- *Covers, films and foils*

Services/Consulting

- *Consulting*
- *Safety accessors*

Others

- *Training*
- *Service and maintenance*

Sattler AG

Address: Sattlerstr. 1, A-7571 Rudersdorf

Phone: +43 3382 733 118

E-Mail: biogas@sattler-global.com

Website: www.sattler-global.com

Year founded: 1875

Total number of employees: 678

Number of employees in biogas department: 45

Total turnover: € 122 million

Total turnover of biogas department: € 14 million

Active biogas offices or sales in: Worldwide

Key business area: A reliable system is based on technologies and services that are optimally harmonized. With our broad series of products ranging from air-supported systems to mast-supported substrate coverage systems, we are able to offer you the right solution set. Our Products: Double Membrane Gas Storage, Double Membrane Gas Storage-Tank mounted, High Silo Roof, Biogas Roof single-layer, Biogas Roof double-layer, Gas Bag, Lagoons

References:

- Number of built biogas plants: Installed Biogas Storage Systems and foil roofs approx. 4.000
- Number of performed service: approx. 300 per annum
- Services performed in the following countries: Worldwide

What makes your service unique to the biogas industry ?

Sattler revolutionized the sector of Biogas storage by the invention of the double membrane gas storage 34 years ago. More than 1,000 installed biogas storage units worldwide attest to the quality of our products. The membrane-based storage technology provides our customers with many advantages: durability, low maintenance, quick installation, permanently gas resistant, low operation cost.

Services

Planner/manufacturer of biogas plants

- *Project development/planning*
- *Full-system suppliers/turnkey plants*

Operator of biogas plants

- *Biogas plant*

Substrate

- *Silage aid*

Services / consulting

- *Consulting*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Nutrient auditing*
- *Emissions protection assessors*
- *Safety assessors*
- *Direct marketing of power*

Others

- *Training*

Schaumann BioEnergy GmbH (Enbycon Holding AG)

Address: An der Mühlenau 4, 25421 Pinneberg , Germany

Phone: +49 (0)4101/218-3011

E-Mail: Thomas.fritz@schaumann-bioenergy.eu

Website: www. schaumann-bioenergy.eu

Contact person: Thomas Fritz

Year founded: 2005

Total number of employees: 2 000

Number of employees in biogas department : <50

Active biogas offices or sales in: EU Member States,
China, USA, Brazil, Thailand

Key business area : Germany, Italy, Czech Republic, Slovakia, Great Britain, Austria, Switzerland

References:

- Number of built biogas plants: 150
- Number of performed services: 3 000
- Total built capacity of biogas plants: 40 MW
- Total serviced capacity of biogas plants: 900 MW
- Services performed in the following countries: Germany, Italy, Austria, UK, Switzerland, Slovakia, Czech Republic

What makes your service unique to the biogas industry ?

Schaumann BioEnergy is a specialist in the generation of bio-energy, from substrate preparation to fermenter biology. Our experts offer solutions for any type of system and any substrate, from agricultural renewable raw materials facilities to industrial waste recycling plants.

Services

Planner/ manufacturer of biogas plants

- *Project development/planning*
- *Arranging permitting*
- *Construction and commissioning support*
- *Full-system suppliers/turnkey plants*

Operators of biogas plants

- *Biogas plants*
- *Biomethane plants*

Manufacturer/supplier of plant components

- *Fermenters/containers*
- *Feeding, metering and weighing systems*
- *Stirring and pump systems*
- *Gas accumulators*
- *Gas cleaning, gas processing*
- *Gas analysis*
- *Control & instrumentation systems*
- *Gas control systems*
- *Fans and compressors*
- *Cogeneration units*
- *Other energy conversion technologies (e.g. ORC, fuel cells)*
- *Safety systems, monitoring and warning systems*
- *Waste treatment*
- *Process aids (e.g. enzymes)*
- *Fermentation product processing, separation systems*
- *Heat utilization*

Substrates

- *Storage, silos*

Services / consulting

- *Consulting*
- *Biomass logistics*
- *Substrate analysis/fermentation tests*
- *Fermentation product analysis*
- *Biological support*
- *Nutrient auditing*
- *Approved monitoring centers, authorized persons*
- *Computers and software for plant management*
- *Direct marketing of power*
- *Direct marketing of gas*

Science & Research

- *Power-to-gas*
- *Microbiological research*

Others

- *Training*

Address: Bayernwerk 8, 92421 Schwandorf, Germany

Phone: +49 9431 7510

E-Mail: info@schmack-biogas.com

Website: www.schmack-biogas.com

Contact person: Sabrina Kammerl; +49 9431 751 127, sabrina.kammerl@schmack-biogas.com

Year founded: 1995

Total number of employees: 373

Number of employees in biogas department: 373

Active biogas offices or sales in: Italy, USA, Germany, UK, Turkey
Representatives: France, Belgium, The Netherlands, Bulgaria, Czech Republic, Slovakia, Baltic countries, Ukraine, Norway, Sweden, Finland, Denmark, Australia, New Zealand

Key business area: Turnkey supplier of biogas technologies. Offering dry and wet anaerobic digestion solutions ranging from 50 kW_{el} to 20 MW_{gas} and providing professional support of all biogas related issues: plant design, construction and commissioning; components, gas-upgrading technology, wet and dry anaerobic digestion plants, technical services and biological support.

References:

- Number of built biogas plants: more than 400
- Total built capacity of biogas plants: more than 170 MW_{el}

What makes your service unique to the biogas industry ?

Schmack offers a wide range of technologies for digesting various input materials. Dry AD for organic waste materials, wet AD for energy crops and gas upgrading plants. The customers have the flexibility in the choice of the AD technology and can profit from the synergies between the comprehensive treatment and power generation technologies .



Institute for Biogas, Waste Management and Energy, University of Rostock

Services

Services / consulting

- *Consulting*

Science & Research

- *Pilot plant design*
- *Advisory services for research projects*
- *Biogas concepts integration development and energy system*
- *Organic waste to energy*

Others

- *Training*
- *Conference organisation and chair*

- **Address:** Henßstr. 9, D-99423 Weimar , Germany
Phone: +49 177 2885623
E-Mail: info@biogasundenergie.de
Website: www.auf-aw.uni-rostock.de/en; www.biogasundenergie.de
Contact person: Prof. Dr.-Ing. Frank Scholwin
Year founded: 2009
Total number of employees: 2
Number of employees in biogas department: 2
Active biogas offices or sales in: Germany
Key business area: Scientific services and analyses, expert advice, feasibility studies, appraisal reports and knowledge transfer/training for making more biogas usable in an efficient, flexible manner for the supply of power, heat and biomethane; to integrate biogas and other renewable energy sources into energy supply systems.

References:

- Number of performed services: > 100
- Total serviced electrical capacity of biogas (MWh): estimated annual production of serviced plants about 240 000 MWh
- Services performed in the following countries: Germany (40%), Brazil (40%), Austria (5%), Luxembourg (5%), Sweden (5%), Norway (5%)

What makes your service unique to the biogas industry ?

Deep knowledge from consulting services for biogas industry and governmental authorities as well as research is the basis for future oriented consulting activities related to technical, ecological, economical and administrative issues.

Services

Manufacturer/supplier of plant components

- *Covers, films and foils*

Address: ZI les Vallons BP 54, 38352 La Tour du Pin, France

Phone: +33 4 74 97 41 33

E-Mail: Anne-laure.robin@sergeferrari.com

Website: www.sergeferrari.com

Contact person: Anne-Laure Marie Robin

Year founded: 1974

Total number of employees: 600

Number of employees in biogas department : 10

Turnover: € 156 million

Active biogas offices or sales in: Germany, The Netherlands, Spain

Key business area: Europe, South Africa, India

What makes your service unique to the biogas industry ?

Serge Ferrari has a complete range of flexible composite membranes perfectly adapted to biogas units to maximize the profitability of the installations. Thanks to different exclusive innovations, Serge Ferrari develops membranes for inner membranes, outside membranes, gasometers, water treatment plant, with low gas permeability and efficiency against odors and 100% recyclable thanks to Taxyloop patented process.

Services

Manufacturer/supplier of plant components

- *Stirring and pump systems*

Address: Pettermandstr. 2, D-88239 Wangen / Allgäu, Germany

Phone: +49-7522-707965-0

E-Mail: info@streisal.de

Website: www.streisal.de

Contact person: Peter Starz; p.starz@streisal.de, +49-7522-707965-24

Year founded: 1988

Total number of employees: 20

Number of employees in biogas department: 10

Active biogas offices or sales in: worldwide

Key business area: Development, manufacturing and global marketing of innovative agitators and mixing systems for biogas plants, wastewater technology and industrial applications.

- submersible mixers from 1-18.5 kW (medium and slow-speed, with propeller diameters of up to 2.8 m)
- vertical agitators
- long-axis agitators
- rod agitators

References:

- Number of biogas plants equipped: > 800
- Services performed in the following countries: Germany, Austria, Netherlands, Italy, Czech Republic, UK, Switzerland, Slovakia, Spain, Poland, Luxembourg, Hungary, USA, Japan and others.

What makes your service unique to the biogas industry ?

Out of our very broad portfolio, we compile individual solutions to fulfill the desired mixing task and to reach highest energy efficiency for customer specific requirements.

Based on our many years of experience and our knowledge gained from numerous mixing experiments, we are also able to supply custom solutions for unusual problems.

Services

Science & Research

- *Research and development of innovative new technologies*
- *Process design and modeling*
- *Design, built and operation of lab scale and pilot plants*
- *Economic modeling ; CAPEX & OPEX analysis & optimization*
- *Optimization and Troubleshooting of processes*
- *Environmental Impact Analysis and Monitoring*
- *Value Chain Analysis*
- *Pilot plant operator training*

● **Address:** Leeghwaterstraat 46, 2628CA Delft, The Netherlands

Phone: +31888661324

E-Mail: info@tno.nl

Website: www.tno.nl

Contact person : Leon Stille; Leon.stille@tno.nl, +31 652 779 011 Rob Vanderstel; Rob.vanderstel@tno.nl, +31 622 992 863

Year founded: 1932

Total number of employees : 4000

Number of employees in biogas department : 50

Active biogas offices or sales in: Europe, Asia and South America

Key business area: TNO is an independent R&D institute. We specialize in applied innovative research in a broad range of fields for the benefit of society and industry. We are active in the fields of Healthy Living, Industrial Innovation, Defense & Security, Transport & Mobility, Energy, Built Environment and the Infor-

References:

- Number of built biogas plants: several pilot demonstration plants for biogas upgrading and fermentation
- Services performed in the following countries: The Netherlands, Germany, France

What makes your service unique to the biogas industry ?

TNO is working on the entire biogas value chain from biogas production, upgrading, transport, distribution and valorization. We have the necessary infrastructure and modeling capabilities. Combined with in-house experience and expertise TNO provides a development and support platform for independent research and technology development from lab to pilot to demonstration.

Services

Planner/ manufacturer of biogas plants

- *Project development/planning*
- *Arranging permitting*
- *Construction and commissioning support*

Operator of biogas plants

- *Biogas plant*

Address: Box 176, SE-10123 Stockholm, Sweden

Phone: +46 (0)8 21 47 40

E-Mail: info@vireoenergy.se

Website: www.vireoenergy.se

Contact person: Anna Aldén; +46707977534,
anna.alden@vireoenergy.se

Year founded: 2010

Total number of employees : 40

Number of employees in biogas department : 20

Active biogas offices or sales in: Poland, Belarus and Russia

Key business area: Building, owning and operating Landfill and anaerobic biogas projects in Central and Eastern Europe.

References:

- Number of built biogas plants: 10
- Total built electrical capacity of biogas plants: 8 MW

What makes your service unique to the biogas industry ?

Vireo Energy is a Swedish company investing in Biogas production in Eastern Europe and applying Western European operating standards to the local business environment. Vireo Energy develops, builds and operates a number of landfill and AD biogas plants in CEE markets such as Poland, Romania, Belarus and Russia

Services

Manufacturer/supplier of plant components

- *Stirring and pump systems*
- *Gas Analysis*
- *Heating pipes*
- *Waste treatment*

Address: Gesällvägen 33 , 17487 Sundbyberg, Sweden

Phone: +46 (0) 8 4756-000

E-Mail: info@xyleminc.com

Website: www.xyleminc.com

Contact person: Eilert Balssten; eilert.balssten@xyleminc.com;
+49 511 7800-193

Year founded: 1956

Total number of employees: 12 500

Turnover: € 3.04 billion

Active biogas offices or sales in: worldwide

Advantages for members

Policy

- *Make your voice heard in Brussels*
- *Represent your company's interest at the EU level*

Information exchange

- *First hand news on activities in the biogas sector and the EU policies*
- *Biogas conferences & workshops*

Publications and studies

- *Biogas Report*
- *Country Profiles*
- *Success stories*
- *In-depth analysis of National Renewable Action Plans*

Company Advisory Council (CAC)

- *Exchange on market experience and technological developments*
- *EBA Pavilion for companies at trade fairs and exhibitions*

Projects

- *FAB Biogas*
- *GreenGasGrids*
- *European Sustainable Biofuels Forum*
- *BIOSURF*

Events

- *EBA Conference*
- *Thematic Workshops*

Address: Rue d'Arlon 63-65, 1040 Brussels, Belgium

Phone: +32 24 00 10 -87 or -88

E-Mail: info@european-biogas.eu

Website: www.european-biogas.eu

Year founded: 2009

Objective: EBA promotes the deployment of sustainable biogas production and use in Europe. This covers all energetic applications of biogas : heat, electricity and automotive fuel.

Members: Starting with 11 founding members - all national associations - EBA has been growing steadily. By now, over 65 companies, national biogas and bioenergy associations, research institutes and universities have become member of EBA.

Why join EBA?

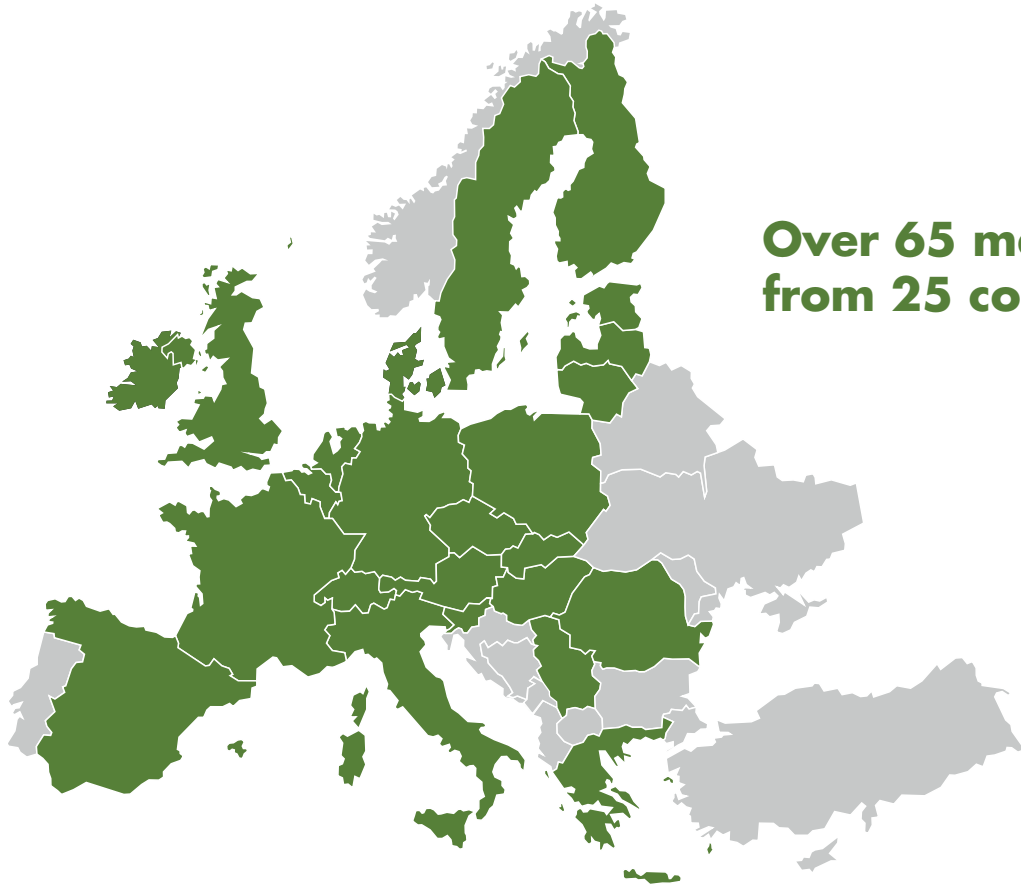
Members of EBA are at the forefront of biogas development in Europe. EBA aims at improving European and national legislation related to biogas. National associations as well as companies benefit from these improved legal frameworks, that support market growth for biogas related technologies and services.

Associated Members of EBA



Biogas is our motivation





**Over 65 members
from 25 countries**

Become a member and make your company visible in the catalogue!



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