



BTS[®]

**BIOLOGY, BIOLOGICAL CONSULTANCY,
TECHNICAL ASSISTANCE, AND AUTOMATION**



BTS Biogas, an Italian company with 25 years' experience in the field of anaerobic digestion, provides reliable high-performance technological solutions for the biogas and biomethane market.



SYNERGY AND ENERGY

We look to the future and we do not do it alone



BTS Biogas, a pioneer in the anaerobic digestion industry, with over 250 plants created worldwide, has established itself at a global scale in the development, planning, construction, and maintenance of biogas and biomethane plants.

In 2019, the company was acquired by Bioenergy Devco LLC, a leading US company in the development of anaerobic digestion facilities, with an important portfolio of biogas and biomethane plants under development and construction.

According to the estimates of the United States Department of Energy and of the United States Environmental Protection Agency, the US biogas and biomethane market could lead to the production of over 100 trillion kWhel every year, preventing CO₂ emissions, equivalent to those produced by 117 million vehicles,

with investments of 45 billion dollars and the creation of over 400,000 jobs.

By taking advantage of the scraps and organic waste from breeders, farms, and food industries, **BTS Biogas contributes to the process of energy transition towards a circular economy** involving the production of biomethane, electricity and heat, soil amendments and fertilizers for agriculture, and carbon dioxide for food or industrial use.

To strengthen its presence on the global market and provide support to biogas plants, in 2015, BTS opened two offices - one in the United Kingdom, the other in France. In 2021, it also opened a branch in the United States.



SERVICES

BTS Biogas has always been able to guarantee the **continuous operation** of plants by **minimizing service time** and keeping a plentiful supply of **spare parts in stock**.

BTS Biogas guarantees service on all plants, whether their own or those of other manufacturers, and works constantly on **improving and developing innovative solutions**.

Its **activities** and **services** are aimed at monitoring, ensuring, and maximizing the output of biogas plants. It is **essential to keep a plant in good shape**, with regular service visits and constant monitoring to guarantee the desired level of production.

The daily challenge of BTS Biogas is to maintain premium plant reliability, reduce service time to a minimum, and guarantee profitability and competitiveness.



Biology



Technical support



Automation

BIOLOGY

METAN^{lab} - An ideal partner for those working in the biogas industry

Beginning to produce biogas after starting up the plant is just the first step. In fact, to achieve the desired targets, it's necessary to continuously monitor the bacteria produced in the digester.

It was precisely with this intent that almost 15 years ago, BTS Biogas set up **METAN^{lab}**, the first privately-owned laboratory devoted entirely to biogas, in which highly specialized staff carry out **research, innovation, and development** activities to guarantee the optimization of seeds, harvests, and silage, and the biochemical operation of over 150 biogas plants, including those manufactured by other industry players.

Following scientific methods, **METAN^{lab}** carries out over **170,000 tests per year**, also gathering **empirical data** describing the production processes and biogas yields in different conditions. These data enable BTS Biogas to constantly improve the design and management of the plants and our laboratory can thus be considered an **ideal partner** for those working in the biogas and biomethane industry.

The laboratory uses the best chemical analysis instruments and machinery to monitor and test the process variables **with the primary goal of improving performance and yield**.

Using the latest technology, **biologists** test all of the variables, monitor performance, process the data gathered, and **provide increasingly innovative solutions to maximize production**.

The laboratory staff works constantly to **ensure the best possible environment** and the **correct nutrition formula** for all the families of bacteria that produce biogas.

BTS Biogas provides the option of managing the plant with the help of **dinaMETAN**: an IT support service, which, by integrating a very large number of variables, enables you to achieve the plant's maximum biological and economic efficiency.

ADDITIVES RECOMMENDED BY METAN^{lab}

DESULFURIZATION



IRON MAX3
Iron hydroxide



IRON MAX
Iron chloride

ENZYMES



VISCOPRACT
Product adapted to emergency cases with floating layers



METHAPRACT
An enzymatic product for maintenance



ULTRAPRACT
An enzymatic product especially for use with high-protein rations

MICRO AND MACRO ELEMENTS



FOR MANURE BIOGAS PLANTS
Specific mixture for plants fed with high percentages of manure (pig, bovine)



FOR SILAGE BIOGAS PLANTS
Specific mixture for plants fed with high percentages of silage



FOR POULTRY MANURE BIOGAS PLANTS
Specific mixture for plants fed with high percentages of hen/boiler manure



FOR ORGANIC WASTE BIOGAS PLANTS
Specific mixture for plants fed with high percentages of organic waste

BIOLOGICAL CONSULTANCY

When and why it's required

The **experience** and **know-how** BTS Biogas has gained in the field of anaerobic digestion allow it to confirm that **monitoring** the biogas plant is fundamental for achieving the desired results.

Whether it's a BTS Biogas plant, or a **plant built using other technologies**, the company can support the supervisor in stabilizing production and improving efficiency by providing innovative ideas and expert solutions while lowering the feeding costs.

It's a job carried out by our staff — made up of microbiologists, biotechnicians, and agronomists — together with the client, which begins with the collection of the information required to assess the condition of the plant and continues with the drafting of a **detailed report** and the relevant service options, **based solely on real needs**.

Biological consultancy is useful when:

- **The biogas production is fluctuating;**
- **There is a noticeable change in the characteristics of the digestate (too runny or too solid);**
- **The quality or quantity of produced biogas changes;**
- **The amount of biomass needed to achieve the same output increases.**



RESEARCH AND INNOVATION

When it comes to supporting new research and innovation projects, BTS Biogas is always at the forefront. Over the years, we've established various **collaborations with the most prestigious universities and institutions** working in the renewable energy sector to improve the quality of the products and services provided.

Among its various initiatives, BTS Biogas is particularly proud of having successfully taken part in the **Cariverona Foundation's "Research and Development 2020"** tender bid, aimed at supporting the activities of two young researchers, who will be working to develop a microbiome **monitoring system** to provide innovative solutions for maximizing biogas production.

The partners in this initiative are the **University of Padua (DAFNAE and DiBIO)** and **S&C BEST Srl**.

The challenge is to **promote productive dialogue between research and business**, nurturing talent and, at the same time, **creating opportunities for the younger generations**, as a fair and balanced economic system can generate new employment, wellbeing, and social cohesion.

We are always looking ahead: **investing resources** is the only way to **ensure a sustainable future** for the new generations.





TECHNICAL ASSISTANCE

With a surface area of over 3,500 m² located in Italy, France, the United States, and the United Kingdom and 10,000 spare parts in stock, the BTS Biogas service centers can not only guarantee quick service 365 days a year but also enable the reduction of machine downtime caused by any emergencies.

The availability of technicians and technical components 24/7 ensures that any potential problems are **swiftly solved** and that **output is kept constant**. Quick service and regular planning of plant maintenance help you to uphold consistently high production standards.

In 2019, plants serviced by BTS Biogas operated with an **average output of 98%**, working for more than 8,590 hours per year. This figure demonstrates the high operational reliability resulting from the experience gained in **over 25 years of promptly handling** maintenance and service requests. In 2020, assistance was guaranteed for over 33,000 hours globally.

BTS Biogas guarantees safe field service in compliance with regulations and is supported remotely by the **monitoring systems** installed in our plants, which enable us to detect output, yield, and any anomalies.

**Plant monitoring 24 hours,
7 days a week**



Alarm management



Service register editing





REVAMPING

With a wealth of experience, both in the **construction** and after-sales **service** of biogas plants, BTS Biogas is able to provide **all-round solutions** (technical assistance, automation, and biological consultancy) to lead your **plant into a long and productive future**.

BTS Biogas is in. Are you?

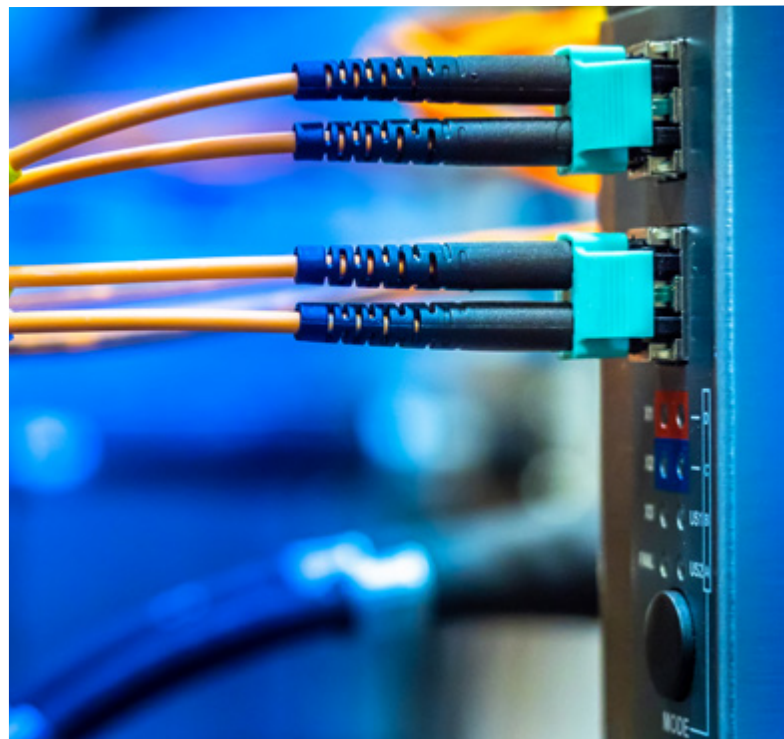
- **Biological consultancy** to modify the rations from primary to secondary biomass and use by-products
- **Pre and post-treatments** for all needs (mechanical biomass treatments, nitrogen management, digestate management)

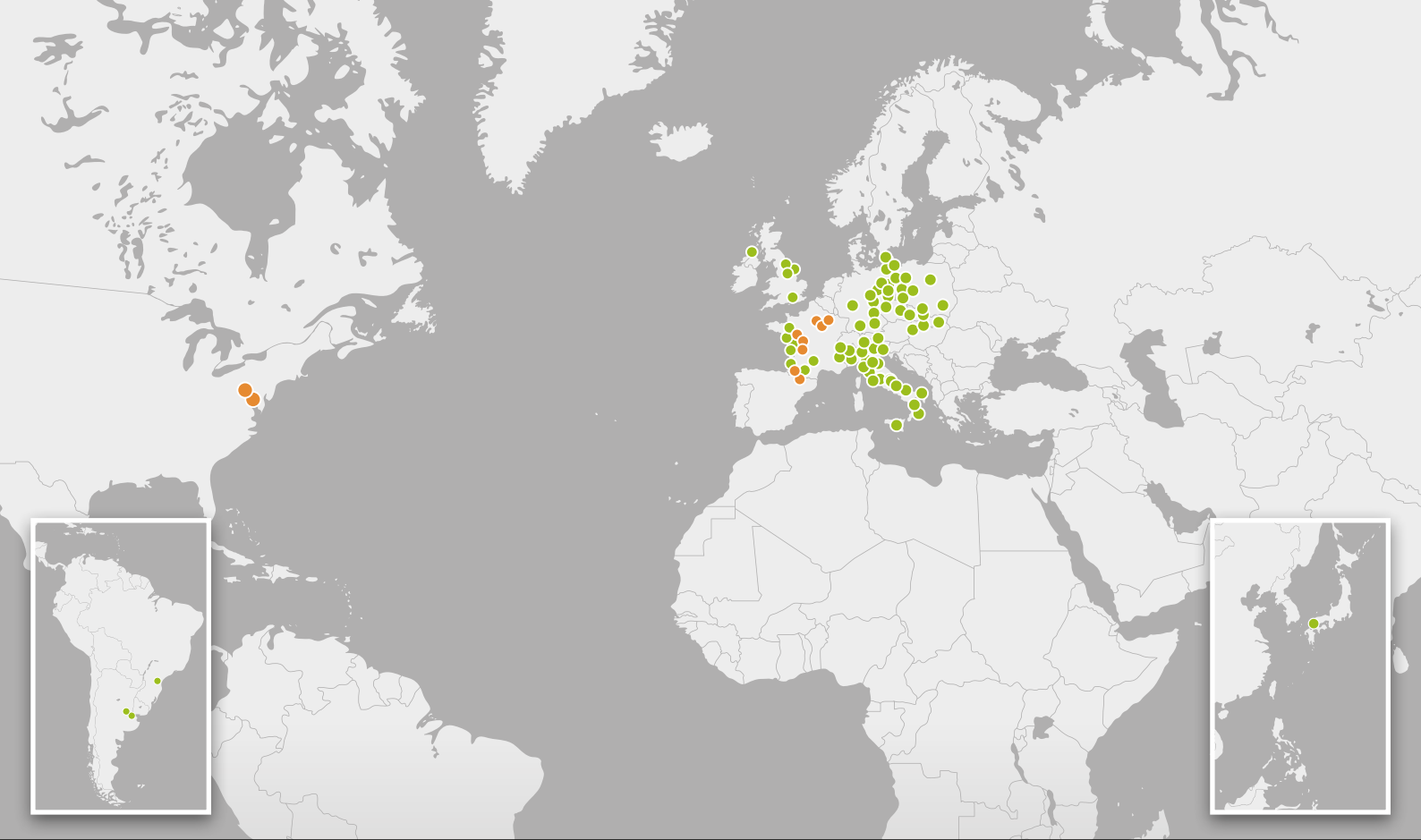
AUTOMATION

All plants covered by a service contract are **constantly monitored remotely**. This activity is carried out in accordance with precise standards of priority and seriousness, using a ticketing system that allocates service orders to the various departments.

Anomalies and alarms are managed with specific **service procedures** directly on-site or remotely.

The **Automation** department, in collaboration with the **Research & Development** and **Biology** departments, is constantly fine-tuning the plant software.





Today, BTS Biogas employs over **100 people**, distributed between the headquarters in Affi (Verona), the office in Bruneck (Bolzano), and its companies in France, the UK, and the USA.



5 locations

IT - FR - UK - USA



25.000 smq

Warehouse and Logistic Center

METAN^{lab}

2.000 smq

Laboratory



250+

Plants worldwide



29

International patents



170.000+

Tests carried out per year



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