



## CORPORATE BROCHURE



**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.**

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 CO<sub>2</sub> 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.



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

**METANlab**

**2.000 smq**

Laboratory



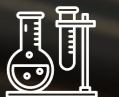
**250+**

Plants worldwide



**29**

International patents



**170.000+**

Tests carried out per year

## SYNERGY & ENERGY

We look towards the future and we do not do it alone.



## INVEST IN THE MARKET

BTS Biogas invests in the renewable energy market and provides its partners with the **resources, experience, and skills acquired in over 25 years of business** to create new projects.



DEVELOPMENT AND PARTICIPATION IN PROJECTS



ACQUISITION OF INSTALLATIONS IN OPERATION



STRATEGIC PARTNERSHIPS

Thanks to the experience and skills acquired, with 29 international patents obtained and over 250 plants built, today, BTS Biogas is one of the leading international players in the field of anaerobic digestion.

The BTS Biogas strategy is implemented in the following activities:

## BUILDING

The company designs and builds anaerobic digestion plants to take advantage of the scraps, by-products, and organic waste of breeders, farms, and food industries.

## DEVELOPING TECHNOLOGY

Constantly pursuing process and product **efficiency and innovation**, BTS plants are designed and built based on the specific requirements of customers, and the projects and adopted solutions guarantee the highest levels of quality and reliability and the maximum biogas output.

The pre-treatment and post-treatment systems enable any type of biomass to be utilized, providing ideal solutions for each specific project.

## PROVIDING SUPPORT

To maintain the desired level of production and ensure optimal plant operation, it's important to activate a **constant control and maintenance system**.

BTS Biogas guarantees **support for the operation** of anaerobic digesters, performance monitoring, and increasingly innovative solutions to improve output and prevent machine downtime, attending to its own constructed plants and to other technologies.

The support services cover all operational areas of the plant:

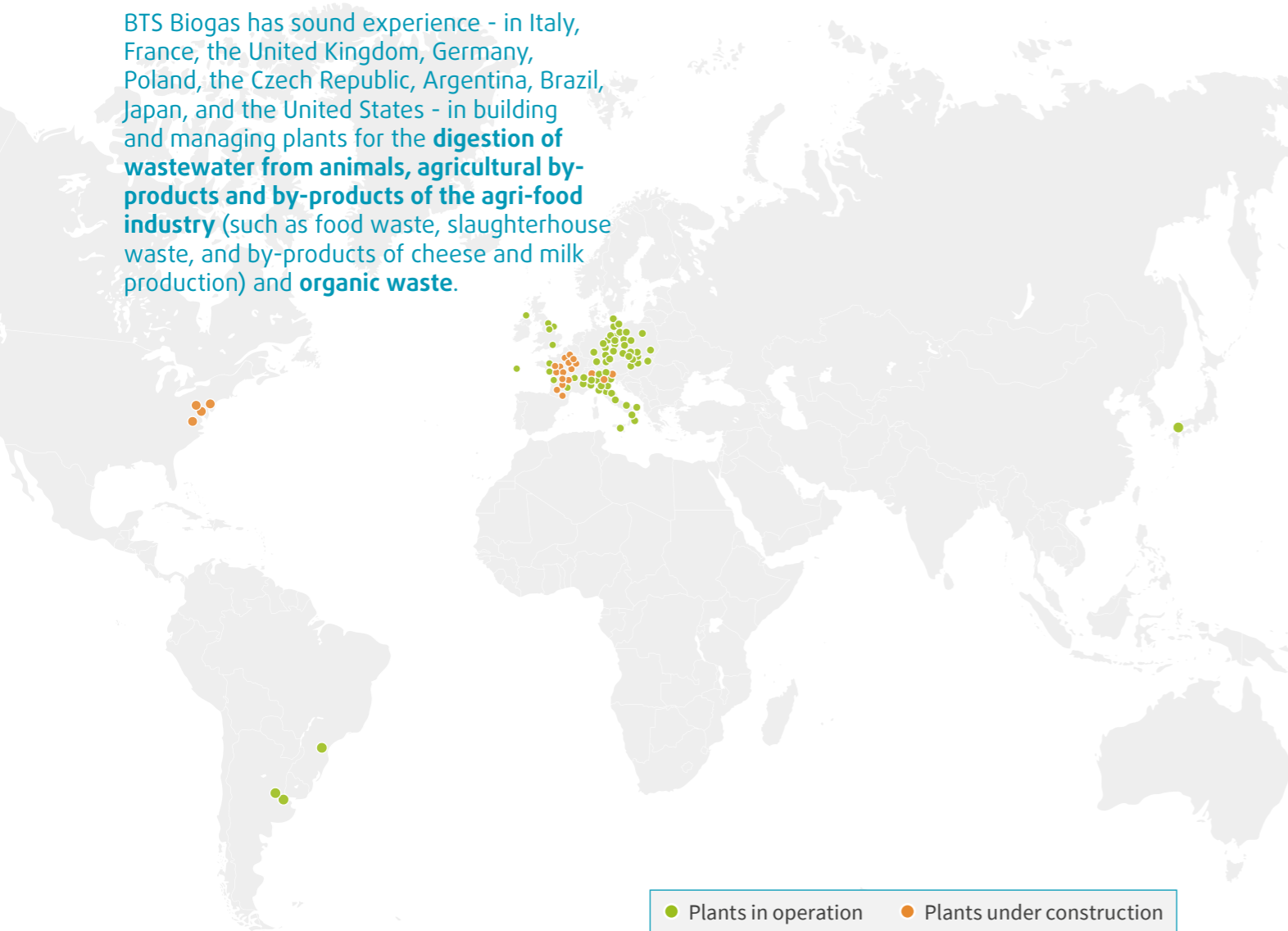
**BIOLOGY | TECHNICAL SUPPORT | AUTOMATION**

The company's daily challenge is to guarantee premium plant reliability, reduce downtime to a minimum, and ensure the best possible return on the investments made.



## MARKET PRESENCE

BTS Biogas has sound experience - in Italy, France, the United Kingdom, Germany, Poland, the Czech Republic, Argentina, Brazil, Japan, and the United States - in building and managing plants for the **digestion of wastewater from animals, agricultural by-products and by-products of the agri-food industry** (such as food waste, slaughterhouse waste, and by-products of cheese and milk production) and **organic waste**.

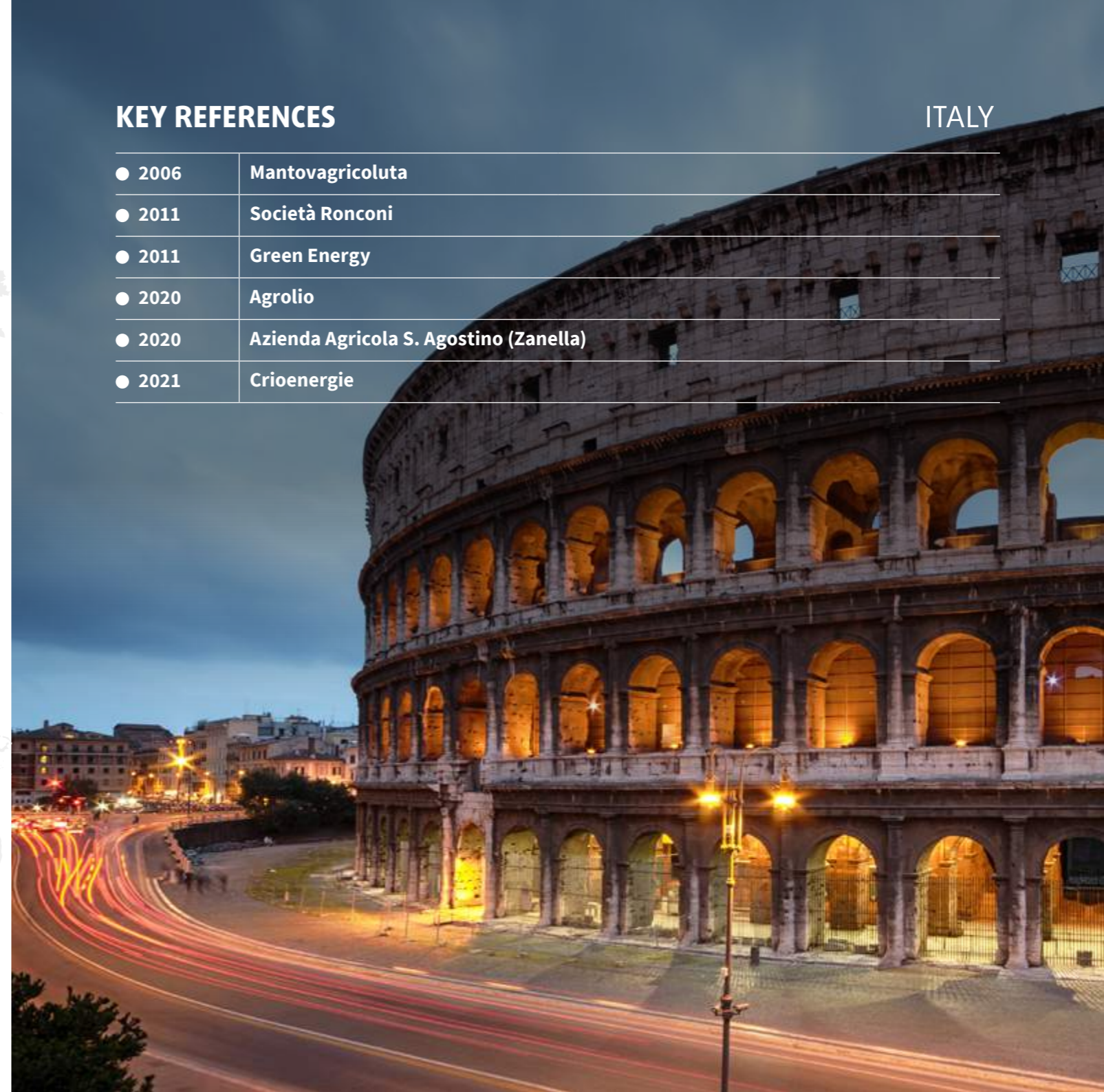


● Plants in operation ● Plants under construction

## KEY REFERENCES

ITALY

● 2006	Mantovagricoluta
● 2011	Società Ronconi
● 2011	Green Energy
● 2020	Agrolio
● 2020	Azienda Agricola S. Agostino (Zanella)
● 2021	Crioenergie



# MANTOVAGRICOLTURA



● 2006

Rodigo (MN)

Plant size: 999 kWel/h

## SUBSTRATE

Plant biomass, slaughterhouse waste (Regulation (EC) 1069/2009 and subsequent amendments and additions), and organic waste (Italian Legislative Decree 152/06)



## DESCRIPTION

The biogas plant is made up of two pre-treatment tanks with roof slabs, a loading system for shovelable substances, two fermenters, a post-fermenter, and a storage tank. The waste is ground and then sterilized before being sent for anaerobic digestion. The digestate produced is classified as organic fertilizer.



### USE OF BIOGAS

Production of electricity and heat



### EXPLOITATION OF HEAT ENERGY

Used in slaughterhouse waste and organic waste pre-treatment



### USE OF DIGESTATE

Exploited as organic fertilizer

# SOCIETÀ AGRICOLA RONCONI



● 2011

Marmirolo (MN)

Plant size: 999 kWel/h

## SUBSTRATE

Pig slurry, plant biomass, slaughterhouse waste (Regulation (EC) 1069/2009 and subsequent amendments and additions), and organic waste (Italian Legislative Decree 152/06)



## DESCRIPTION

The plant is excellent for processing large quantities of agricultural by-products and is fueled with manure from one of the leading pig farms in northern Italy. A piping system continuously conveys the slurry to the fermenters.



### USE OF BIOGAS

Production of electricity and heat



### EXPLOITATION OF HEAT ENERGY

Used in the fermenters



### USE OF DIGESTATE

Exploited as organic fertilizer

## GREEN ENERGY



2011

Chiari (BS)

Plant size: 999 kWel

### SUBSTRATE

Pig slurry, dry poultry manure, corn silage, ryegrass silage, hen manure



### DESCRIPTION

Michele and Stefano Gibellini Agribusiness, active in pig breeding.

The peculiarity of this plant is its ability to manage critical issues related to the exploitation of poultry manure, thanks to **pre-treatment** (sand removal) and **post-treatment** (nitrogen reduction in the digestate) systems developed using BTS Biogas technology.



### USE OF BIOGAS

Production of electricity and heat



### EXPLOITATION OF HEAT ENERGY

The heat is used to power a dryer to dry and enhance the solid component of the digestate.



### USE OF DIGESTATE

It re-enters the plant cycle through its dispersal in the fields.

## AGROLIO



2020

Andria (BT)

Plant size: 500 kWel

### SUBSTRATE

100% olive pomace



### DESCRIPTION

Agresti family business, active in olive oil production.

The uniqueness of the plant lies in its being one of the first in Europe to be 100% fueled with the organic material resulting from olive pressing and, therefore, in its ability to handle the pomace anaerobic fermentation process. The efficiency and functionality of the plant are guaranteed by constant surveys and innovative solutions to enable the optimal "digestion" of olive oil production waste.



### USE OF BIOGAS

Production of electricity and heat



### USE OF DIGESTATE

It re-enters the olive plant production cycle, helping to improve quality and quantity.

# AZIENDA AGRICOLA S. AGOSTINO



● 2020

Casaloldo (MN)

Plant size: 100 kWel

## SUBSTRATE

100% slurry and manure



## DESCRIPTION

Zanella family business, dedicated to agriculture and cattle breeding.

A small 100 kW plant, fueled only by animal waste. During planning, it was necessary to build a customized plant to take advantage of the little space available and exploit two existing storage tanks.



## USE OF BIOGAS

Production of electricity and heat



## USE OF DIGESTATE

It re-enters the agricultural production plant cycle, helping to improve the quality and quantity.

# SOCIETÀ AGRICOLA CRIOENERGIE



● 2020

Marcon (VE)

Plant size: 635 Nm<sup>3</sup>/h biomethane

## SUBSTRATE

Animal manure, agricultural and agri-food industry by-products



## DESCRIPTION

The leading plant in Veneto for the production of liquid biomethane from by-products (approximately 50,000 tons per year) and CO<sub>2</sub> recovery, certified for agrifood use. Thanks to a pasteurization system, the plant can also take advantage of agricultural industry by-products, such as milk whey, meat processing waste, and egg pasta scraps.



## USE OF BIOGAS

Production of liquid biomethane (approximately 500 kg/h)



## EXPLOITATION OF HEAT ENERGY

The upgrading system produces heat energy that is used to heat the fermenters and in the pasteurization process.



## USE OF DIGESTATE

Exploited as organic fertilizer

## KEY REFERENCE

● 2013 JVA Bernau Biogasanlage

GERMANY

## JVA BERNAU BIOGASANLAGE



● 2013 Bernau

Plant size: 190 kWel

### SUBSTRATE

Grass silage, cow manure, pig manure, corn silage



### DESCRIPTION

A virtuous story from a social and environmental point of view, where the commitment of people on the one hand and the exploitation of organic materials on the other generates a synergy of real sustainability. More than 200 inmates, who helped build and implement the biogas plant and the agricultural business, are brought together with the prison staff by a common goal in keeping with the requirements of the prison facility and budget.

Since its activation, the plant has brought to life an example of a virtuous circular economy, contributing significantly to the reduced consumption of fuel for heating. Most of the electricity produced is used by the facility itself and only the excess is fed back into the grid.



#### USE OF BIOGAS

Production of electricity and heat



#### USE OF DIGESTATE

It re-enters the agricultural production plant cycle, helping to improve quality and quantity.





## KEY REFERENCES

- 2016 South Mildford
- 2016 Ridge Road

## UNITED KINGDOM

## SOUTH MILFORD



- 2016 South Mildford, Leeds (UK)

Plant size: 500 kWel/h + 550 Sm<sup>3</sup>/h biomethane

### SUBSTRATE

100% organic waste and industrial food processing scraps



### DESCRIPTION

The plant is designed to receive 60,000 tons per year of food waste and grass clippings. After the pre-treatment modules and anaerobic digestion fermenters, a membrane purification system was engineered, enabling the transformation of biogas into biomethane and its direct input into the national gas network. This allows the produced biogas to be exploited with the maximum efficiency and CO<sub>2</sub> emissions to be minimized.

### USE OF BIOGAS



Production of electricity  
Upgrading and production of biomethane fed directly into the grid



### EXPLOITATION OF HEAT ENERGY

Heating of fermentation tanks  
Upgrading units and pasteurization system



### USE OF DIGESTATE

Production of 50,000 t/year of pasteurized liquid fertilizer

# RIDGE ROAD



● 2016

Micklefield, Leeds (UK)

Plant size: 360 kWel + 5.200.000 Sm<sup>3</sup> CH<sub>4</sub>/year

## SUBSTRATE

Poultry manure, ryegrass and dedicated crops, beetroot



## DESCRIPTION

The plant was designed to produce electricity and biomethane, using poultry manure, scraps, and by-products.



### USE OF BIOGAS

Production of electricity  
Biomethane: fed into the national network



### EXPLOITATION OF HEAT ENERGY

Fermenters  
Upgrading



### USE OF DIGESTATE

Exploited in the fields as a liquid fertiliser

## KEY REFERENCES

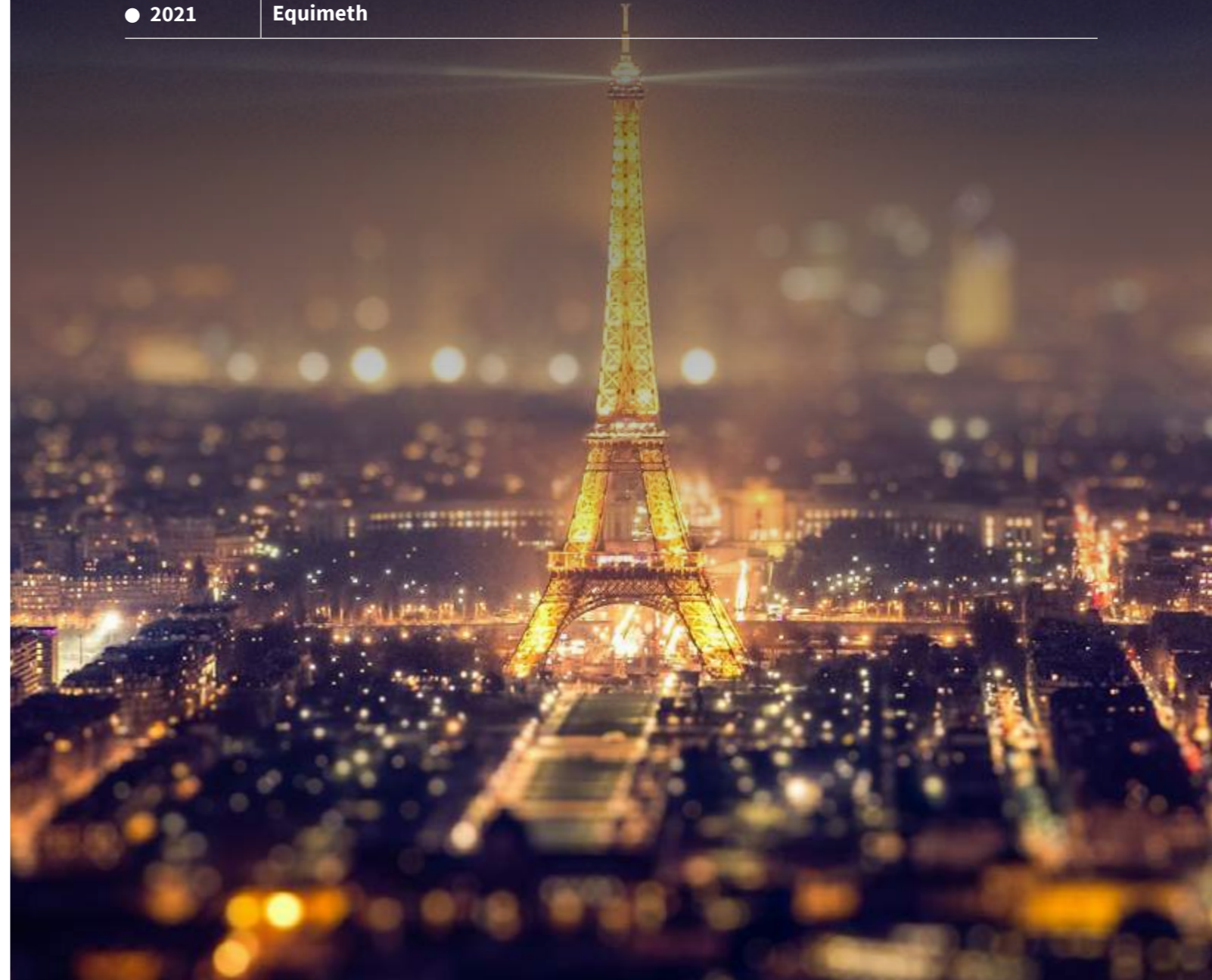
FRANCE

● 2015

Demeter Energie

● 2021

Equimeth



2015

Mauzé-sur-le-Mignon

Plant size: 499 kWel

## SUBSTRATE

Manure, slurry, intermediate crops for energy recovery (CIVE), cereals



## DESCRIPTION

Today, the plant brings together in its capital local breeders (of dairy cattle, beef cattle, and goats) and large regional players in the agricultural and renewable energy sector (cooperatives and energy union). In addition to a desire to contribute to the territory's energy transition, this initiative was created to address the new French agricultural landscape, which requires that farmers reconsider their production methods and, above all, diversify them to keep the industry alive. Specifically, this plant enables the effluents of 12 farms in the surrounding area (less than 8 km from the methanation unit) to be treated and converted into electricity, heat, and natural fertilizer.



### USE OF BIOGAS

Production of electricity, heat, and fertilizer



### EXPLOITATION OF HEAT ENERGY

The excess of 1,500 MWh is channeled into a heating network built by Demeter Energies in Mauzé-sur-le-Mignon. This heat saves tons of gas for the local secondary school, litres of fuel for the swimming pool, municipal buildings and corn and alfalfa dryers.



### USE OF DIGESTATE

Exploited as organic fertilizer

2021

Moret-Loing-et-Orvanne

Plant size: 250 Nm<sup>3</sup>/h di biomethane

## SUBSTRATE

25,000 tons of organic matter per year



## DESCRIPTION

One of the most important biological waste recovery units in this area, it produces biogas from manure, agricultural waste, and food industry waste.

The Fontainebleau region, where the plant is located, is well known for its equestrian tradition. The relocation of nearby mushroom farms, which were historically the main recipients of the manure, led to the need to think of alternative ways to recycle this biomass and this became an opportunity to develop the Equimeth project.



### USE OF BIOGAS

Fed into the national GRDF network



### USE OF DIGESTATE

Exploited as organic fertilizer

Equimeth has the advantage of being able to supply various municipalities in the area (Moret-Loing-et-Orvanne, Fontainebleau, Saint-Mammès, Avon, Thomery, or Champagne-sur-Seine) up to 15% of the gas consumption of the inhabitants of these towns and to treat most of the area's biological waste through pasteurization.

Plant's production is equivalent to the annual gas consumption of 1,350 families and will prevent the emission of nearly 7,200 tons of CO<sub>2</sub>-eq per year.

## KEY REFERENCES

- 2021 MFCA
- 2021 BIC

USA

## MARYLAND FOOD CENTER AUTHORITY (MFCA)



- 2021 Jessup, MD

Plant size: 1.600 m<sup>3</sup>/h biogas + 1,2 MWeI

### SUBSTRATE

125.000 tons/year of food waste, FOG and other organic waste



### DESCRIPTION

The plant is located at the Maryland Food Center, home to one of the region's largest agri-food industrial and logistics zones, and is capable of processing up to 125,000 tons/year of organic by-products (fruit and vegetable processing waste, meat, bakery products, oil and fats, etc.) and wastewater from the food industry.

### USE OF BIOGAS



Production of biomethane for feeding into the grid and for transport. The plant produces enough biomethane to meet the needs of 4,800 homes

### EXPLOITATION OF HEAT ENERGY



The thermal energy produced is used to heat the digesters and the surplus is sold to third parties

### USE OF DIGESTATE



Nitrogen recovery and water purification using semi-permeable membrane technology, reuse of part of the purified water in industrial processes

# BIOENERGY INNOVATION CENTER (BIC)



2021

Seaford, DE

Plant size: 1.600 m<sup>3</sup>/h biogas



### DESCRIPTION

Bioenergy Innovation Center (BIC) currently operates a composting plant, selling this organic product throughout the region. The addition of an anaerobic digestion plant improves the valorisation of by-products and wastes from the poultry industry, allowing the production of biomethane and quality digestate that can be used as a soil conditioner.



### USE OF BIOGAS

Transfer to the local municipal company



### EXPLOITATION OF HEAT ENERGY

The thermal energy produced is used to heat the digesters and to post-treat the digestate



### USE OF DIGESTATE

Organic compost is sold as an excellent organic soil conditioner



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