SEBIGAS

Lean and Green

Company profile

About us

SEBIGAS is an Italian company with many years' experience in the international market field, designing, constructing and managing anaerobic digestion plants for the production of biogas for energy purposes. The company's growth has been marked by both the execution of a large number of projects and by a constant focus on research and development, allowing us to acquire increasingly specific skills in relation to diverse and complex matrices.
SEBIGAS has an ongoing commitment to providing practical solutions that contribute to the process of energy transition and decarbonisation. We offer a virtuous and sustainable way of transforming waste into resources, contributing to today's needs to safeguard our planet, while also developing new solutions for tomorrow.

Our history

2008
SEBIGAS was established as a business venture, aimed at meeting the growing interest in agricultural biogas in Italy.

2009
SEBIGAS became part of S.E.C.I. Energia, consolidating its presence in Italy.

2012
With the Italian biogas market continuing to grow strongly, SEBIGAS became a reference point in the industry, constructing 37 plants in a single year.

2013
SEBIGAS began its process of internationalisation by signing a joint venture with SEBIGAS UAC and constructing two plants in Thailand.

2014
This expansion into global markets continued with the establishment of SEBIGAS do Brasil, and the development of specific skills for the treatment of biomass for the sugar and bioethanol production industry. AGRIPOWER was created as a spin-off of SEBIGAS, to provide a prompt and efficient plant management and maintenance service.

2015
SEBIGAS became a division of EXERGY, a company in the S.E.C.I. Energia Group operating in the renewable energy sector.

2018
SEBIGAS regained its independence within the S.E.C.I Energia Group, continuing its process of growth in the European market. The joint venture company SEBIGAS COTICA was set up in Brazil, and plants were put into operation in Greece, Belgium and France, using agro-industrial matrices.

2019
SEBIGAS set up Maserati Energia, its first OFMSW biomethane production plant.

2020
SEBIGAS joined the TICA group, a well-established multinational based in China, offering new opportunities for growth in international markets.

2022
The Nanjing Sebigas RET Co., Ltd branch was set up, to promote development in Asian markets.

Vision and values

A “Lean and Green” approach applied to the anaerobic digestion technology. A methodology chosen for improving efficiency and performances in the plant, while transferring value and boosting sustainability.

We strive every day to be a recognised partner in the supply of innovative and sustainable solutions. Our goal is to guide the customers towards a project aimed at enhancing the circular economy and reducing the environmental impact of business operations.

TEAMWORK

INNOVATION

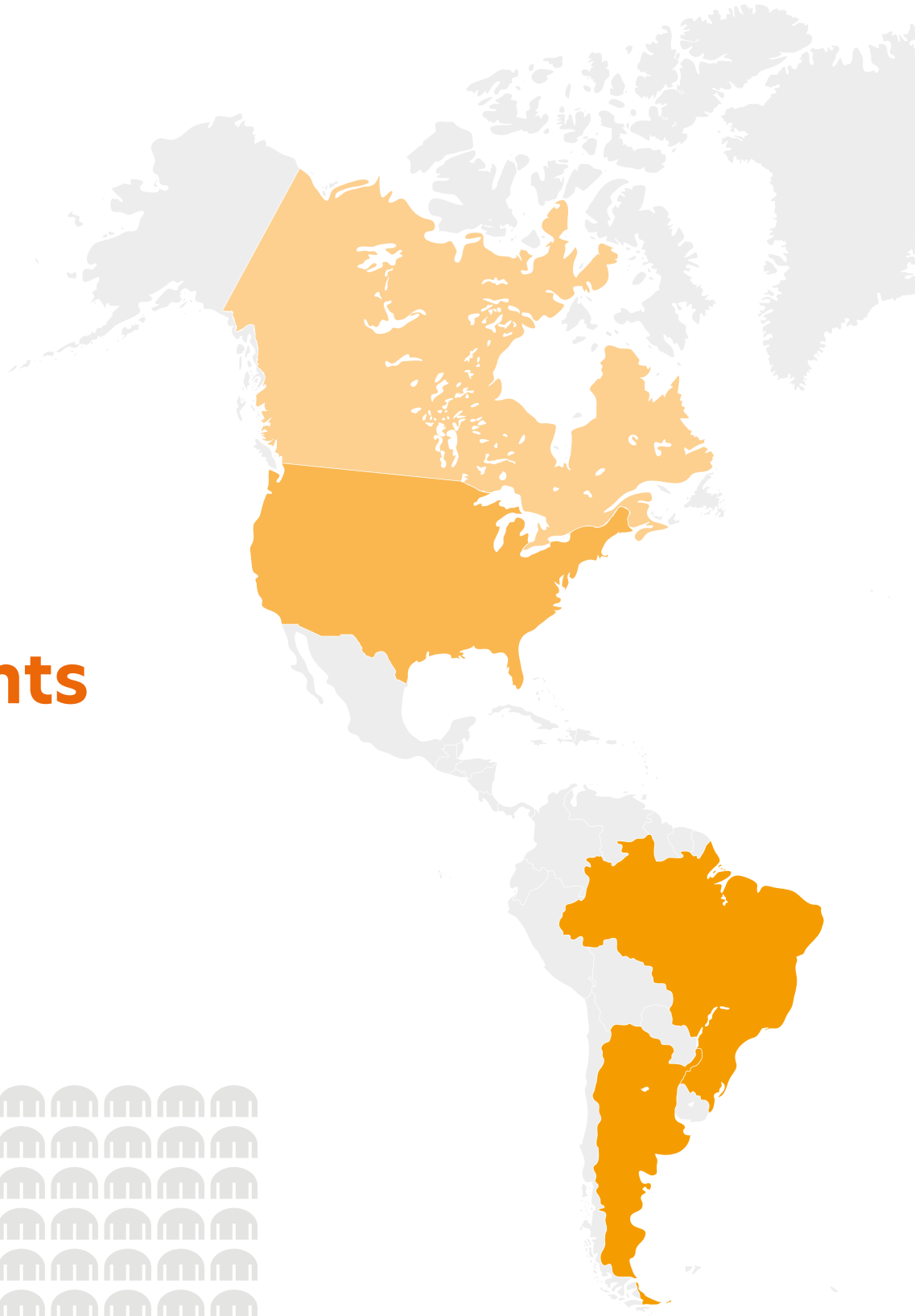
CUSTOMER FOCUS

RESPONSIBILITY

QUALITY

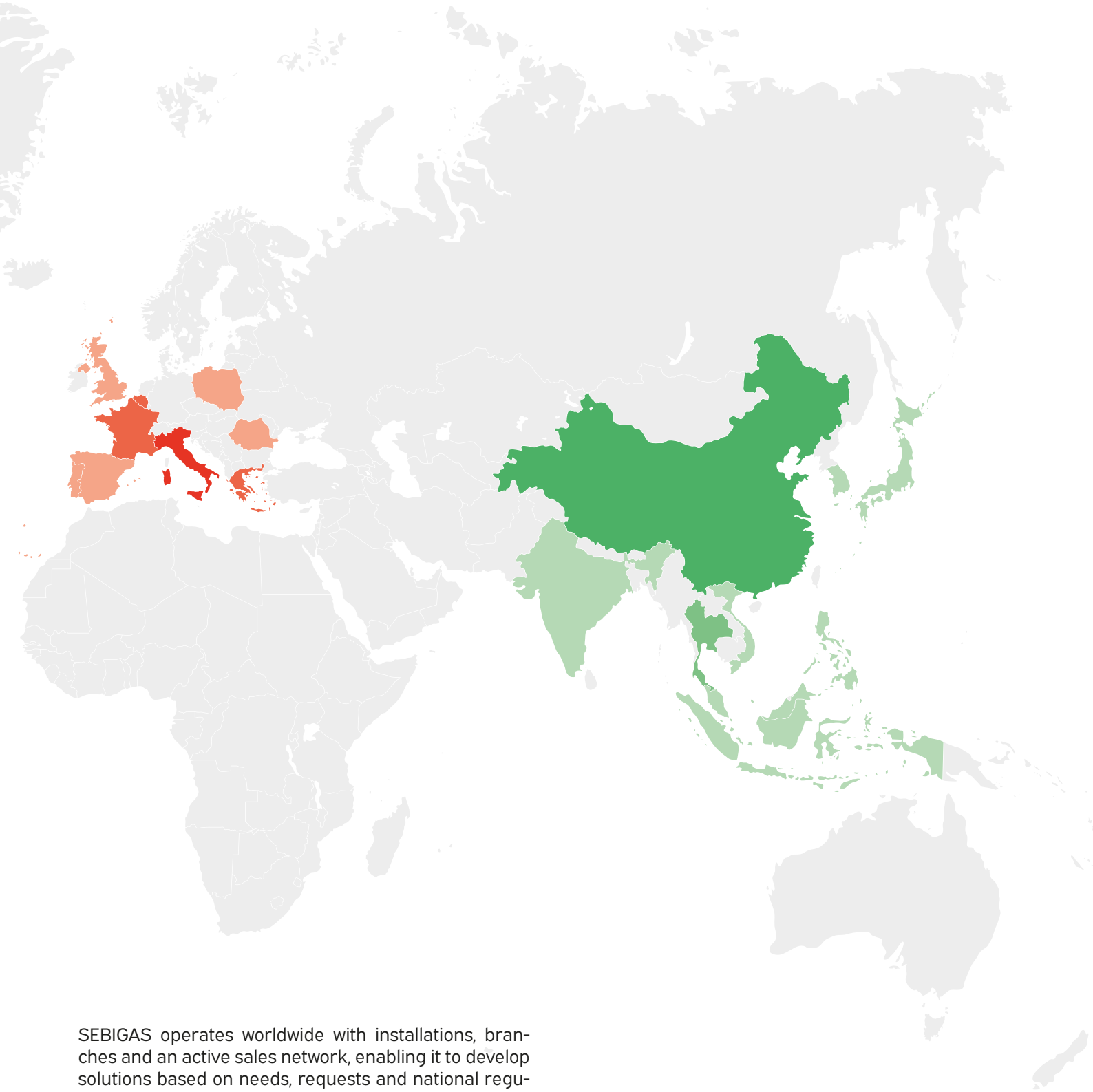
COMMITTMENT

Presence on international markets



3
continents

84
plants



SEBIGAS operates worldwide with installations, branches and an active sales network, enabling it to develop solutions based on needs, requests and national regulations. SEBIGAS has proven expertise in European, American and Asian Countries, demonstrating its ability to develop flexible solutions for every different setting, and for the many areas of application of anaerobic digestion.

A sustainable solution

We are committed in providing solutions that contribute to the energy transition process. Our technology allows companies to play a part in the fight against climate change, by making their businesses more sustainable and embracing the circular economy.

At SEBIGAS, we firmly believe in the importance of capturing and transforming waste into an added value and opportunity. We are constantly renewing our commitment to ensure that our projects are seen as a genuine example of circular economy with the production of renewable energy.

All of us are being called upon to adopt more mindful and sustainable behaviour: THE FUTURE DEPENDS ON OUR CHOICES.

That's why we are constantly working to bring sustainability inside our company as well, integrating sustainable practices into our daily lives.

Why the circular economy?

Because the feedstock for the plant consists of waste and scrap material, which is then transformed into valuable new resources.
The biogas plant also gives added value to the surrounding area, by returning high quality digestate to the land, and supplying citizens and users with energy from renewable sources.

Our plants in operation since 2010 led us achieve the following goals:

CAPTURED METHANE

about **1.200.000.000** Nm^3

equal to
THE ANNUAL GAS CONSUMPTION
of **40.000** families

AVOIDED CO_2 EQUIVALENT

about **23.000.000** Ton

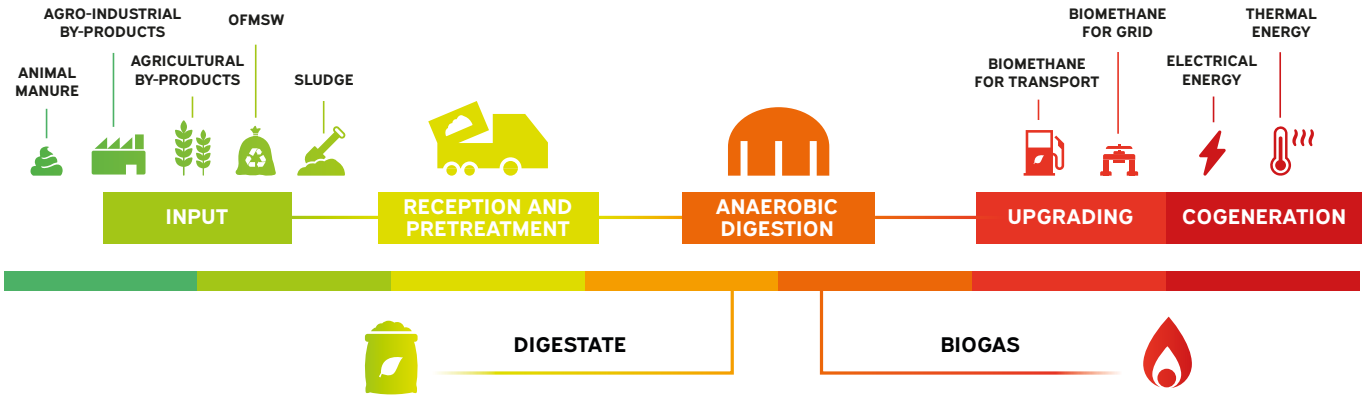
value calculated with GWP = 25

Technology

Anaerobic digestion is a biological process that takes place in the absence of oxygen and through which the organic content of biomass is transformed into biogas. SEBIGAS' know-how allows us to design plants by choosing from different technologies.
The most suitable reactor for the customer is selected according to the available biomasses and their characteristics.

The technologies proposed by SEBIGAS differ according to:

- **DRY MATTER AND ORGANIC MATTER CONTENT** of the biomass;
- **THERMAL REGIME** functional to the best digestion efficiency (mesophilic, thermophilic, psychrophilic);
- Biomass **RETENTION TIME** in the reactor
- **MIXING SYSTEM** that fits the best homogenization in the reactor.



Biogas and the environment

- producing energy from immediately accessible renewable sources
- restoring nutrients to the soil
- reducing the impact of CO_2 on energy and biofuels
- creating value in locally-based circular systems
- giving value to waste and scrap as an energy source
- supporting the companies economic growth
- producing good quality fertilisers and soil improvers
- creating jobs in the sustainable supply chain

The process

Biomasses used as inputs in the anaerobic digestion plants are diverse and come from the agricultural, industrial, waste, or sludge management sectors. **Biomasses are loaded into the digester through a pre-tank or loader,** following any pretreatment process. The anaerobic digestion process takes place in digesters that are covered with a slab or gasometer cover, ensuring an appropriate storage of the biogas produced.

Energy

After appropriate treatments, biogas can be used to produce electricity and thermal energy from cogeneration, or separated to obtain biomethane and carbon dioxide for industrial use.
The **electricity** can be sold to the grid, or used to power the plant itself and supply the company.
Thermal energy supports the heat balance of biological processes and it is a source of heat to power the plant's external utilities.
Biomethane, on the other hand, can be sold to the natural gas transportation, to the distribution network or to CNG and LNG stations near the plant.

Digestate

The digestate leaving the process serves a dual purpose in agronomic terms, as it makes mineral elements available to plants and contributes to carbon storage in our soils.
The digestate output can be separated obtaining a liquid and a solid stream. If necessary, the digestate undergoes on specific **post-treatments** aimed at recovering its soil improver and fertilizer capacity, or aimed at reducing the content of nitrogen and other pollutants.

The plant feeding

SEBIGAS uses a combination of expertise, research and flexibility to create a tailor-made mass balance for the customers, designed to meet the need to treat varied and complex biomasses in anaerobic digestion plants. The company has worked in the international market for many years, developing and managing over 70 biomasses, and proving to be an expert and reliable partner in this field.
SEBIGAS offers biological analysis and processing services, to help make best use of the incoming feedstock and ensure the customer achieves optimal results.

+70 biomasses

agricultural by-products
fruit and vegetable waste, straw, leaves and cobs...

energy crops
sorghum, triticale, corn, second harvest...

animal manure
from cattle, pigs, sheep, poultry, horses...

slaughterhouse waste
fats, animal meal, rumen and stomach contents, offal, blood...

agro-industrial liquid effluent and by-products
dairy production, alcoholic beverages, soft drinks, sugar mills, paper mills, roasting, ethanol, oil, rice...

OFMSW
Organic Fraction of Municipal Solid Waste

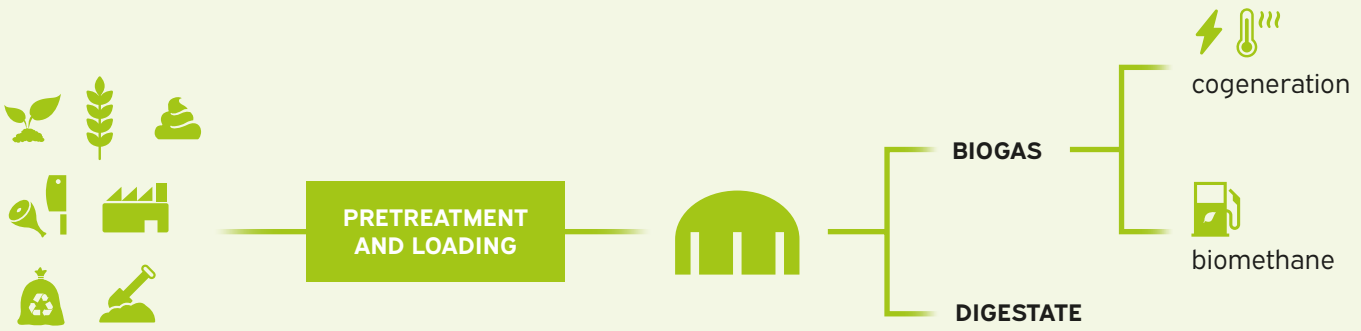
sludge
from municipal wastewater and industrial wastewater treatment plants

CSTR

Technology

The CSTR (Continuous-Flow Stirred Tank Reactor) is a technological solution that requires a **continuous flow of fresh biomass**. The biomass fed into the reactor is constantly mixed to ensure a perfect homogenization. In the CSTR, the anaerobic digestion process takes place at controlled temperatures and for dry matter contents below 10 percent. The retention time is variable and depends on the types of biomasses used to feed the plant.

DRY SUBSTANCE	5% < DS < 10%
THERMAL REGIME	Mesophilic or thermophilic
RETENTION TIME	20 < days < 60
MIXING SYSTEM	Mechanical (slow and fast mixers), inside the rector



The reactor

Solid and liquid biomasses are loaded through a pre-tank or loader into the digesters, circular tanks made of concrete or steel. The digesters are equipped with slow and fast mixers, whose operation is optimized to ensure a perfect homogenization of the digestant in the tank and prevent crust and sediment formation.
A sailing or gasometer cover is installed to cover the digesters, which ensures the storage of a sufficient volume of produced biogas.

The advantages of CSTR technology:

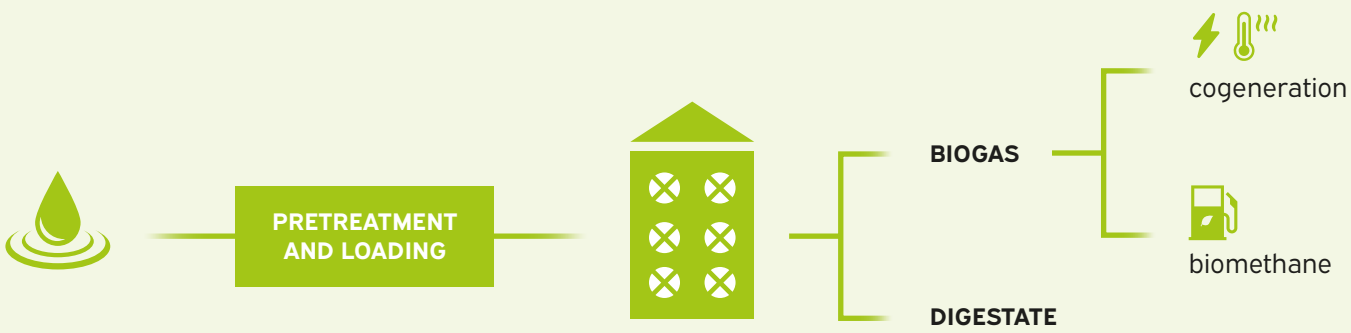
- **IS SUITABLE FOR FEEDING THE PLANT WITH BIOMASS WITH A COMPLEX DIGESTION**
- **PROVIDES THE POSSIBILITY TO IMPLEMENT CO-DIGESTION WITH A VARIED RECIPE**
- **HAS A HIGH BUFFERING CAPACITY FOR PH VARIATION**

anMBBR

The technology

The anMBBR (Moving Bed Bio Film Reactor) is a technological solution that enables the **treatment of industrial wastewater in anaerobic digestion**. The biomass used as the plant feeding is characterized by a low or no dry matter content, or highly diluted wastewater. With the anMBBR reactor, biomass with very high energy potential can be enhanced. It therefore turns out to be an alternative to traditional treatments, which tend to be very energy-intensive, but essential for the proper management of biomass in the production chain. With retention time of less than 10 days, digestion takes place in variable thermal regime, psychrophilic or mesophilic.

DRY SUBSTANCE	DS < 1%
THERMAL REGIME	Psychrophilic or mesophilic
RETENTION TIME	< 10 days
MIXING SYSTEM	Mechanical (slow mixers) inside the reactor - gasmixing



The reactor

In order to ensure the proper anaerobic digestion process, virgin plastic elements called "carriers" are inserted into the reactor. Their shape ensures a high support surface for the proliferation of bacteria, allowing the creation of biofilm and enabling the digestion of the organic load by the bacteria in the effluent. In addition, they prevent the so-called bacterial run-off phenomenon ("Bacteria Wash Out").

The configuration of the anMBBR reactor allows its application on new or existing production lines, mitigating plant operating costs.

The advantages of anMBBR technology:

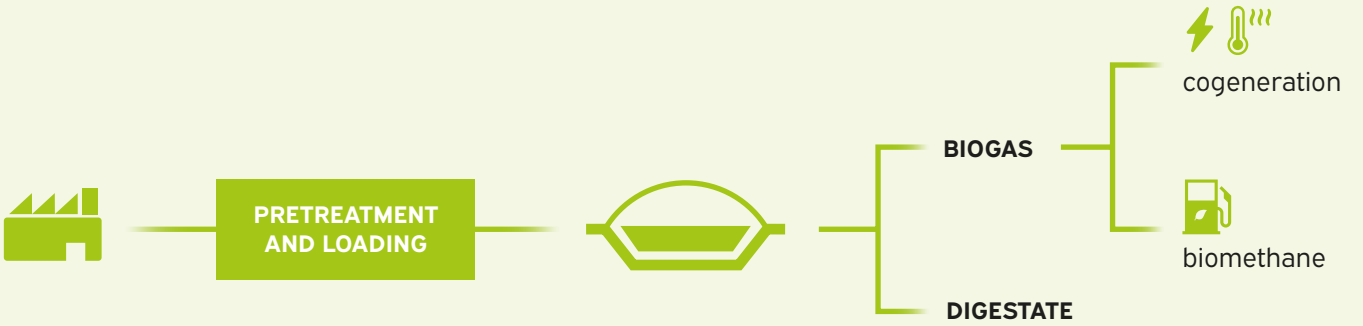
- **ALLOWS AN ON-SITE MANAGEMENT OF HIGH STREAMS**
- **IT HAS LOW DIGESTION VOLUMES**
- **IT IS CHARACTERIZED BY LOW ENERGY COSTS FOR THE MIXING SYSTEM**
- **PROVIDES FLEXIBILITY IN THE ORGANIC LOAD MANAGEMENT**

CLR

The technology

The Covered Lagoon Reactor (CLR) is a technology that enables the **anaerobic digestion of high volumes of liquid wastewater.** Characterised by a very low dry matter content and a low fibre content, the process takes place by recirculating the biomass within a lagoon at controlled temperature and flow rates, in an activated sludge layer. With variable retention times, anaerobic digestion takes place in a psychrophilic or mesophilic thermal regime, depending on the biomasses entering the reactor.

DRY SUBSTANCE	DS < 5% and low fibre content
THERMAL REGIME	Psychrophilic or mesophilic
RETENTION TIME	15 < days < 25
MIXING SYSTEM	Hydraulic mixing (recirculation pumps)-gasmixing



The reactor

The reactor has a very simplified configuration. It is in fact a tank with high volumes, called "lagoon" and provided with a gasometric cover. The digestion volumes are suitable and proportional to the typical high flow rate of industrial processes, to ensure biological stability of the anaerobic digestion.

The advantages of CLR technology:

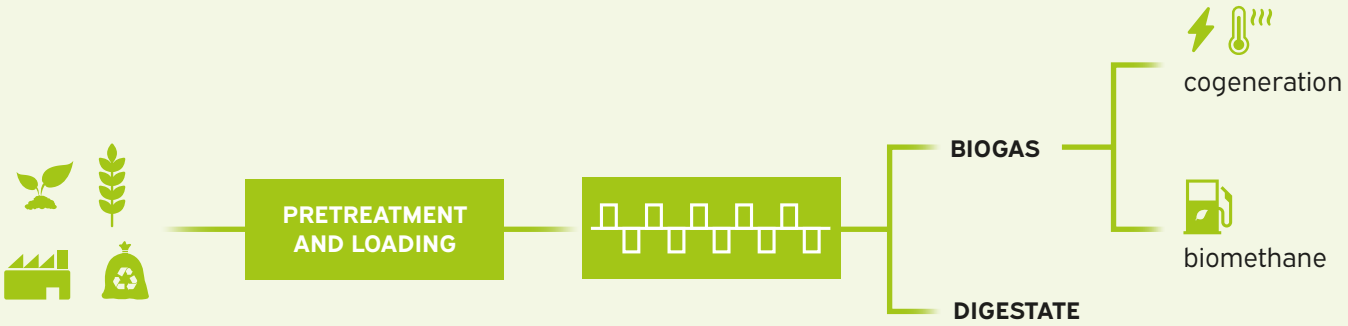
- **ENABLES ON-SITE MANAGEMENT OF HIGH STREAM EFFLUENTS**
- **HAS HIGH BUFFERING CAPACITY IN THE MANAGEMENT OF ACID BIOMASS IN MONODIGESTION**
- **ENSURES LOW ENERGY COSTS FOR THE MIXING SYSTEM**
- **ENSURES FLEXIBILITY IN THE MANAGEMENT OF SEASONAL BIOMASSES**

PFR

The technology

The plug-flow reactor (PFR) is suitable for the treatment of **biomass with high dry matter content**. The reactor is not equipped with a continuous mixing system, but with an equipment made up of paddles or screws. They allow to move the biomass through the reactor and let the biogas move upwards into the heated environment before being collected and treated. This reactor can be coupled with several upstream and downstream systems properly designed to treat the raw biomass or the digestate produced by the process.

DRY SUBSTANCE	15% < DS < 35%
THERMAL REGIME	Mesophilic or thermophilic
RETENTION TIME	20 < days < 60
MIXING SYSTEM	Mechanical (slow mixers) inside the reactor

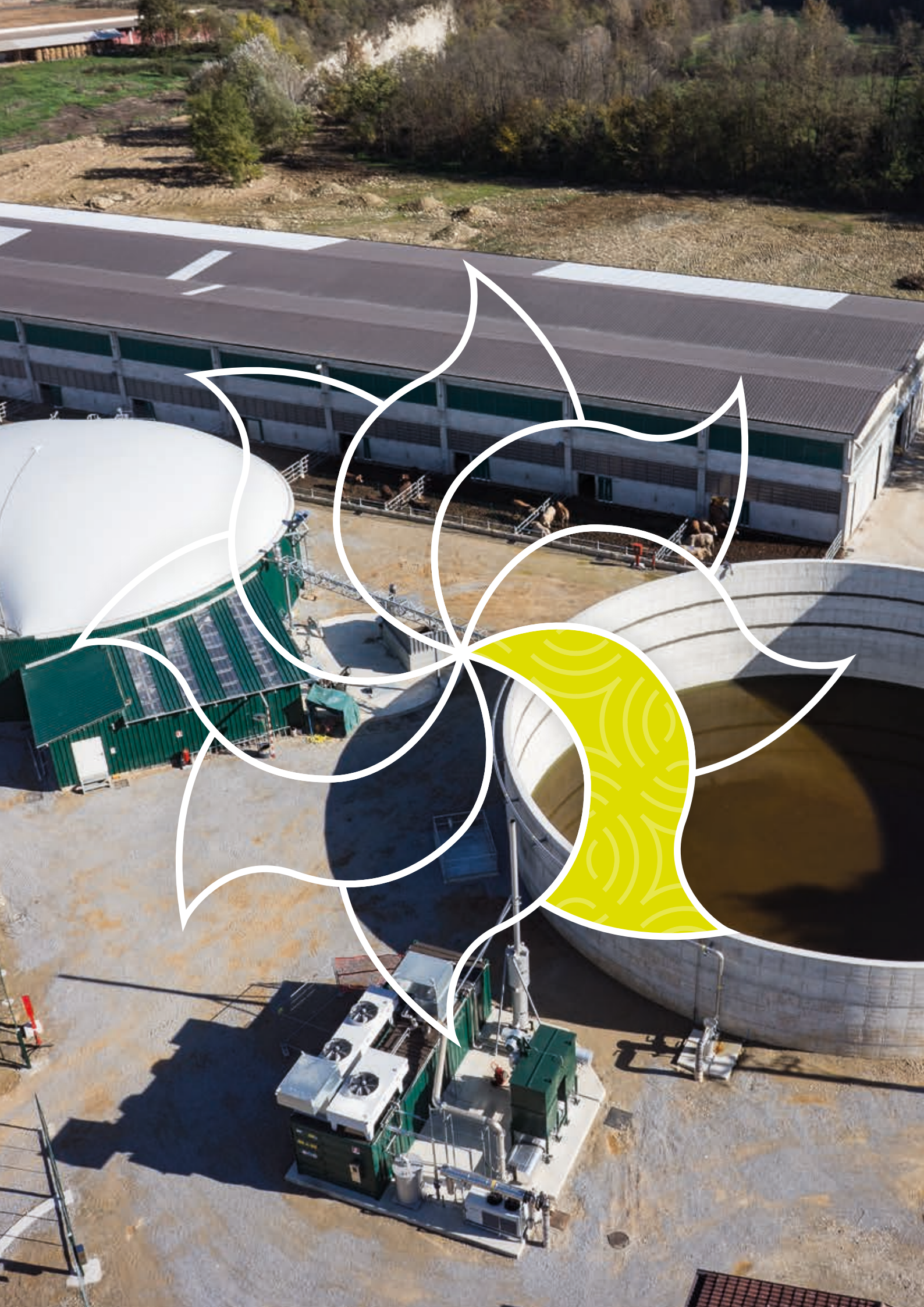


The reactor

In the PFR, the digester looks like a construction made of reinforced concrete, steel or fiberglass completely similar to a tunnel.
The presence of paddles inside the reactor avoids back-mixing processes, allowing the biomass to move towards the screw or pump installed at the reactor outlet. At the end of the process, the outgoing digestate has a very high dry matter content, and is generally sent to a composting systems.

The advantages of PFR technology:

- **IT IS SUITABLE FOR BIOMASSES WITH COMPLEX DIGESTION**
- **IT IS SUITABLE FOR REDUCED DIGESTION VOLUMES AND HIGHLY FIBROUS BIOMASSES**
- **ENSURES THE REDUCTION OF THE QUANTITIES OF DIGESTATE**
- **SEQUENTIALLY SEPARATES THE STAGES OF ANAEROBIC DIGESTION WITHIN THE REACTOR, THUS HAVING GREATER CONTROL OF EACH OF THEM.**



Agricultural plants

Installing a plant fed with agricultural matrices is a sustainable investment for farms, providing a supplementary source of income. In addition, biogas production makes it possible to establish and exploit a synergy with the surrounding communities, increasing the added value of agriculture and optimizing the energy produced in the surrounding area.

Biogas in agricultural companies

Agricultural biogas plants are an optimal solution for the valorisation of biomasses from agriculture, livestock and agro-industry. Each plant is adapted according to the customer's requirements and the potential of each individual matrix used as a feeding. Depending on the feeding, a pretreatment solution is implemented to handle the most complex matrices, such as sanitization, pasteurization and sand removal. In specific cases, a stage is also implemented that may include technologies such as pasteurization or flotation. At the end of the process, specific post-treatment steps for digestate valorisation and nitrogen recovery can be considered.

AGRICULTURAL BY PRODUCTS

fruit and vegetable waste, straw, leaves and cobs...

ENERGY CROPS

sorghum, triticale, corn, second harvest...

ANIMAL MANURE

from cows, pigs, sheep, poultry, horses...

AGROINDUSTRIAL BY-PRODUCTS

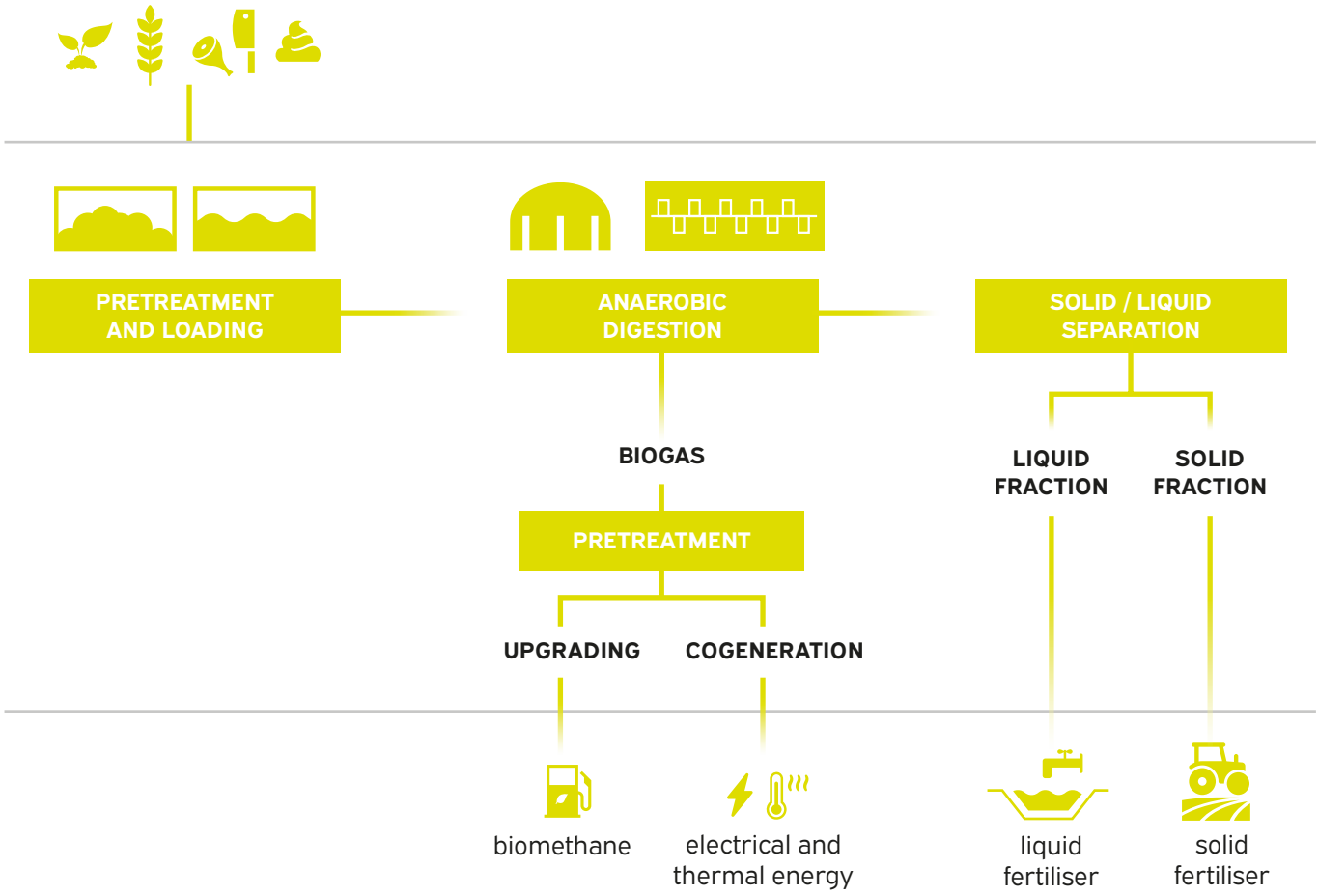
slaughterhouse waste, dairy production, alcoholic beverages, soft drinks, sugar mills, paper mills, roasting, ethanol, oil, rice...

Environmental advantages

Thanks to this solution, it is possible to contribute to the company's waste management, while also eliminating operating costs and enhancing its energy value. The biogas plant reduces the equivalent CO_2 emitted by the effluent, avoiding the release of CH4 into the atmosphere, which is naturally emitted by these types of waste if not treated with anaerobic digestion. The company also replaces organic products with synthetic ones, enhancing the digestate in the surrounding soils.

Economic advantages

The production of electricity, thermal or biomethane energy represents a continuous source of income for the farm, with a clear reduction in the supply from fossil sources.
Earmarked for self-consumption, heat demand of various farm processes, or sold to the national grid, it creates a profitable and circular production system.



Case study agricultural plants

SALERA

LOCATION
Castelvisconti (CR)

YEAR OF INSTALLATION
2011

FEEDSTOCK
Pig manure, rye silage, maize silage

INSTALLED POWER
625 kW

USE OF ELECTRICAL/THERMAL ENERGY
The electricity is sold to the grid with a special feed-in tariff. The thermal energy is used to heat a cultivation of organic spirulina algae

DIGESTATE
Used as a source of nitrogen for the soil

Case study agricultural plants

DEBO

LOCATION
Niella Tanaro (Cuneo)

YEAR OF INSTALLATION
2015

FEEDSTOCK
Cattle slurry and manure with straw

INSTALLED POWER
300 kW

USE OF ELECTRICAL/THERMAL ENERGY
The electricity is sold to the grid with a special feed-in tariff. The heat is reused in the farm's production cycle and to heat the digesters

DIGESTATE
Used as a fertiliser and soil improver, replacing synthetic products

BIOQUERCY

LOCATION
Gramat (France)

YEAR OF INSTALLATION
2017

FEEDSTOCK
Slaughterhouse waste and by-products

INSTALLED POWER
1.800 kW

USE OF ELECTRICAL/THERMAL ENERGY
The electricity is fed into the grid under an incentive scheme, the thermal energy is used to heat the digesters and for the pasteurisation process

DIGESTATE
Used as an organic fertiliser for the crops around the plant

Organic waste plants

Installing a biogas or biomethane plant fed with the OFMSW (Organic Fraction of Municipal Solid Waste) represents a sustainable investment for the complete and circular recovery of a huge amounts of waste from households or channels such as large retail organizations and Ho.Re.Ca. Anaerobic digestion technology enables the management of substrates that are not homogeneous and rich of impurities.

Biogas from OFMSW

Using OFMSW to feed a biogas plant is a conscious choice, which allows the creation of a supply chain and a capillary organization for the proper management and valorisation of waste. Considering high volumes and heterogeneous characteristics, SEBIGAS technologies ensure the implementation of specific pretreatments, aimed at avoiding the alteration of the performance of anaerobic digestion.

OFMSW

From door to door collection

NON-DOMESTIC FOOD WASTE

From hotels, restaurants, catering companies, bars and cafes (Ho.Re.Ca)

EXPIRED AND NON-COMPLIANT FOOD

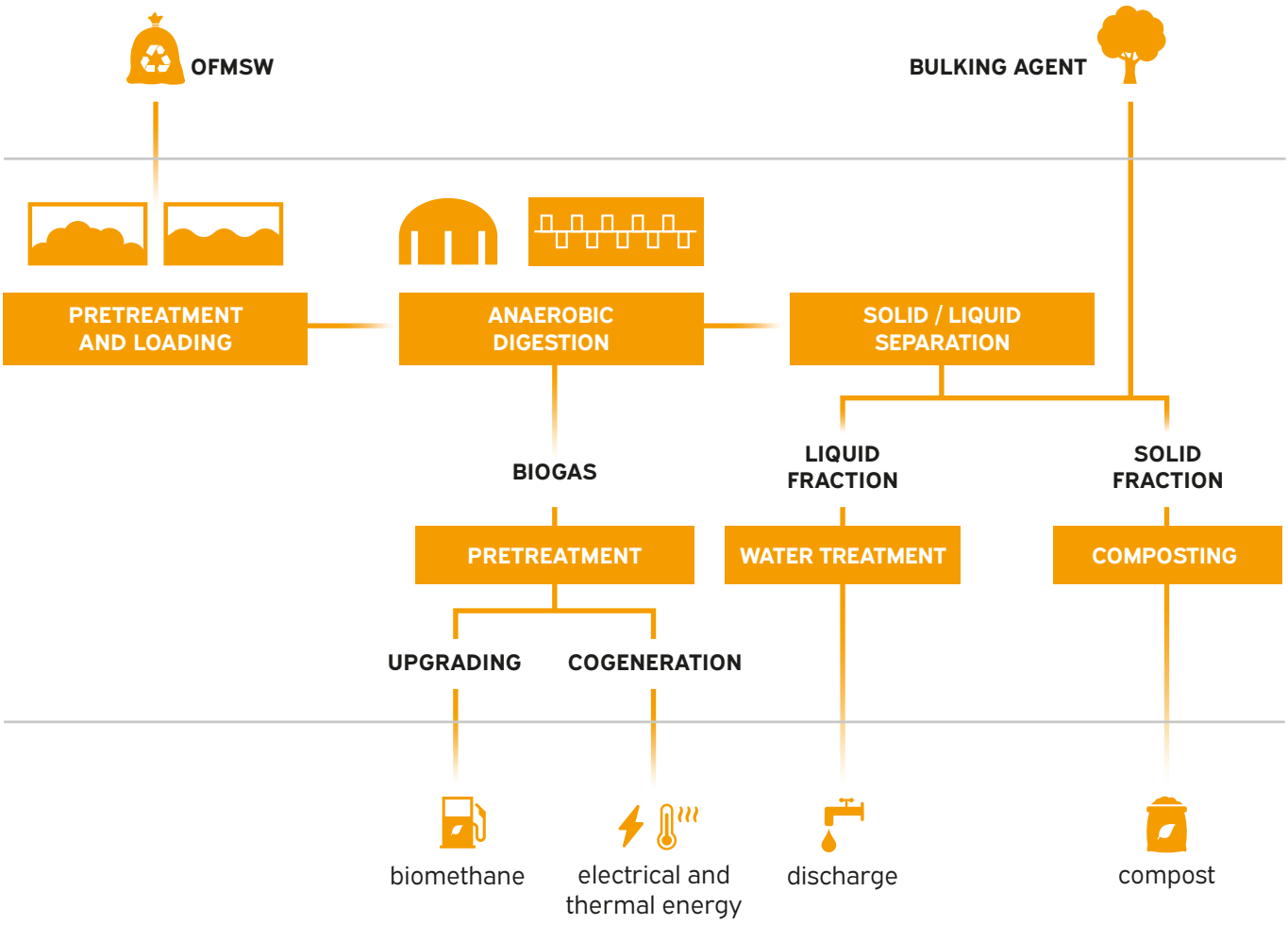
From large-scale retailers and distributors

Environmental advantages

OFMSW treatment in the anaerobic digestion allows to recover high volumes of waste, alternatively dispatched to landfills or incineration. Anaerobic digestion is a technological solution that assumes the implementation of appropriate treatments to ensure the environmental sustainability of the plant and the management of biomass according to regulatory standards.
The liquid fraction of digestate, in fact, can be discharged into surface water bodies after the application of biological treatments such as ultrafiltration, reverse osmosis and evaporation. The separated solid fraction, on the other hand, is sent to the bioxidation process for final use as a mixed composted soil improver in agriculture or packaging.
With specific arrangements, the plant ensures lower odor emissions and optimal leachate management.

Economic advantages

The production of electricity, thermal or biomethane energy is a constant source of income for the customer. Injected to the national grid or reused for self-consumption, it is a vehicle for reducing related supply costs. It also eliminates the cost of disposing of the OFMSW, enhancing its value in a sustainable and circular process. Anaerobic digestion is an opportunity to create a profitable and competitive supply chain.



MASERATI ENERGIA

LOCATION
Sarmato (PC)

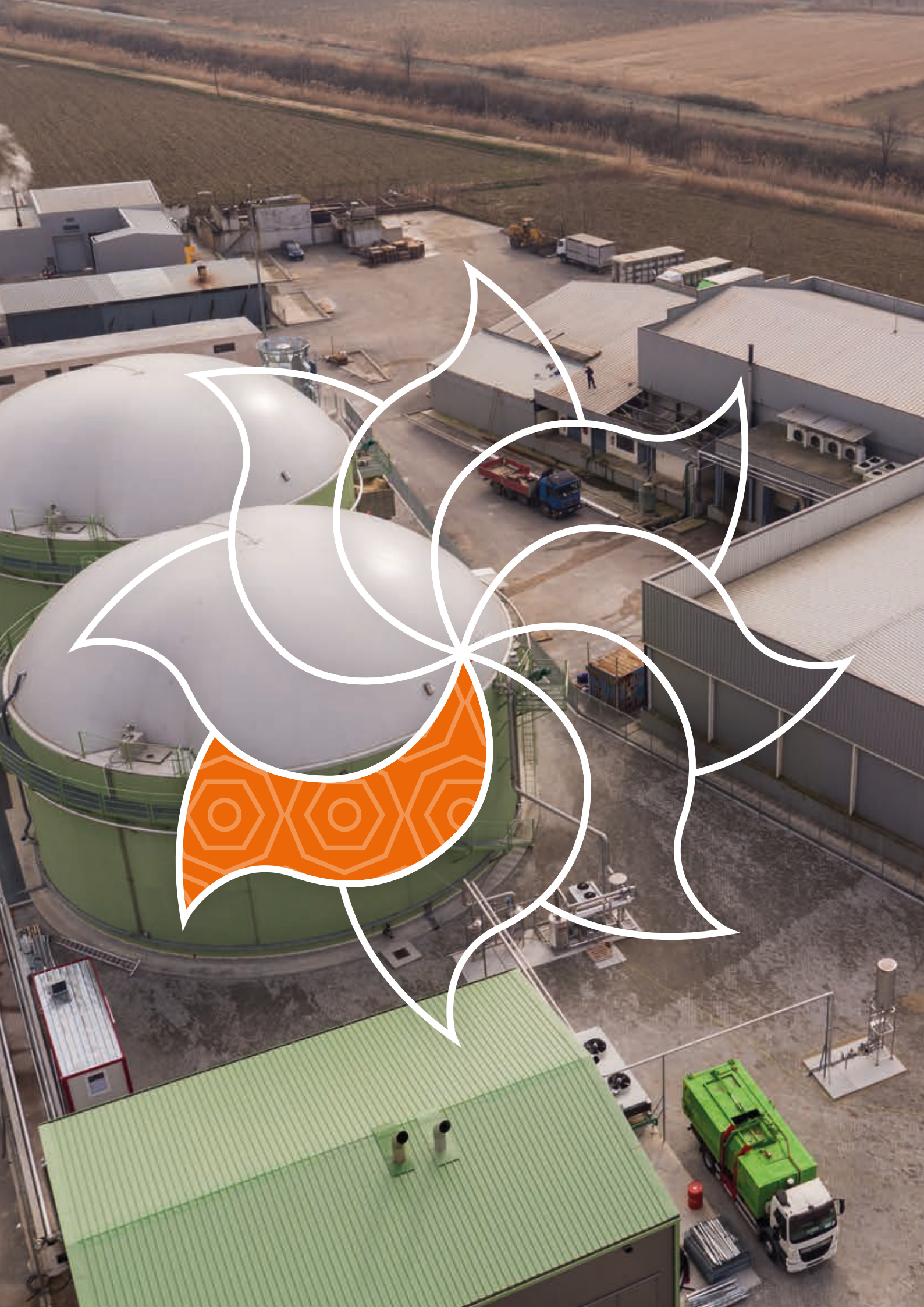
YEAR OF INSTALLATION
2019

FEEDSTOCK
50.000 t/year and 5.000 t/year green waste from public spaces

PRODUCTION OF BIOMETHANE
5.100.000 Sm^3/y

PRODUCION OF COMPOST
10.000 t/y

LIQUID EFFLUENT INTO SURFACE WATER BODY
36.000 m^3/a



Industrial plants

The industrial production sector is one of the most energy-intensive, which would greatly benefit from the implementation of technology to support the circular economy and the reuse of energy. Production departments that have high quantities of waste, both liquid and solid, which need high costs to be disposed of or recovered. These are sectors that are increasingly attracting the interest of ESCo, in order to implement improvements for energy efficiency.

Biogas in the industrial production

Thanks to the anaerobic digestion technologies proposed by SEBIGAS, companies can implement an environmentally and economically sustainable solution.
A technology that contributes to the production of energy to be used directly in industrial production processes: a clear advantage, in very energy-intensive production sectors and with very high energy supply costs.

DAIRIES

BREWERIES, DISTILLERIES AND SOFT DRINKS PRODUCERS

SUGAR FACTORIES

PAPER MILLS

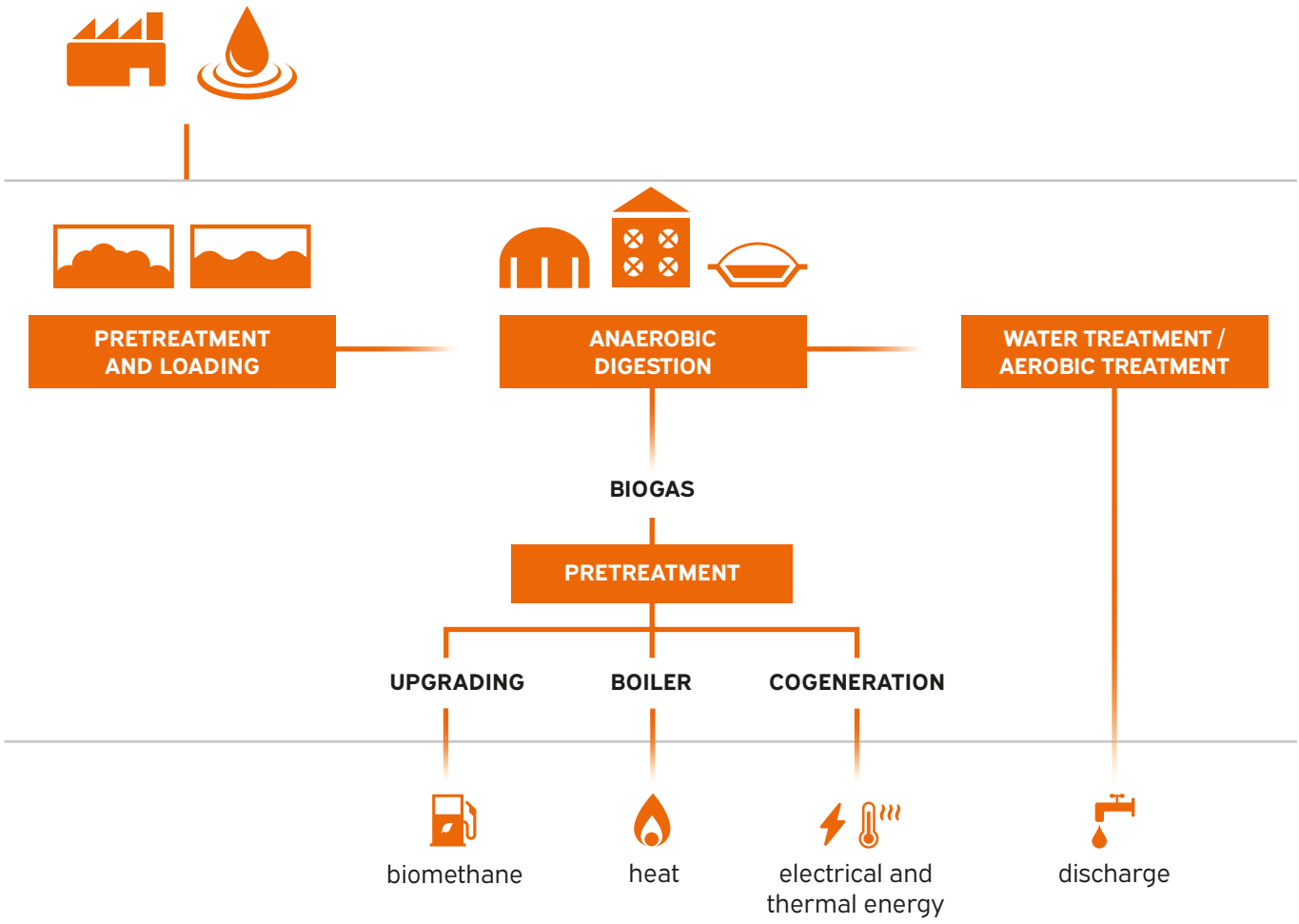
SLAUGHTERHOUSES

Environmental advantages

Thanks to this technological solution, the company makes its production processes environmentally sustainable. The waste produced during the production phases is very high and in most cases is sent to disposal: through the anaerobic digestion, it is possible to enhance these effluents, creating a circular system of optimization and reuse of resources.

Economic advantages

From an economic point of view, installing a biogas plant in such energy-intensive production processes is a source of considerable savings. The recovery of the energy produced from biogas for self-consumption allows a significantly energy demand reduction, alternatively taken from the grid.



FARMA HALASTRAS

LOCATION
Salonicco (Greece)

YEAR OF INSTALLATION
2017

FEEDSTOCK
Cattle slurry, slaughterhouse waste, expired food, beer production waste, whey.

POWER INSTALLED
1 MW

USE OF ELECTRICAL/THERMAL ENERGY
The electricity is fed into the grid, the heat is used for heating the buildings, the pasteurisation system and the digester

DIGESTATE
Used as an organic fertiliser for animal feed crops

Sludge plants

Public and private companies are increasingly committed to adopting sustainable solutions for the treatment of sludge produced at the civil and industrial level. Through careful management and purification treatment, it is possible to transform the sludge into a resource for the plants, as well as a valid example of circular economy.

Biogas from sewage sludge

Thanks to the treatment of sludge in anaerobic digestion, SEBIGAS guarantees its recovery with a view to sustainability and the creation of a virtuous path of circularity. The sludge treatment process can be divided into 4 specific stages:

- **THICKENING:**
  increasing the amount of dry matter in the sludge, reducing its original volume.
- **BIOLOGICAL STABILISATION:**
  mineralising putrescible organic substances and eliminating bacteria.
- **DEWATERING:**
  removing most of the water and reducing the sludge to about 18-22% dry matter, by use of techniques such as centrifugation, belt presses, filter presses, etc.
- **DRYING:**
  further removal of water from the sludge by the use of thermal energy.

INDUSTRIAL SLUDGE

Meat, fish and dairy processing companies, soft drink companies, breweries, confectionery companies, paper mills, the textile industry...

MUNICIPAL SLUDGE

Sludge from sewage treatment and urban wastewater treatment plants

The types of sludge that can be treated in anaerobic digestion are divided into two main categories:

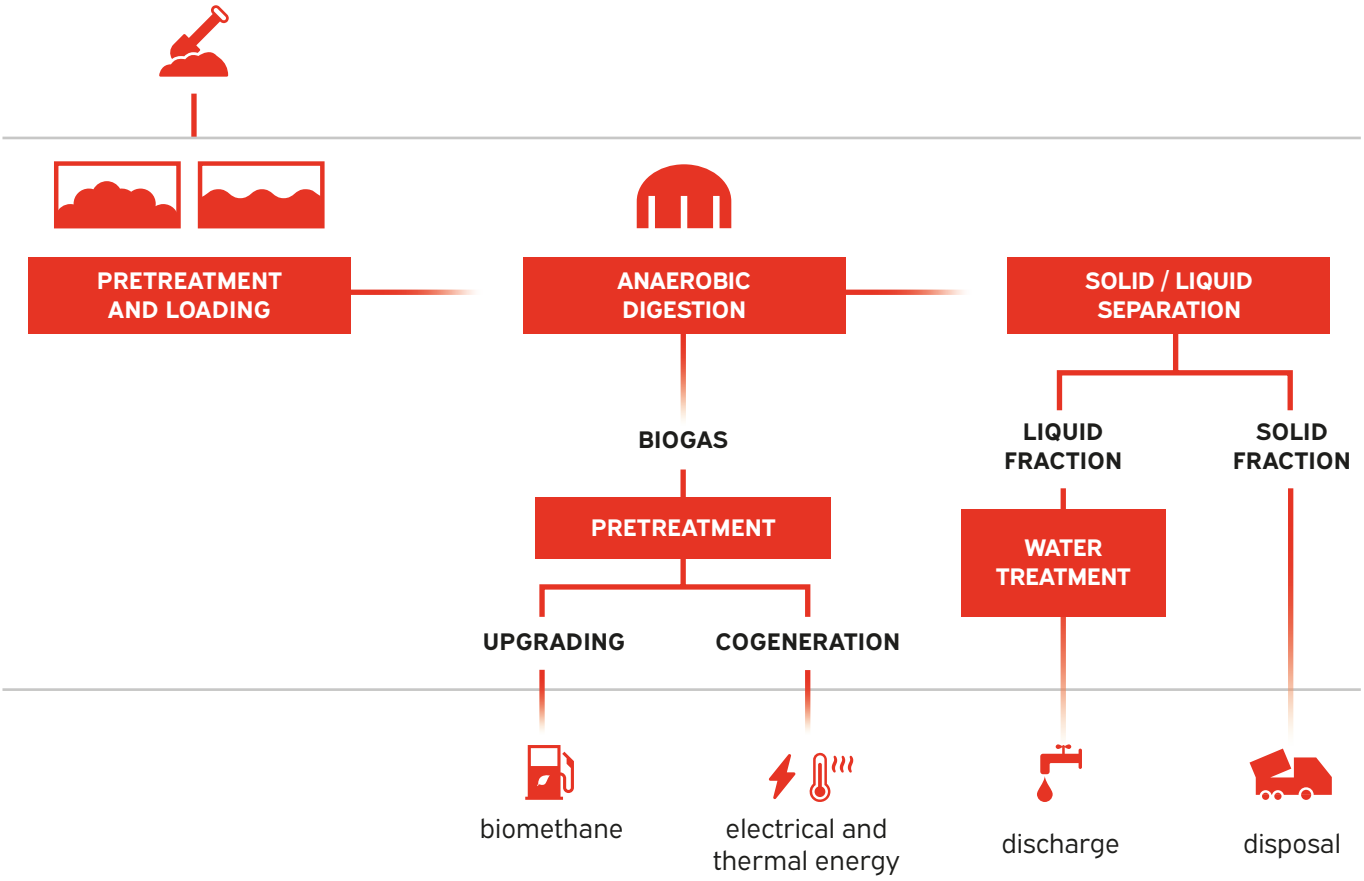
- **PRIMARY SLUDGE:**
  derived from the process of primary sedimentation. With a biogas yield of about 300-400 Nm^3/t_{ODS}), this type has good methane potential and is readily digestible.
- **SECONDARY SLUDGE:**
  this derives from the sedimentation produced through processes of biological oxidation. As digestion takes places through an aerobic process, this sludge is less efficient in terms of biogas production (200-300 Nm^3/t_{ODS}).

Environmental advantages

Treating sludge in the anaerobic digestion process is essential to recover its methane potential and enhance it energetically. Self-consumption of renewable energy in production processes allows to reduce greenhouse gas emissions from the process, as well as reduce energy dependence on fossil fuels.
Being digester and the purification system two complementary processes that integrate perfectly, they improve the stabilization of the sludge and its odor impact.
A technological solution that also guarantees the reduction of the bacterial load in the sludge and the volumes of sludge dispatched to disposal at the end of the process.

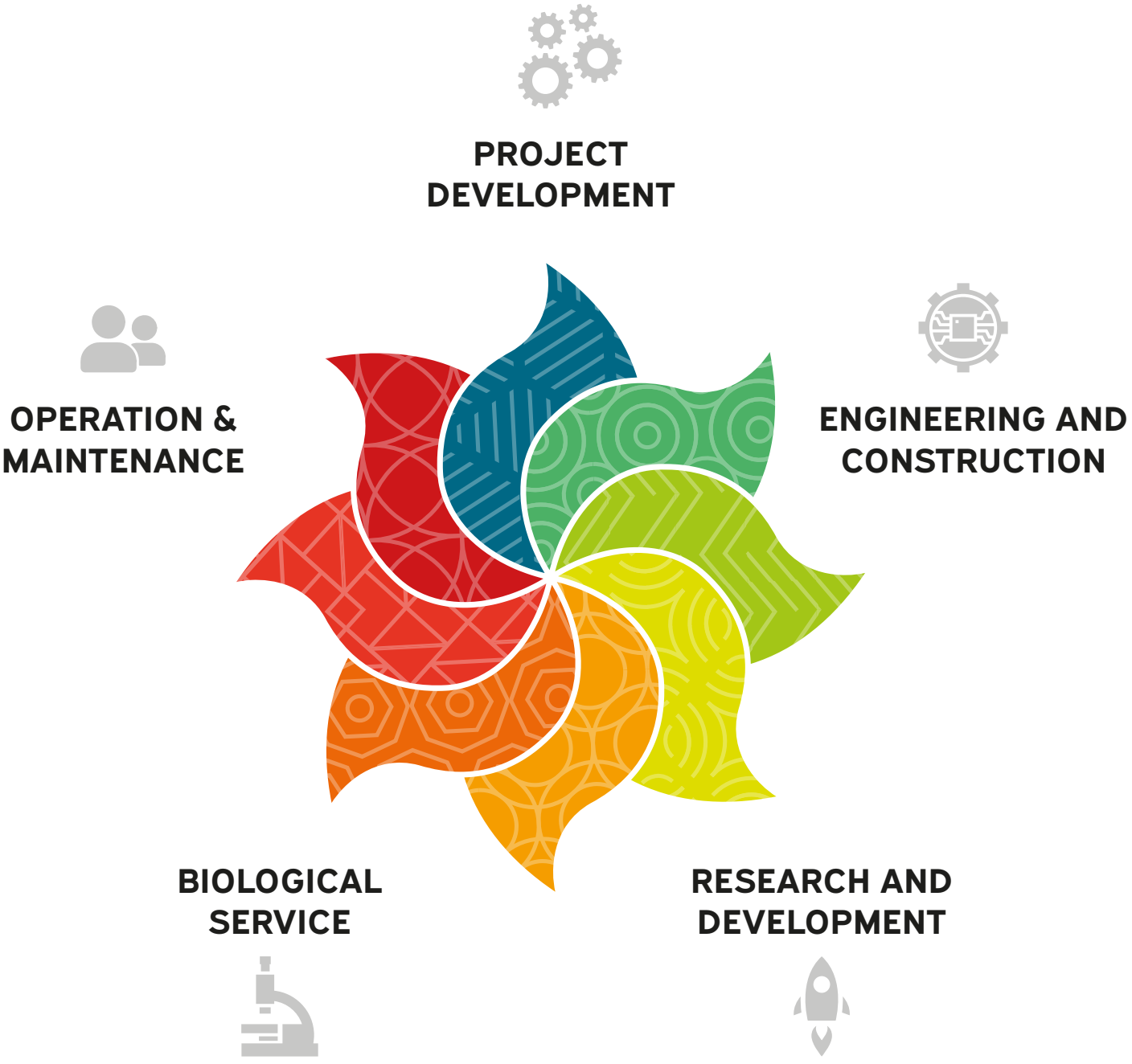
Economic advantages

The easy integration of existing purification systems with the digester makes the installation a cost-effective process. Using the energy produced from the anaerobic digestion of sewage sludge means managing a waste in a sustainable way, turning it into a source of income or a tool to reduce operating costs.



Our services

SEBIGAS offers a system of integrated services, ensuring the customer receives practical support at every stage of the design, construction and operation of an anaerobic digestion system. Moreover, SEBIGAS is committed to guiding the customer towards conscious and sustainable choices so that the plant can support the business, both in terms of economic, but also environmental and social sustainability. From the feasibility study to the design, from the preparation of a tailor-made mass balance to help with the authorisation process, from the preliminary engineering work to the overall construction, and from a support service to the management (O&M) of the plant.



Project development

With the support of the TICA group, SEBIGAS helps its customers in their search for financing, drawing up pre-feasibility studies to support the **business plan** for their initiatives, and providing a prompt analysis of the return on investment for every project.

SEBIGAS also uses the services of experts to carry out **pre-feasibility studies**, helping the customer to evaluate the investment not only from a technical standpoint, but also in economic and financial terms. A service directed at both private and public administrations, to allow a business idea to be planned and implemented in line with the customer's expectations.

SEBIGAS also provides **support with the process of authorization** for the plant, working alongside the customer and its consultants in relation with the competent authorities to acquire the necessary authorization.

To respond to the demands of an evolving sector, SEBIGAS offers its services as a technical partner for developers and investors, helping to authorise and construct with high guaranteed profitability.

Engineering and construction

SEBIGAS offers integrated solutions, to develop engineering projects that suit the customer's needs and ensure the expected levels of performance.

It also acts as a **technology provider**, giving constant support in supplying the technology and engineering required for constructing the biogas plant.

SEBIGAS manages the entire construction process in a reliable and expert way, offering an **EPC** - Engineering Procurement Construction - service for a turnkey delivery of the project.

SEBIGAS also offers a **revamping and repowering service** for existing biogas plants. After a careful, in-depth assessment of the system in operation, SEBIGAS puts forward the best solution for maximising its performance and extending its useful life.

Research and Development

For SEBIGAS, the desire to develop better solutions is the driver behind its constant research and development work.
To guarantee high performances for its customers, and to give them a real opportunity to make their businesses circular, sustainable and profitable, SEBIGAS **researches and selects cutting-edge processes and technologies**, and constantly upgrades the standards it uses.

Biological Service

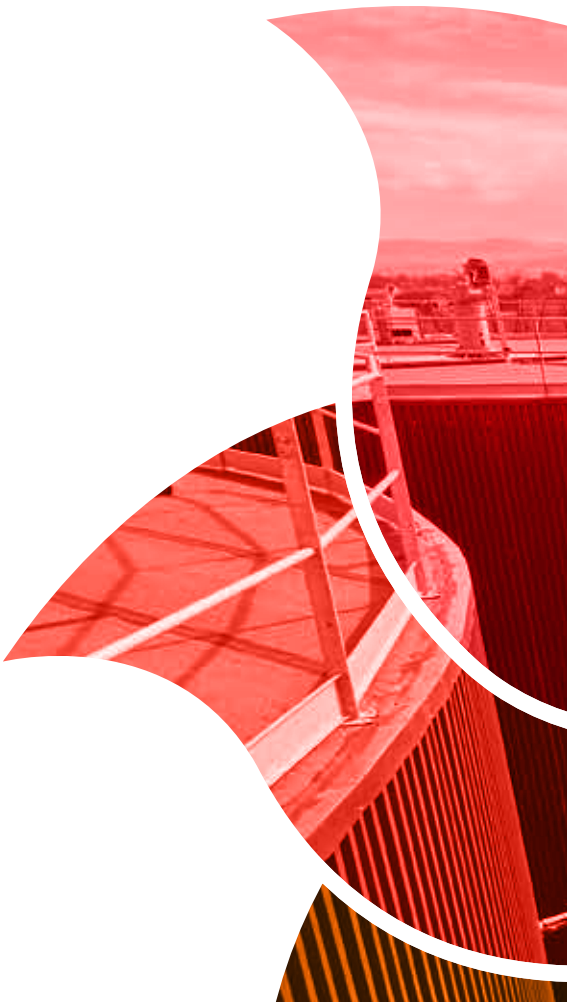
SEBIGAS has its on-site laboratory and offers a specialist biological service to monitor the well-being of the anaerobic environment and the continuing production of biogas. It is very important to monitor the biological efficacy of the biomasses, in order to control the operating costs of the plant and to produce revenues in line with expected performances.
SEBIGAS will act as a consultant before, during and after the construction of the plant, offering a customised biological service based on the particular characteristics of the plant.

Our services include:

- **BMP TEST & THEORETICAL METHANE YIELD**
- **CONTINUOUS TESTING**
- **PLANT REMOTE MONITORING**
- **CONSULTING SERVICE TO ASSESS AND IMPROVE THE PLANT PERFORMANCES**
- **ON-SITE VISITS AND SAMPLING FOR FOS-TAC, PH AND TEMPERATURE CONTROL ANALYSIS**
- **LABORATORY TESTS OF THE DIGESTANT**

Operation & Maintenance

SEBIGAS supports operators with training to **manage the plant**, and its staff are always on hand to offer **service and assistance, both at the plant itself and online**, using the **proprietary software** with which the plant is equipped.
The SCADA system, with its intuitive interface and efficient data trending features, plays a central role in ensuring robust, effective and timely process management.



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