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**BIOMETHANE**  
agriPure® - The system for biogas upgrading.



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# Biomethane

## The sustainable alternative

### RENEWABLE FUEL WITH POSITIVE CHARACTERISTICS

Biogas is produced naturally through the anaerobic digestion of organic waste and residues.

The biogas produced is a mixture of approx. 50-75 % methane, 25-50 % carbon dioxide plus trace gases such as hydrogen sulphide, oxygen, nitrogen, ammonia, and hydrogen. Biogas can be used to generate electricity and heat in CHP units but often the full energy potential is not utilised. By upgrading biogas to biomethane, this full energy potential can be realised along with many other positive characteristics and possible applications.

#### WHAT IS BIOMETHANE?

Commercially available natural gas contains a high percentage of methane with smaller amounts of nitrogen and carbon dioxide. Its calorific or energy value can vary depending on where it is sourced across the world. The upgrading of biogas produces biomethane, which can be fed into the natural gas grid as a natural gas substitute and used in the same way.

### FROM BIOGAS TO BIOMETHANE

The biogas produced, also called raw gas, is first subjected to pre-treatment which removes impurities from the biogas input before it enters the compressor and separation membranes. It includes gas drying, activated carbon filter and pre-compression.

In the subsequent upgrading process, the CO<sub>2</sub> and other gases contained in the raw biogas are separated using membrane technology. The upgraded gas contains up to 99% methane and is now called biomethane or bio natural gas. The other separated gases such as CO<sub>2</sub> and H<sub>2</sub> can be utilised for further applications.

#### CHEMICALLY EQUIVALENT TO NATURAL GAS

In general, after biogas upgrading, biomethane can be used wherever natural gas is used. Both variants are chemically equivalent and differ only in their fossil or biogenic origin. Before feeding it into the natural gas grid, it may be necessary, in some jurisdictions, to adjust the calorific value (e.g. by adding propane) and to odorise the biomethane for safety reasons, because methane is odourless.

### STOREABLE & TRANSPORTABLE

Biomethane can be fed into the natural gas grid and be transported through it. This makes it possible to use it far away from the place of production. National gas grids are also a significant and cost effective storage resource where biomethane can be made readily available to the end user. With this positive contribution to demand-responsive energy production, biomethane has a unique advantage compared with many other forms of renewable energy.

#### A LOW CARBON FUEL, REDUCING NEED FOR IMPORTED GAS

The biomethane fed into the grid replaces fossil natural gas and benefits from a balanced CO<sub>2</sub> cycle in its production, making a positive climate impact compared with the continued use of fossil natural gas. Biomethane is produced locally: This increases regional value chains and reduces dependence on national gas imports.

#### BROAD APPLICATIONS

The purity of biomethane makes new applications possible that do not exist for biogas yet. For example, biomethane can be converted into heat and electricity in an energy-efficient way in any natural gas-powered CHP. Due to the gas grid, the production site and the utilisation site are separated, i.e. the heat produced by the CHP unit can be fully utilised, e.g. for the heating of buildings.

### BIOFUEL

Biomethane can also be used as a biofuel to decarbonise the transport sector. Compressed as Bio-CNG or liquefied as Bio-LNG, biomethane is available for a wide range of applications. Whether in transport, shipping or even air traffic, up to 90 % of harmful CO<sub>2</sub> emissions can be saved. This is because biomethane only releases as much CO<sub>2</sub> as the raw biomass has previously absorbed from the atmosphere. If slurry, manure and organic residues are used as feedstock, biomethane actually has a positive carbon balance.

#### MAXIMUM FLEXIBILITY

Biomethane is one of the most flexible and transferable forms of renewable energy. Whether for electricity, heat generation or as a transport biofuel, there are many possible uses for biomethane. A useful by-product of biomethane production is CO<sub>2</sub>, which can also be captured and beneficially used in many industries such as food and beverages and horticulture.



# agriPure®

## The system for biogas upgrading

### A PERFECT SYSTEM

The innovative and sustainable agriPure® biogas upgrading plant was originally developed by agriKomp in 2015.

The biogas upgrading process converts biogas produced by anaerobic digestion into biomethane using special membranes. There are several pre-treatment steps to clean and condition the biogas. The biogas is then compressed before entering the membranes which are used to separate the methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>) gases at a molecular level. After this upgrading process, the product biomethane can be sent to the gas grid or further compressed or liquefied for use as transport fuel.

### COMPLETE SOLUTION

With agriPure®, we offer a complete solution for anaerobic digestion and biogas upgrading: From the biogas plant and biogas pre-treatment to biogas upgrading / CO<sub>2</sub> recovery and liquefaction and finally processing biomethane into BioLNG or BioCNG - agriKomp is the right partner for your project.

Our service network is well established and international with experienced service engineers and good spare parts availability. Your agriPure® plant will receive a well-coordinated and reliable service support, providing the best opportunity for a long and trouble-free plant lifespan.

### PROVEN SEPARATION TECHNOLOGY

We have chosen a proven and reliable technology for our membrane modules. We equip our agriPure® upgrading system with SEPURAN® Green membranes from EVONIK. The separation membranes operate according to the principle of selective permeation. The membranes are made of several thousand fine hollow fibers, which guarantee very good selectivity. They separate the gases in the raw biogas and produce a methane concentration of up to 99 % in the product gas. The innovative technology consists of three stages and enables optimum treatment efficiency with minimal methane losses, thus achieving maximum biomethane yield.

### YOUR BENEFITS AT A GLANCE

- ✓ Fully automated system, easy to operate
- ✓ ≥ 99.4% methane recovery
- ✓ Selected high quality components
- ✓ Good energy efficiency / low operating costs
- ✓ Sophisticated heat recovery
- ✓ Modular system: suitable for expansion
- ✓ Fast system re-start to grid-quality gas
- ✓ Industry leading membrane performance
- ✓ No process heat required
- ✓ Comprehensive service support
- ✓ Critical spare parts stock availability
- ✓ On-line control functionality
- ✓ Design enables integration of a CHP unit to produce electricity for own consumption

### THE PROCESS FROM BIOGAS TO BIOMETHANE

#### 1. Biogas production

As a biogas plant manufacturer with more than 20 years of experience and almost 1,000 operating plants worldwide, we offer a wide range of plant configurations made of standardized and high-quality components, tailored to the needs of our customers. Seamless spare parts supply, an extensive service network and technical updates ensure trouble-free operation over the entire plant lifetime.

#### 2. Pre-treatment

The biogas comes from the biogas plant as a mixture of CO<sub>2</sub>, methane and a small amount of other gases and is desulfurized in the pre-treatment stage with activated carbon, filtered and dried to protect downstream components from wear or damage. The pre-treated gas is then compressed to 16 bar and fed into the membrane stage. The pre-treatment unit is also developed and manufactured by agriKomp.

#### 3. Upgrading / Purification

The pre-treated and compressed biogas enters a membrane separation process, yielding a methane rich product gas and a CO<sub>2</sub> rich off-gas stream. The innovative 3-stage membrane configuration can produce a biomethane purity up to 99 %. The membrane separation stage and control system is housed in a single bespoke container.

#### 4. Feed-in / Injection

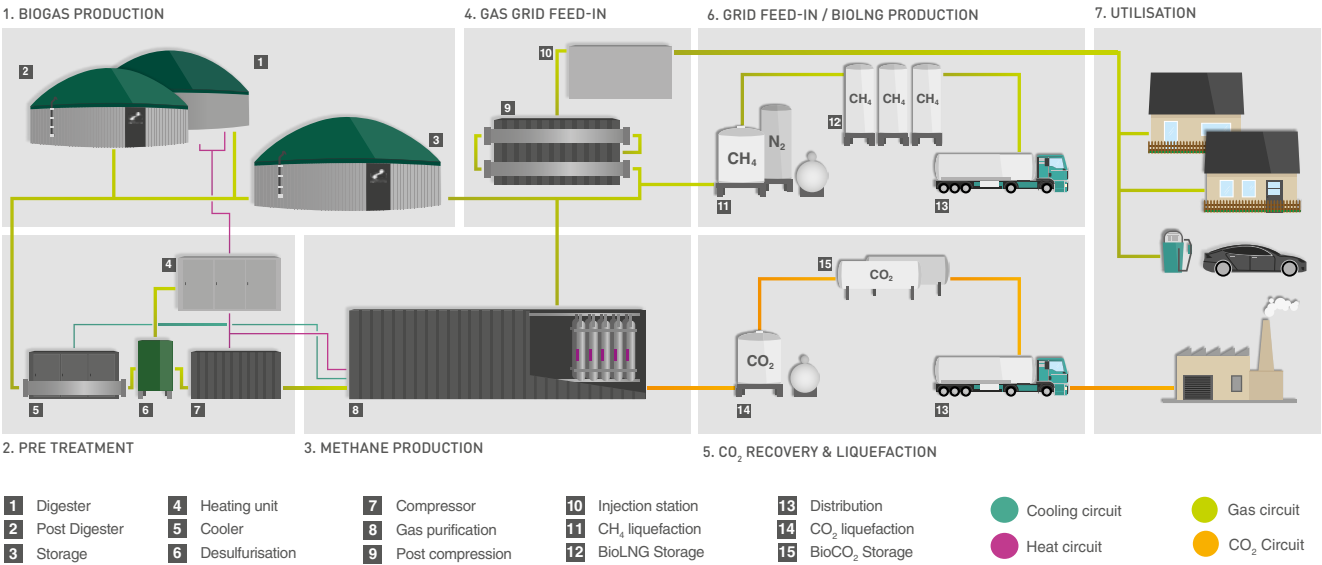
The biomethane injection unit is connected between the biogas upgrading plant and the gas distribution grid. Its functions include calibrated measurement of the biomethane, gas quality measurement, conditioning, odorization and pressure increase to the grid pressure.

#### 5. CO<sub>2</sub> recovery and liquefaction to BioCO<sub>2</sub>

The CO<sub>2</sub> extracted from the biogas can be captured and recovered by liquefaction. It can be used in many industries, e.g. greenhouses and food and beverage production.

#### 6. BioCNG & BioLNG

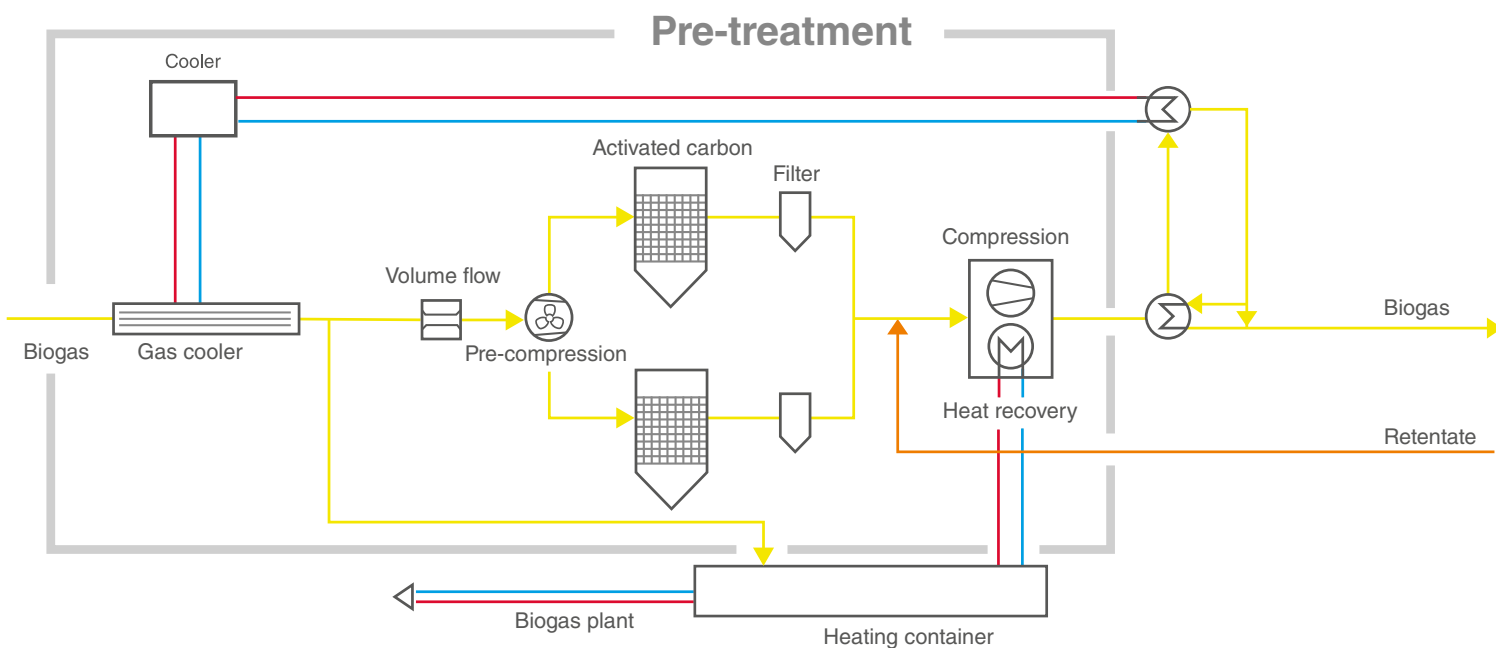
Biomethane can be used very well as a biofuel to decarbonise the transport sector. Compressed as BioCNG or liquefied as BioLNG. To complete the biomethane supply chain, we have proven technologies for liquefaction in our portfolio. Production of BioLNG allows storage and long-distance transport of biomethane as a fully renewable fuel.





# Pre-Treatment

## Cooling, compression and housing



### 1. COOLING / CONDENSATE REMOVAL

The raw gas (biogas) from the biogas plant will be fed into the pre-treatment. First step is the cooling of the biogas and separation of condensate. The gas is cooled and dried before entering the desulphurization unit. This extends the life of the activated carbon and of the compressor, which are high cost components.

### 2. PRE-COMPRESSION

The biogas is initially pressurised using a blower. This both improves performance in the main compression stage and also increases the gas temperature to an optimum level for treatment in the activated carbon filters.

### 3. BIOGAS DESULPHURISATION

Desulphurisation, as the 3<sup>rd</sup> step of the pre-treatment process, is performed by adsorption and oxidation in heat-insulated stainless-steel vessels.

By using stainless steel vessels we can provide high resistance to temperature, solar radiation and corrosion. The vessels are filled with high quality activated carbon. The conditions of the desulphurization step are chosen to maximize the loading of the activated carbon and to minimize the contact time of the deposition of hydrogen sulphide (H<sub>2</sub>S). This results in a more efficient removal of H<sub>2</sub>S per unit volume of activated carbon consumed and lower operational costs for the customer.

For checking filter performance and H<sub>2</sub>S breakthrough, gauge connections are provided within the filter.

### 4. COMPRESSION

The main high-pressure compressor is a single-stage, oil-injected screw design. Its function is to bring the raw gas to the required pressure for the membrane separation stage.

It is skid mounted with integrated sound protection hood, expandable with optional silencers. The control cabinet is installed outside the EX-zone in a separate container. Above-ground pipe-work and pipe connections between the compressor and the upstream and downstream plant segments are made of stainless steel. The compressor is connected to the process control of the complete plant and uses a variable speed drive which controls the power and gas flow. The compressor is equipped with oil pre-separation, over-pressure valves and bypass system. The compressor is also connected to the plant's heat recovery system.

### HOUSING (CONTAINER)

The high pressure gas system with LEL (lower explosive limit) monitoring and the separation membrane modules are installed in a specially designed heat insulated container. The container is protected with a corrosion resistant coating inside and out. The plant control cabinet and the compressor switchgear are housed separately allowing the possibility of future system expansion. Inside areas use waste heat to maintain a stable temperature with electrical trace heating to protect against freezing.

Container 1: Membrane modules and high pressure gas system with LEL monitoring

Container 2: Plant control cabinets

Container 3: Control cabinet for compressor

Using the latest compact membrane technology also allows plenty of internal space for our service technicians to do their work.



agriPure® Cube container set-up



Measurement & control and technical container

MEMBRANE MODULES

As a highly efficient solution for biogas purification, agriKomp uses EVONIK Sepuran® Green membrane modules. Gas separation membranes operate according to the principle of selective permeation by a membrane surface.

Selective permeation

The difference in size and solubility of biogas molecules leads to different permeation rates through the membranes. While carbon dioxide or water passes through the membranes at a fast rate, methane is retained (slow diffusion rate). The three-stage purification technology allows purifying performance of more than 99% to be achieved and represents a flexible and scalable solution thanks to the modular system.

Water and oil removal

Following compression, water and oil must be removed from the compressed gas to achieve the adequate purity required for the membrane separation process. This is done by cooling and separation in coalescence filters in the main compressor and by reheating and fine separation on activated carbon with subsequent dust removal in the upgrading unit.

3-STAGE MEMBRANE SEPARATION

With the clever 3-stage separation process, recycling flows are minimized and the energy costs of biogas upgrading plants optimized. This is how it works:

Raw gas flows through stage 1 which is the primary separation where the methane-rich fraction continues to stage 2 and the CO<sub>2</sub>-rich fraction is fed into stage 3.

In stage 2 the methane-rich fraction from stage 1 is further purified and becomes the product gas (biomethane) for grid injection or CNG/LNG production.

In stage 3 the the CO<sub>2</sub>-rich gas is an output that can also be collected through an additional liquefaction step. The methane-rich fraction is recirculated to stage 1.

Internal gas recirculation

The methane-rich gas from stage 3 and the CO<sub>2</sub>-rich gas from stage 2 are recirculated to stage 1 for another separation cycle; approx. 40% of the treatment volume in standard operation.

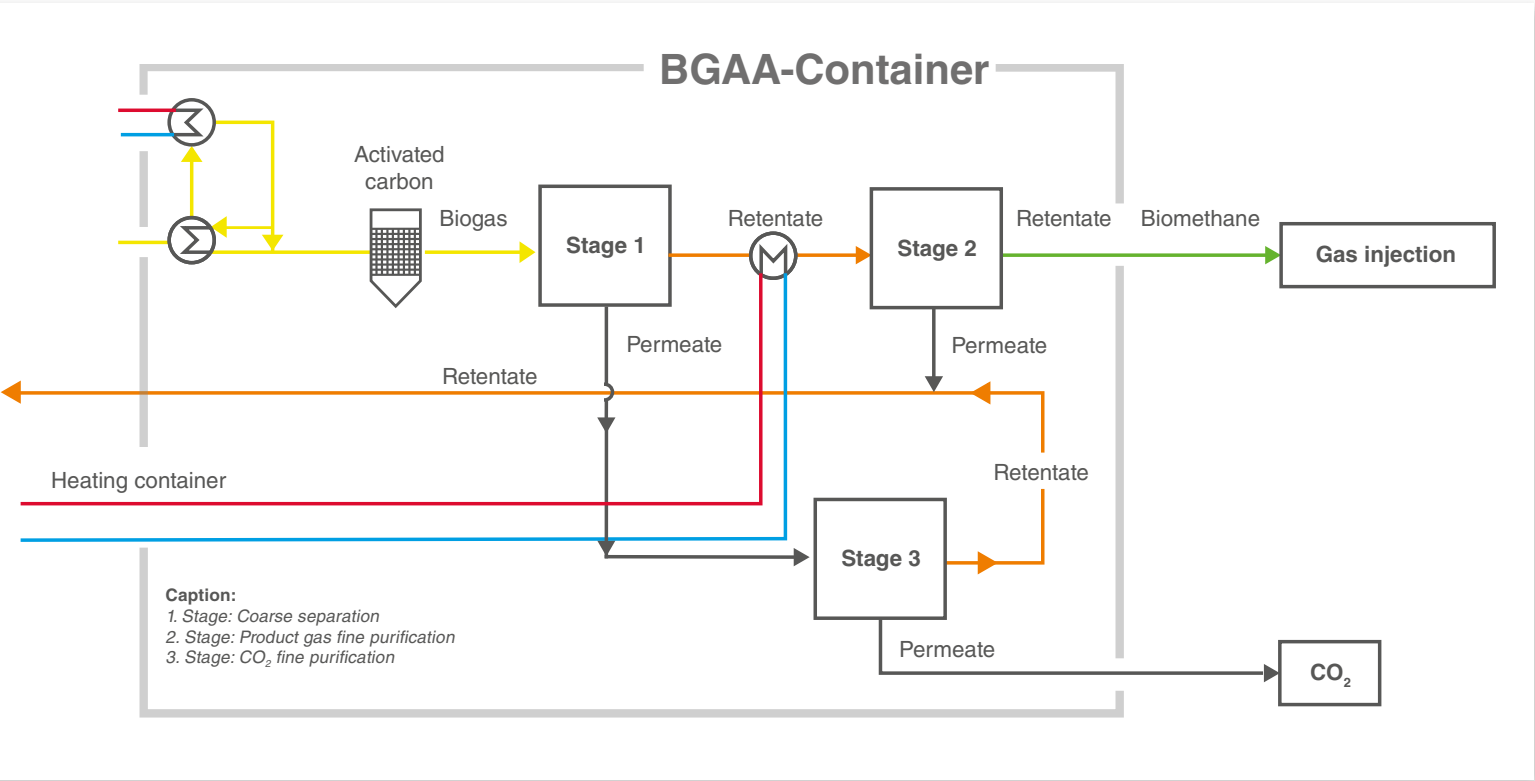
Product gas measurement

The pressure of the raw gas entering the membrane separation stage is regulated by a process controller and in partial load operation delivery pressure is controlled via the compressor variable speed drive.

At the upgrader outlet, a safety shut-off valve is provided to meet the requirements of the grid operator. If gas export is not possible then the product gas can be returned to the biogas plant gas storage.

Flexibility

The agriPure® upgrading technology is a modular and flexible design that can readily adapt to changing flows and gas compositions. The standard capacity range is from 130 Nm<sup>3</sup>/h – 2,000 Nm<sup>3</sup>/h raw gas input.





## EVOLUTION OF A PROVEN SYSTEM

Our biogas treatment agriPure® received a major update. The new agriPure® CUBE creates new possibilities in the area of flexibility, modularity and profitability.

The new modular design allows the system to be adapted to all conditions. The clever linking of individual processes ensures higher efficiency and complete scalability of the entire system. The unique modularity and flexibility enable uncomplicated and cost-effective adaptation of the system even after commissioning.

Performance remains a priority with the agriPure®: with a methane recovery of over 99.4 % and excellent energy efficiency. Standardised components ensure easy operation and maintenance.

A Rubik's Cube inspired us to name it „Cube“ because the many cleverly adapted and linked modules and processes make a perfect big picture.

## YOUR ADVANTAGES AT A GLANCE

- ✓ Standardised components and design ensure simple operation and maintenance
- ✓ Latest space-saving and highly efficient EVONIK membrane technology
- ✓ Sophisticated heat recovery and cooling system: significantly less process energy is required
- ✓ Clever plant design: by intelligently linking the modules and process steps
- ✓ Redesigned modular structure for easy expansion of the plant, even in the case of component replacement
- ✓ Modular unit in one block: reduced space requirement, significantly reduced cable distances

## WITH "CUBE", EVERYTHING FALLS INTO PLACE

When flexibility, modularity and plant profitability become the keywords, our new model variant agriPure® CUBE is just right for your needs.

### MODULARITY:

Several configurations are available for your biomethane project. From this multitude of possibilities, you can configure the agriPure® CUBE exactly according to your wishes and needs. Thanks to the modular concept, you can easily adapt the system to new conditions or replace individual components with much less effort.

### FLEXIBILITY:

The agriPure® CUBE concept also incorporates the idea of scalability. This means that you can easily expand your plant or already include a planned increase in power in the concept during the initial configuration. This leads to significantly lower costs when repowering. This leaves all options open to you.

## EFFICIENCY:

With our know-how for the process engineering, we have created a coherent plant system that is unparalleled on the market thanks to sophisticated energy recovery. By integrating heat recovery, our heating system is exceptionally efficient. The surplus heat from the compressor, the vapour recovery and the gas cooling is fed into the heating circuit.

A sophisticated system whose aim is to provide the most efficient and cost-effective biogas and upgrading plant possible. We use the latest and highly efficient membrane technology from EVONIK, which allows for highest methane yields.





agriPure® Cube

Our Variety of Models.

The perfect solution for every project.

MODEL CUBE		135	EXTENSION	225	EXTENSION
Biogas	Nm³/h	135	up to 225	225	up to 480
Biomethane	Nm³/h	73	up to 122	122	up to 259
Compressor	kW	55	75/110	75	110/160
Active carbon filter	m³	1 x 1	2 x 1 m³	1 x 1	2 x 1 m³

MODEL CUBE		335	EXTENSION	480	EXTENSION
Biogas	Nm³/h	335	up to 480	480	up to 590
Biomethane	Nm³/h	181	up to 259	259	up to 319
Compressor	kW	110	160/200/250/2 x 110	160	200/250/315
Active carbon filter	m³	2 x 1	2 x 1,5 m³/ 1 x 3 m³ + platform + crane	2 x 1	2 x 1,5 m³/ 1 x 3 m³ o. 1x5m³ + platform + crane

MODEL CUBE		590	EXTENSION	710	EXTENSION
Biogas	Nm³/h	590	up to 710	710	up to 950
Biomethane	Nm³/h	319	up to 383	383	up to 513
Compressor	kW	200	250/315/2x200	250	315 / 400
Active carbon filter	m³	2 x 1,5	1 x 3 m³ o. 1 x 5 m³ o. 2 x 3 m³ + platform + crane	2 x 1,5	1 x 3 m³ o. 1 x 5 m³ o. 2 x 3 m³ o. 2 x 5 m³ + platform + crane

MODEL CUBE		950	EXTENSION	1100	EXTENSION
Biogas	Nm³/h	950	up to 1100	1100	up to 1310
Biomethane	Nm³/h	513	up to 595	595	up to 708
Compressor	kW	315	355	355	560
Active carbon filter¹	m³	1 x 5 or 2 x 3 m³	2 x 3 m³	2 x 3 or 2 x 5 m³	2 x 3 or 2 x 5 m

MODEL CUBE		1310	EXTENSION	1525	EXTENSION
Biogas	Nm³/h	1310	up to 1525	1525	up to 2000
Biomethane	Nm³/h	708	up to 825	825	up to 1085
Compressor	kW	560	2 x 315	2 x 315 or 630	individual
Active carbon filter¹	m³	2 x 3 or 2 x 5 m³	2 x 3 or 2 x 5 m³	2 x 5 or 3 x 5 m³	individual

¹ Option: platform + crane



FOCUSSED ON THE  
ESSENTIAL

This system has been complementing our biomethane plants since 2025. Focused on the essentials, the agriPure® Smart impresses with its compact design, smart price and impressive performance.

- ✔ **COMPACT:** The biogas upgrading system fits into a single container and therefore takes up a minimum of space.
- ✔ **SMART:** The secondary circuit has connections for the integration of a mobile emergency heating system.
- ✔ **PERFORMANCE:** The upgrading technology, including Evonik high-quality membranes, remains basically unchanged.

Available in 2 model variants:

- ✔ agriPure® Smart S from 130 to 295 Nm³/h raw gas.
- ✔ agriPure® Smart M from 430 to 620 Nm³/h raw gas.

YOUR ADVANTAGES  
AT A GLANCE

- ✔ Standardised components and a high degree of standardisation ensure easy operation and maintenance
- ✔ The latest, space-saving and highly efficient EVONIK membrane technology
- ✔ Sophisticated heat recovery and cooling system: significantly less process energy is required
- ✔ Clever system design: the intelligent linking of modules and process steps utilises synergies and enables the joint use of modules (such as the heating module)
- ✔ Revised, modular structure for easy expansion of the system, even when replacing components
- ✔ Modular system in one unit: reduced space requirement, significantly reduced pipe and cable routing

AGRITHERM - THE HEATING SOLUTION  
AS THE PERFECT COMPLEMENT

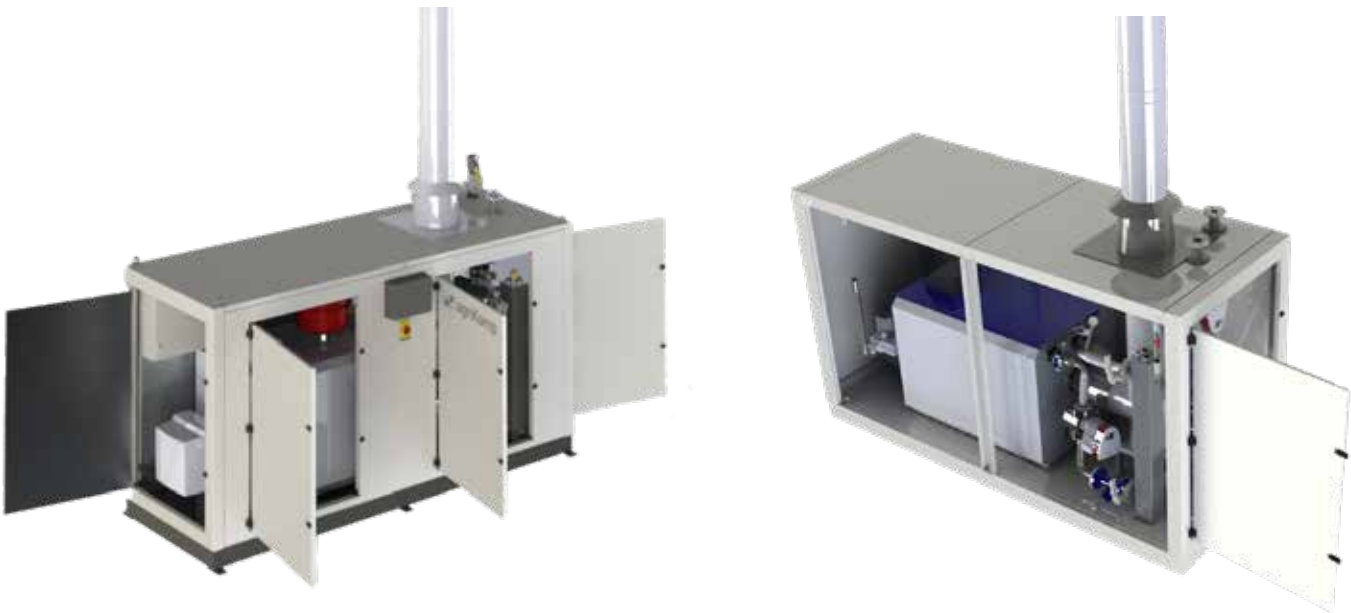
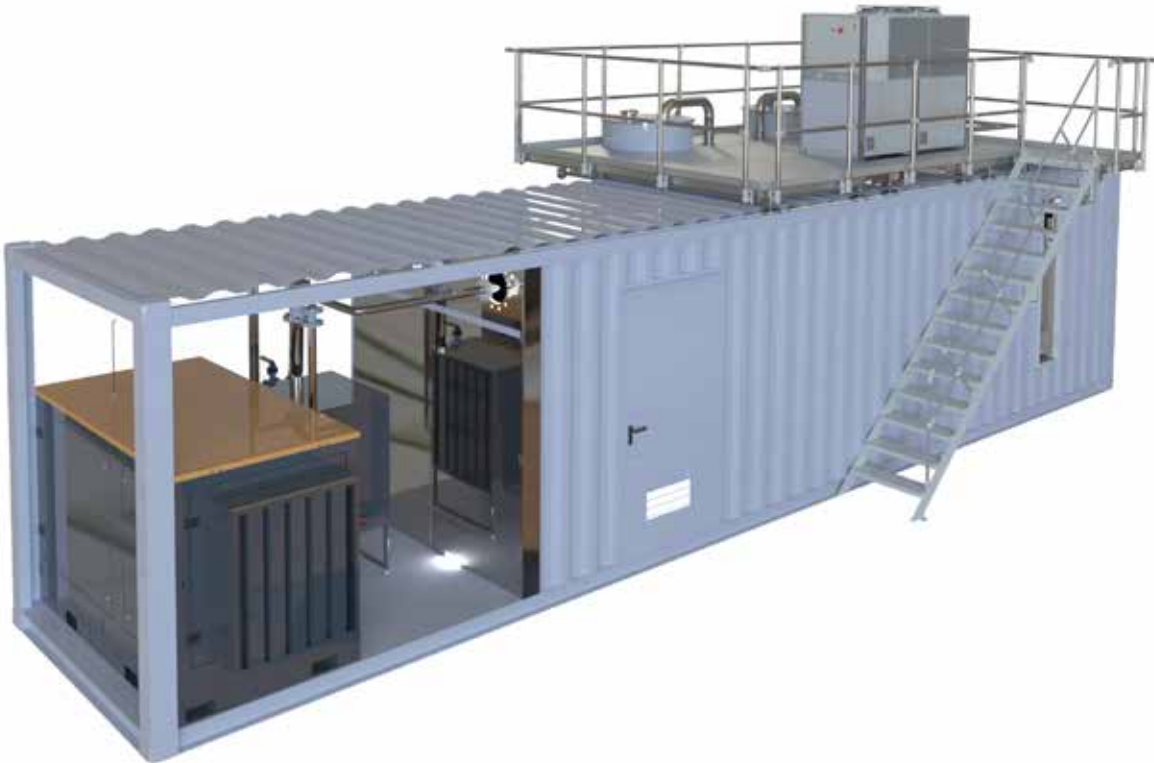
The agriTherm heating system is the ideal addition to the agriPure® Smart to cover the heat requirements of your system. The biogas pre-cleaned in the agriPure® Smart can be used directly to generate heat in the heating system. In addition, up to 40kW of thermal output can be integrated as heat from the agriPure® Smart's compressor.

Optionally, connections can be provided for an additional heating system in the primary circuit, e.g. a CHP unit. Connections are available in the secondary circuit for the integration of a mobile emergency heating system.

The agriTherm 135 / 210 heating system consists of:

- ✔ A hot water generator for up to 135kW/210 kW thermal output
- ✔ A biogas burner incl. gas line and pressure regulator
- ✔ Weather and sound insulation enclosure
- ✔ Dedicated pumps and optimized water circuits for each application: Primary circuit for efficient domestic hot water generation; Secondary circuit for precisely tempered process water; Compressor cooling (BGAA) with integrated heat recovery

AGRITHERM MODEL		135	210
Thermal output	kW	135	225
Thermal efficiency	%	92	92
Min./max. biogas flow	Nm³/h	10 / 28	20 / 44
Width x lenght x height	m	1,2 x 3,4 x 1,9	





agriPure® Smart  
Models and  
technical data.

AGRIPURE® SMART		SMART S			SMART M		
<0,7 % CH <sub>4</sub> -SLIP IN EXHAUST GAS, ENERGY-OPTIMISED		195	250	290	430	530	620
Raw biogas volume flow (dry)	Nm³/h	195	250	290	430	530	620
Length x width x height (without attachment)	m	12 x 2,5 x 2,9			12,2 x 2,5 x 2,9		
Minimum raw biogas flow	Nm³/h	100	160	160	270	270	350
Minimum biomethane volume flow (at 55 % CH <sub>4</sub> )	Nm³/h	56	90	90	151	151	196
Biomethane volume flow at nominal volume flow (at 55 % CH <sub>4</sub> )	Nm³/h	109	140	162	241	297	347
Expected specific electrical energy requirement at nominal flow rate <sup>1,2</sup>	kWh/Nm³ Biogas	0,29	0,29	0,29	0,25	0,25	0,25
Heat recovery at nominal volume flow <sup>3</sup>	kW	36	46	54	73	90	105
Maximum pressure of product gas (inlet pressure)	bar(g)	9	9	9	14	14	14
Volume of the activated carbon filters <sup>4</sup>	m3	2 x 0,8	2 x 0,8	2 x 0,8	2 x 1,3	2 x 1,3	2 x 1,8
Methane slip in the exhaust gas at nominal conditions (standard) <sup>4,5</sup>	%	≤ 0,7	≤ 0,7	≤ 0,7	≤ 0,7	≤ 0,7	≤ 0,7
Membrane type	Type	EVONIK Sepuran					
Process type	Stages	3					
Gas type		slurry, manure and renewable greens / raw materials <sup>7</sup>					
Biomethane quality	Vol.-% CH <sub>4</sub>	> 97					
Automation platform		Siemens TiaPortal					
Visualisation		WinCC					
Remote access		Available					
Gas quality detection		Biogas, biomethane and exhaust gas					

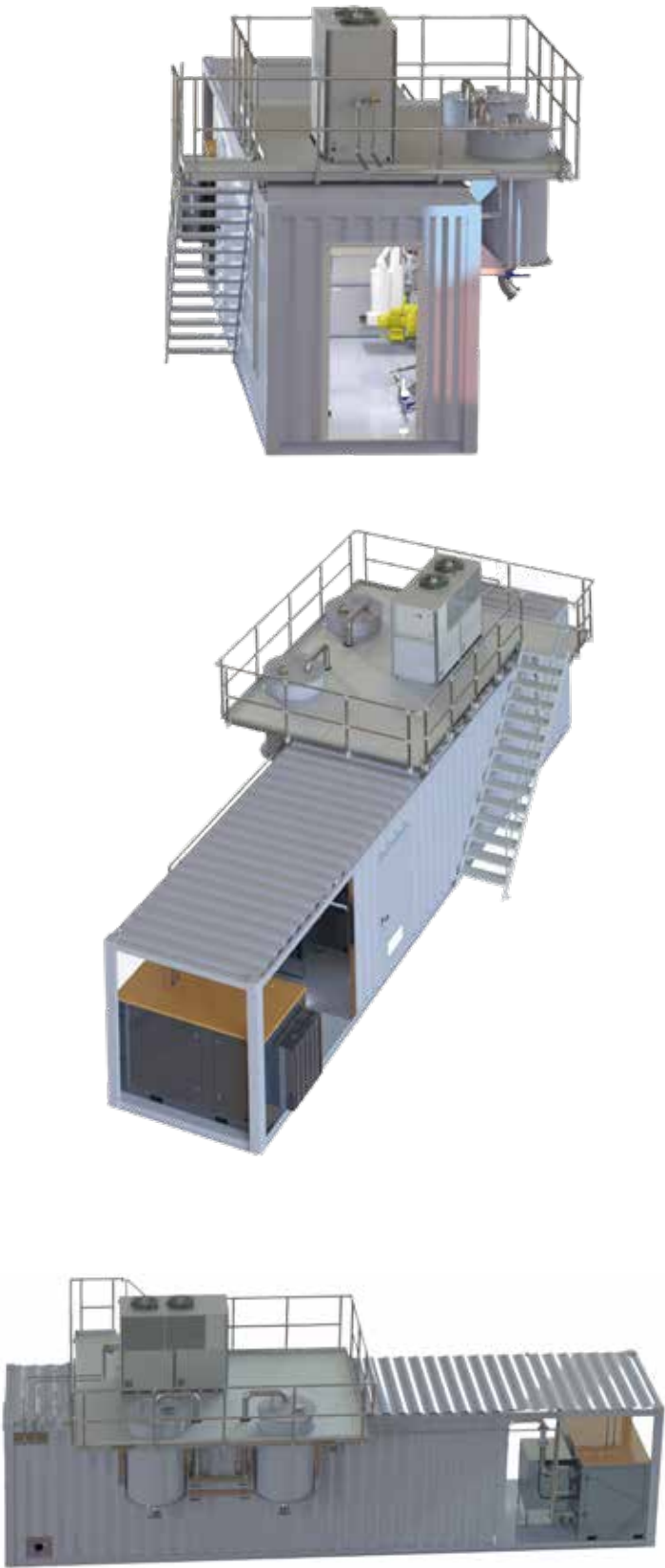
1 Including pre-treatment, compressor and cleaning. This is an estimated value when operating the system close to the optimum operating points for air pressure, gas and air temperature. At feed-in pressure >10 barg, the energy requirement may increase. The guaranteed value for the electrical power consumption at nominal conditions is 8% higher than the listed expected power consumption.

2 Characteristic value at nominal conditions and between 90% and 100% of the nominal volume flow. For 0,5% methane slip, the values for the electrical power consumption apply in compliance with the limit value of 0,5% and a supply pressure of 14 bara; for the more energy-efficient variant with 0,7% methane slip, the guaranteed power consumption applies for a maximum methane slip of <1 % and a supply pressure of 11 bara.

3 At < 50 °C flow temperature upstream of the compressor

4 Optionally available with additional VOC filter

5 Based on the product gas volume



# agriPure®

## Further important components

### FURTHER COMPONENTS

#### HEATING SYSTEM

The agriPure® heating system is a 'plug and play' containerised boiler system with integrated heat recovery. The purpose of the system is to deliver process heat to the digesters and other heat users depending on available capacity. The boiler runs on biogas taken after the pre-treatment stage and supplementary heat is also collected from the compressor and upgrader gas circuit.

By integrating heat recovery from the pre-treatment process, our heating system is outstandingly efficient. Excess heat from the compressor, gas recirculation and gas cooling is fed into the heating circuit - a sophisticated system with the objective of providing the most efficient biomethane plant design.

#### HEAT RECOVERY SYSTEM

A good heat recovery system helps to ensure high efficiency of the whole plant. The available heat ( $\text{kW}_{\text{th}}$ ) corresponds to approximately 50% of the electrical power consumption of the compressor ( $\text{kW}_{\text{el}}$ ). The compressor uses oil for lubrication which heats up during operation and needs to be cooled. As a back-up measure of the system, the compressor can also be cooled using integrated emergency coolers. In addition to the compressor, heat is also recovered from gas cooling and the combined heat recovery is located in the heating system container.

#### CHP

The layout of the agriPure® plant also allows integration of a CHP for own use electricity production. This may be an interesting point, especially in the case of high electricity costs.

If you opt for a CHP unit in your agriPure® Cube, we remove the heating tank/boiler and add a CHP unit and a power-to-heat (PTH) module. The CHP regulates its electrical output depending on the electricity demand of the biogas plant and biogas upgrading. When more electricity is needed, the rest of the electricity demand is drawn from the grid.

The CHP will also supply heat for the biogas plant. If more heat is needed, the CHP will supply electricity to the PTH module, which will convert it into heat. The PTH module is therefore a security for the heat supply and will only be in operation for a few days in winter.

In the Cube variant, the same cooling and desulphurisation system is used for the CHP and the BGAA (biogas upgrading plant). This means that no completely new agriClean system has to be installed for the new CHP.

#### AUTOMATION

The upgrading plant control system is substantially automated, ensuring safe and convenient operation. Operator intervention is minimal and generally limited to routine daily inspections and attention to any notifications of operational disturbance. All essential components and sub-controllers are linked with the main plant control and diagnostics and system maintenance activities are possible via remote access.

- ✓ PLC programming based on Siemens Simatic
- ✓ Visualisation Win CC
- ✓ Integration of the high-pressure compressor controller into the plant visualisation
- ✓ Integral data management and operation data collection
- ✓ Possibility of remote access

#### GAS ANALYSIS

The system gas flow analysis is a single integrated system:

- Raw biogas input – measured for:  $\text{CH}_4$ ,  $\text{CO}_2$ ,  $\text{O}_2$ ,  $\text{H}_2\text{S}$
- Hydrogen Sulphide ( $\text{H}_2\text{S}$ ) - measured before, during and after activated carbon filter.
- Oxygen ( $\text{O}_2$ ) in biogas - measured for upper explosive limit
- Biomethane (product gas) – measured for  $\text{CH}_4$ ,  $\text{CO}_2$ ,  $\text{O}_2$

#### POST COMPRESSION

For feeding into high-pressure grids, the gas grid operator requires a higher pressure at the transfer point. For this case, we offer a complete post-compression solution that is placed between the biogas upgrading unit and the injection station and is a single integrated unit. The post-compression set consists of a buffer tank and compressor (including switch cabinet), which is enclosed in a custom-built container.

#### INJECTION STATION

The injection station is used to analyse and regulate biomethane to be injected into the grid. The station is usually owned by the network operator and is often also built and operated by the network operator.

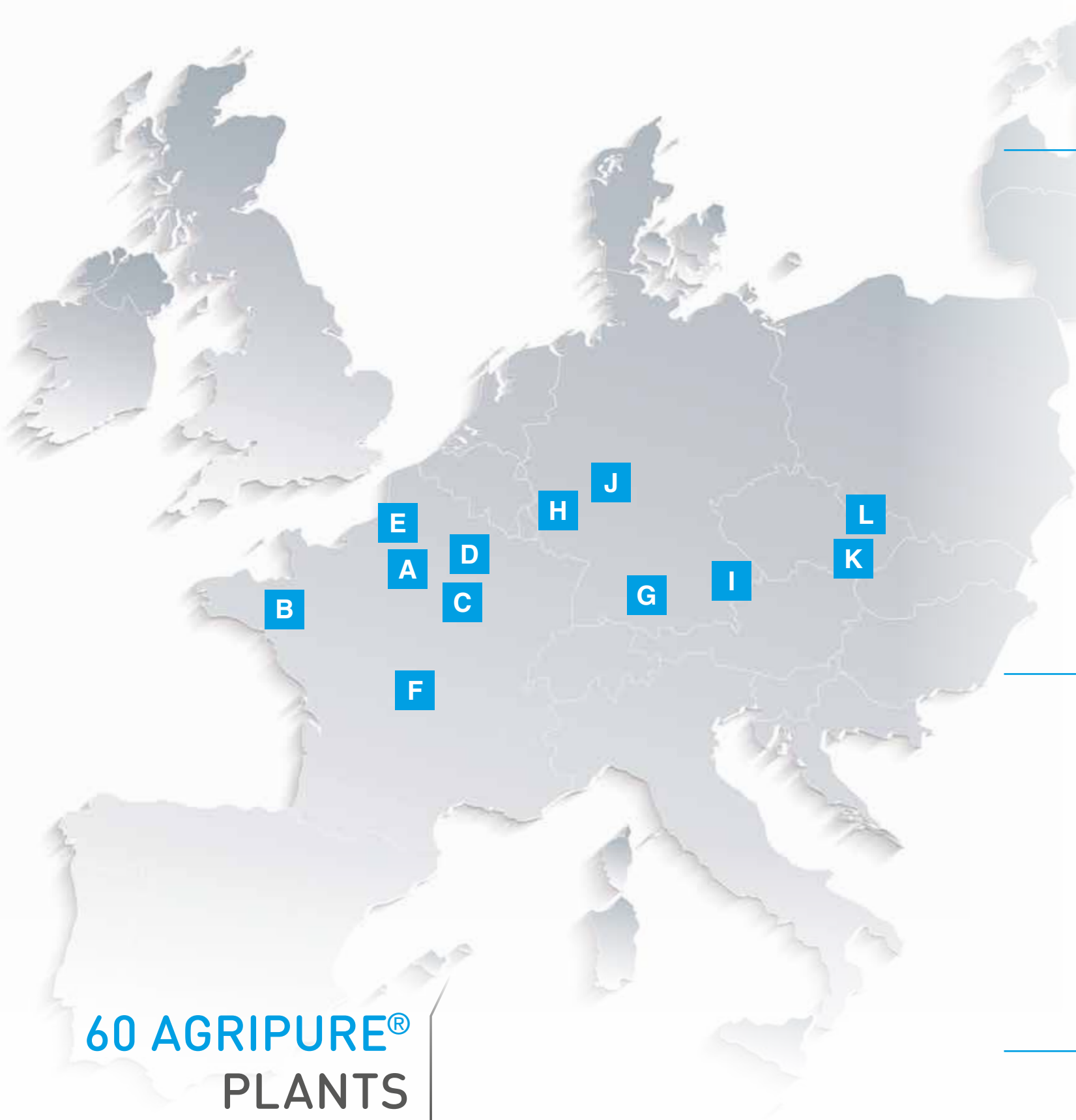
##### Essential functions:

- ✓ Structural connection between the biogas upgrading plant and the gas grid.
- ✓ Calibrated measurement of the biomethane (measurements relevant to billing, such as gas volume measurement and measurement of calorific parameters)
- ✓ Gas quality measurement
- ✓ Conditioning of the biomethane (adaptation of the combustion properties of the biomethane to those of the natural gas in the gas grid)
- ✓ Pressure regulation of the biomethane to meet the network pressure





Our biomethane references  
speak for themselves



REFERENCES FRANCE

<b>A</b>	<b>SAS Chemin du Roi</b> Saint-Crépin-Ibouvillers, France
Commissioning	2021, extension 2025
Inst. Capacity [Nm³/h]	1.100 / 500 (biogas/biomethane)

<b>C</b>	<b>SAS Biogaz Melda</b> Villacerf, France
Commissioning	2024
Inst. Capacity [Nm³/h]	560 / 270 (biogas/biomethane)

<b>E</b>	<b>SAS BGS Agri</b> Feuquières, France
Commissioning	2022
Inst. Capacity [Nm³/h]	750 / 370 (biogas/biomethane)

<b>B</b>	<b>SAS Friche Margot</b> Boisgervilly, France
Commissioning	2020
Inst. Capacity [Nm³/h]	195 / 80 (biogas/biomethane)

<b>D</b>	<b>SAS METHALIA</b> Mont-Saint-Martin, France
Commissioning	2022
Inst. Capacity [Nm³/h]	400 / 150 (biogas/biomethane)

<b>F</b>	<b>SAS 2F2B Energie</b> Letelon, France
Commissioning	2022
Inst. Capacity [Nm³/h]	400 / 185 (biogas/biomethane)

REFERENCES GERMANY:

<b>G</b>	<b>Kerler Energie</b> Salgen, Germany
Commissioning	2024
Inst. Capacity [Nm³/h]	950 / 520 (biogas/biomethane)

<b>I</b>	<b>BGA Oberindling GmbH &amp; Co. KG</b> Pocking, Germany
Commissioning	2025
Inst. Capacity [Nm³/h]	480 / 260 (biogas/biomethane)

<b>H</b>	<b>NAWARO-Energie Pickließem</b> Pickließem, Germany
Commissioning	2024
Inst. Capacity [Nm³/h]	590 / 320 (biogas/biomethane)

<b>J</b>	<b>Biolandhof Klein Biogas GmbH</b> Leun, Germany
Commissioning	2025
Inst. Capacity [Nm³/h]	335 / 182 (biogas/biomethane)

REFERENCES CZECH:

<b>K</b>	<b>BPS Rakvice s.r.o.</b> Rakvice, Czech Republic
Commissioning	2024
Inst. Capacity [Nm³/h]	220 / 114 (biogas/biomethane)

<b>L</b>	<b>Paseka, Zemědělská a.s.</b> Krakořice, Czech Republic
Commissioning	2025
Inst. Capacity [Nm³/h]	500 / 270 (biogas/biomethane)

60 AGRIPURE®  
PLANTS  
WORLDWIDE

In 2025, almost 60 agriPure® plants will be under construction or in operation around the world.

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speak for themselves



THIS WAY TO THE  
VIRTUAL TOUR



<b>C</b>	<b>SAS Chemin du Roi</b> Saint-Crépin-Ibouwillers, France
<b>Commissioning:</b>	2021 2025 (repowering)
<b>Inst. capacity [Nm³/h]:</b>	1.100 / 500 (biogas / biomethane)
<b>Operator :</b>	Collective of several farms with mixed cultivation
<b>Specials:</b>	The plant was upgraded to an agriPure® Cube in 2025 and expanded with a CO <sub>2</sub> liquefaction system, which is sold on to the industry.



SUSTAINABLE  
BIOMETHANE PRODUCTION

The basic idea behind the conversion from CHP operation to biomethane feed-in was to produce biomethane for the local gas grid as sustainably as possible. During the day, the biogas is processed into biomethane using PV and CHP electricity and at night, when there is no sunshine, the processing is left to rest. In terms of plant design, it is the first plant in Germany that can flexibly produce biomethane and cover its entire own electricity requirements with PV and CHP electricity.

<b>G</b>	<b>Kerler Energie</b> Salgen, Germany
<b>Commissioning</b>	2013 (biogas plant) 2024 (biogas upgrading)
<b>Inst. Capacity [Nm³/h]</b>	950 / 520 (biogas / biomethane)
<b>Operator</b>	Family business with a focus on dairy farming.
<b>Specials</b>	The plant is powered 100% by photovoltaic and CHP electricity. The sophisticated heat recovery system enables process heat to be provided for raw biogas production.



IN JUST 3 YEARS TO FEEDING  
INTO THE GAS GRID!

"We started thinking about our project at the end of 2017 when we learned that we would be allowed to feed into the GRTgaz grid nearby. Then, at the beginning of 2018, the decision was made to implement this project.

We chose agriKomp because of the ease of operation and the proximity to the sales staff and technical managers. We had already visited many biogas plants, including several from agriKomp, which convinced us in terms of technology and operational management."

Grégoire OMONT

