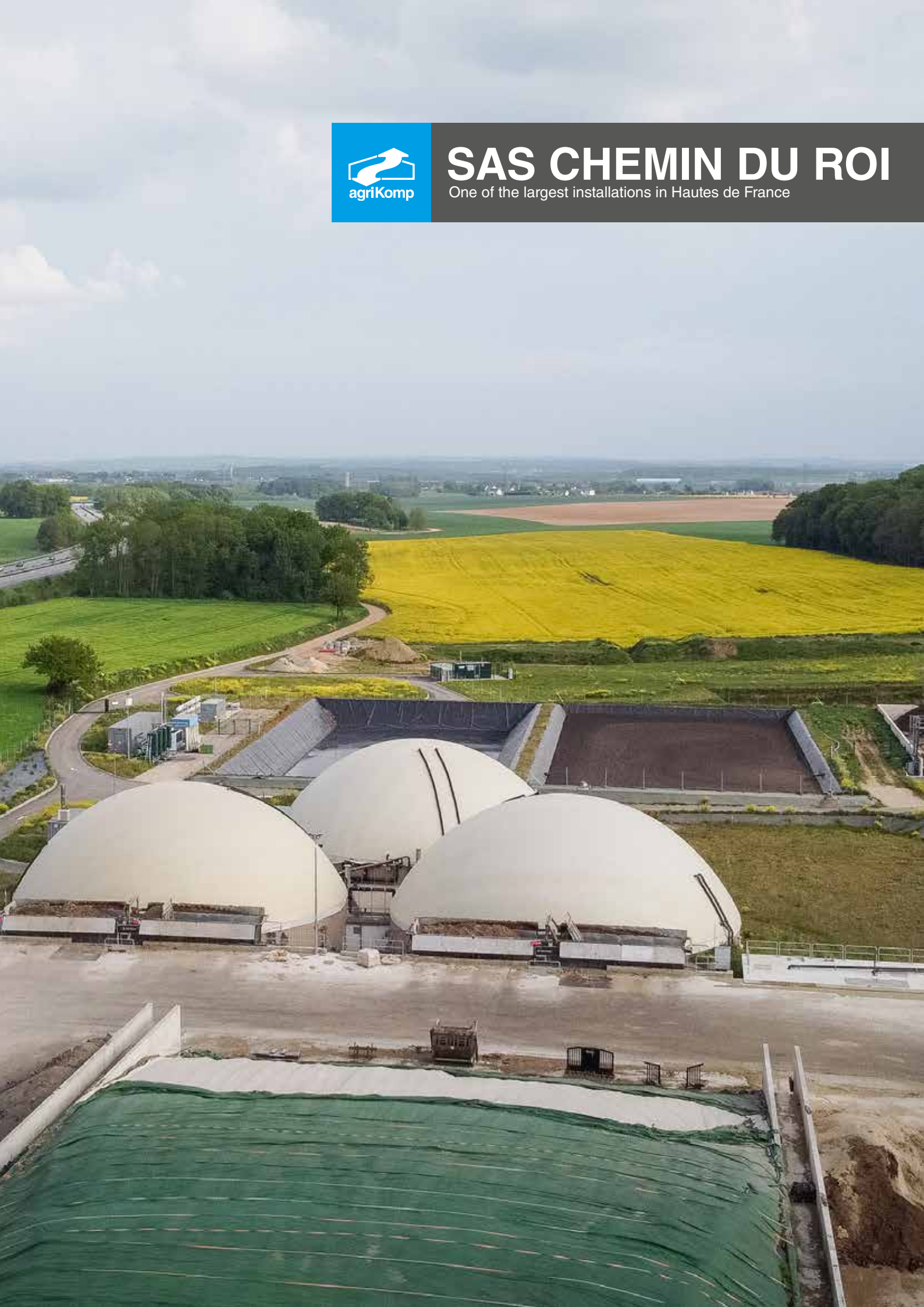
SAS CHEMIN DU ROI

One of the largest installations in Hautes de France



CASE STUDY –
One of the largest installations in Hautes de France

THE PROJECT

The biomethane plant „Chemin du Roi“ in France has been in operation since February 2021 and produces biogas, which is then upgraded to biomethane. It is a joint project of five farmers from the department of Oise. In total, the operators cultivate around 1,200 hectares. The plant currently has a processing capacity of 750 Nm³/h of raw gas and biomethane has been fed into the GRTgaz grid since May 2021.

The company uses agricultural residues, liquid manure, by-products from food production and renewable raw materials such as catch crops to produce biogas in the biogas plant. The plant needs about 84 tonnes per day for production, which corresponds to a total volume of over 30,000 tonnes per year. The plant has large storage capacities. Two 100 m³ tanks are available for slurry storage. The solid feedstock is stored on a total of 6000 m² of mobile silo.

«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», explains Gregoire Omont, one of the operators.

PLANT OVERVIEW

The plant is an agriPure® biomethane plant. biomethane plant. The plant was designed and built with two digesters and a secondary digester. The total capacity is 2,500 m³. The plant is fed via two Vielfrass® Standard with double troughs, each with a storage volume of 96 m³. Through the moving floor elements, the solid substrate is fed into the fermenters fully automatically by two feed screws.

Four Paddelgigant® agitators per fermenter ensure perfect mixing. The paddle agitators mix the substrate to achieve the best possible results and prevent floating layers. In addition, our agitators are designed for very low speed, which is gentle on the bacteria and results in low power consumption.

Raw biogas is used for heating. This is burnt separately and supports the anaerobic process with the ideal temperature. For the storage of the biogas, supporting air roofs are installed on each of the three tanks. These consist of a double-shell membrane system made of PVC and PE.

An agriPure® 750 is used for upgrading biogas to biomethane. It achieves a maximum flow rate of up to 750 Nm³/h of biogas to be purified.

A membrane separation process is used in the treatment with the agriPure®. The used Sepuran GREEN membranes from Evonik are very powerful and durable. The processed biomethane is fed into the gas grid in France by Dalkia. The fermentation residues are stored separately. Storage space is available for several months.

THE RESULT

The plant is, as of today, one of the largest plants in Hautes de France. It produces a total of 19,620 m³ of liquid and 6,540 t of solid fermentation product. This is spread on 18 municipalities and thus on approximately 2,000 ha of agricultural land as high-quality fertiliser.

The gas production results in a total output of about 23,429,000 kWh per year. Converted, this is the electricity consumption of about 22,000 people in the same period. In addition to the effect of the circular economy and the associated utilisation of liquid agricultural residues to produce high-quality fertiliser, an important contribution is also made to the energy transition.