

## **PRESS RELEASE**

### **RUHE company group launches the first bio-LNG plant in Brandenburg, Germany**

Parmen (Uckermark), October 26, 2023 - It's almost done! In Parmen in the Uckermark region, RUHE company group is realizing its second production plant for sustainable bio-LNG. The plant will have a capacity of 7.5 tons per day and will go into operation in November. The fuel from local production will soon supply the region around the site. Last year, RUHE launched Germany's first compact plant in Darchau near Lüneburg, which produces up to 2.5 metric tons of carbon-neutral fuel per day for trucks and tractors. In 2024, the RUHE Group, which manages its activities from its headquarters in Lüsche, Lower Saxony, plans to implement a further eight plants with a total capacity of more than 60 tons of bio-LNG per day at customer sites and the group's own sites. Thanks to its compact design, the model can become a role model for many agricultural operations in Germany and Europe.



*Image: Bio-LNG plant in Parmen*

Until now, farms have mostly used biogas to generate electricity. The new plant in Parmen, like its sister site in Darchau, will instead partially produce Bio LNG ("Bio Liquefied Natural Gas"). The green fuel can be used to power trucks, tractors, ships and buses in a climate-friendly way. Biofuel from agricultural residues can be a new business model for many farmers. "As RUHE company group we are focusing on sustainability and regional energy concepts from agriculture for the future. A decisive building block for this is the production of bio-LNG, as we are thus further expanding our contribution to a regional circular economy," says Thomas Rolfes, Managing Director of the RUHE group of companies.

#### **Negative carbon footprint of fuel from bio-LNG**

RUHE has already completed the certification of the three participating biogas plants in Parmen according to the criteria of the RED<sub>Cert</sub> EU system. The bio-LNG is to be distributed to the German market within a regional radius via the filling station network of a partner company. The RUHE Agrar division, which within the group focuses on the management of agricultural operations as well as biogas plants, intends to use a partial

quantity to operate its own vehicles. Trucks with the appropriate technical equipment have already been purchased or converted.

With the second model plant, company founder and shareholder Kunibert Ruhe wants to send another strong signal for the decarbonization of heavy-duty transport. “With our concept for biogas plants, we can actively shape the energy transition in the transport sector,” Ruhe said. “With our initiative, we also want to give the industry the urgent tailwind for locally produced, decentralized and renewable energies. With this project, for the first time in Germany, bio-LNG will be produced decentrally via a dedicated microgas network to link several biogas plants. This is another milestone for the biogas industry,” Ruhe said. The upgrading and liquefaction plant at the Parmen site is supplied with additional raw gas via a micro gas network of eight kilometers between the biogas plants in Fürstenhagen and Parmen and of about six kilometers between the biogas plants in Fürstenwerder and Parmen.



*Image: Converted Fendt 936 of the RUHE Group with Bio-LNG front tank*

The carbon footprint of using bio-LNG as a fuel is negative if waste products such as slurry and manure from farms in the region are used for production. Using the methane released during the fermentation process prevents it from entering the atmosphere. The energy density of bio-LNG is high – one kilogram of bio-LNG contains about 1.4 times more energy than one liter of diesel. The advanced fuel has the potential to replace an annual volume of around 3.8 million liters of diesel fuel, saving around 27,000 metric tons of CO<sub>2</sub>eq.

### **Demand: Policymakers must unleash the potential of bio-LNG**

So far, the wind for bio-LNG has been blowing rather from the front: At the beginning of 2023, large quantities of imported biofuels from Asia that were presumably mislabeled had turned the domestic biofuel market upside down and caused uncertainty. That is why Maximilian Ruhe, Managing Director of Ruhe Biogas Service GmbH, now expects politicians to support the establishment of sustainable bio-LNG production “made in Germany”. “We need legal governance that quickly clarifies suspected fraud in the biofuels market and gives players confidence and the ability to plan ahead. In addition to speed of decision-making, this includes a clear commitment to double counting of advanced biofuels and extending greenhouse gas reduction targets to 2040 to leverage

the potential of green fuel from biogas.” Until now, bio-LNG has also been treated in the same way as LNG from fossil natural gas production abroad in terms of energy tax. A distinction should be made here between sustainable and fossil fuel.

In addition, the sustainability characteristics of bio-LNG are similarly not taken into account when toll rates are charged. Trucks account for six percent of all vehicles on German roads and cause 30 percent of total CO<sub>2</sub> emissions. Policymakers have so far focused solely on electromobility and hydrogen for their decarbonization. “We need more openness to technology here,” demands Maximilian Ruhe. Specifically, he cites toll collection, where, according to the current state of negotiations, the “tank-to-wheel” principle is to apply, which only includes emissions during vehicle operation. With a legally anchored “well-to-wheel” approach, the entire life cycle of the fuel would instead be taken as a basis, so that the sustainable production of the fuel would also be included in the assessment, as is the case with bio-LNG. “If all of the manure produced in Germany is processed for bio-LNG production, more than 35% of the heavy truck traffic can be supplied with fuel. Due to the enormous greenhouse gas reduction potential, this would make all heavy-duty traffic climate-neutral and thus reduce 30% of Germany’s total CO<sub>2</sub> emissions,” emphasizes the biogas expert.

For Dr. Timm Kehler, Member of the Executive Board of Zukunft Gas, the transformation to climate neutrality in heavy commercial vehicles also represents a major challenge. He calls for a rethink on the part of policymakers: “Bio-CNG and Bio-LNG are already making a significant contribution to reducing transport-related CO<sub>2</sub> emissions. In contrast to other technologies, the technology is already mature and affordable and can thus generate CO<sub>2</sub> savings immediately. Unfortunately, the enormous efforts of biogas producers to further increase the share of climate-neutral fuel from waste and residual materials have not been rewarded by politicians to date. We therefore call for the introduction of a “carbon correction factor” that could accelerate climate protection in freight transport in the short term. It’s also time for the federal government to recognize bio-CNG and bio-LNG as an effective way to mitigate CO<sub>2</sub> in heavy-duty transportation and to support investment in biogas plants.”

### **Project partners in Parmen**

Several companies of the RUHE Group are involved in the Bio-LNG project in Parmen. In addition to the group’s three biogas plants, this also includes RUHE Biogas, which is supporting the operator of the new bio-LNG plant with a feasibility study as well as marketing and sustainability certification – also in future operations.



*Image: Drone image of the Bio-LNG plant in Parmen*

Green Line Liquid Anlagenbau GmbH is supplier for planning, preparation of approval documents and delivery of the complete plant consisting of:

- Pretreatment (desulfurization and drying)
- Upgrading (gas separation carbon dioxide and methane)
- Polishing (final gas treatment before liquefaction)
- Biomethane liquefaction (cooling down to  $-155^{\circ}\text{C}$ )
- 100 cubic meters cryogenic bio LNG tank (storage)
- LNG loading system for transport trucks
- Bio LNG dispenser system to refuel own vehicles

Anyone who would like to find out more about the RUHE Group's Bio-LNG initiative and exchange information is cordially invited to visit the RUHE stand C41 in Hall 09 at the Biogas Convention in Nuremberg from December 12 to 14.

### **About us**

The RUHE group of companies is a family business based in Lüsche near Vechta in Lower Saxony, founded in 2010 by Kunibert Ruhe and Thomas Rolfes. RUHE aims to contribute to the success of the energy transition with innovative, sustainable concepts for agriculture. The growing group of companies currently employs around 200 people in Lower Saxony, Mecklenburg-Western Pomerania, Brandenburg and Saxony-Anhalt. The RUHE Agrar division focuses on the management of farms and biogas plants at agricultural locations. The RUHE Biogas division, led by Maximilian Ruhe, provides its customers with solutions for the construction, operation and servicing of bio-LNG plants. RUHE Biogas built the first compact Bio-LNG plant in Germany in 2022 for the production of green fuel for trucks, buses, tractors and ships. The standardized and scalable plant is marketed domestically and internationally.

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