PRESSRELEASE

Blueprint for farmers: Germany's first bio-LNG compact plant in Darchau, Lower Saxony, produces CO_2-neutral fuel for trucks

Lower Saxony's Minister of Agriculture Barbara Otte-Kinast and former German President Christian Wulff inaugurate the plant on August 9 together with the board of the Darchau Agricultural Association.

Darchau/Amt Neuhaus, August 9, 2022 - Liquid manure and dung from the region will become CO2-neutral biofuel for heavy-duty transport! The Agrarvereinigung e.G. Darchau presses the green start button today on its novel bio-LNG plant. The compact 500 kilowatt plant, inaugurated in the presence of Lower Saxony's Minister of Agriculture Barbara Otte-Kinast and former German President Christian Wulff, serves as a model for many farms throughout Germany. Whereas biogas was previously mostly used to generate electricity, the plant in the Lüneburg district near the Elbe River produces liquid bio-LNG ("Bio Liquefied Natural Gas") instead. This can then be used to power trucks and buses - in a climate-neutral way. Biofuel from agricultural residues represents a new business model for farmers.

The bio-LNG plant in Darchau is more about sophistication than superlatives. Its daily production of up to three metric tons initially seems comparatively small - especially in view of the major task of making the republic's energy supply independent of Russia in all sectors. However, it is precisely its compactness that offers enormous potential as a blueprint for a nationwide rollout. "We could do with a lot of small, decentralized bio-LNG plants in Germany right now," says Kunibert Ruhe, board member of Agrarvereinigung e.G. Darchau and shareholder of RUHE Biogas Service GmbH "Agricultural businesses can produce biogas self-sufficiently in the form of a circular economy using residual materials from their own farms and from businesses in their region and refine it into bio-LNG."

Bio-fueling station for trucks

Ruhe is one of the pioneers of the biogas plant industry in the country and founder of RUHE Biogas Service GmbH from Lüsche near Vechta, which further developed and helped build the plant. The compact unit in Darchau alone replaces about 1.3 million liters of fossil diesel per year and saves up to 7,000 tons of CO_2. "In principle, any agricultural operation can become a bio-LNG production facility. The new liquefaction module can be retrofitted to operators of existing bio-gas plants who are looking for a follow-up concept to the EEG subsidy for the conversion of biogas into electricity," explains expert Ruhe. Bio-LNG is therefore attractive to farmers because heavy goods traffic is desperately seeking a climate-friendly alternative.

Great potential for a traffic turnaround

Although trucks account for only six percent of all vehicles on German roads, they cause 30 percent of all CO_2. Fossil liquefied gas, which is already widely used today, can also replace diesel, but only reduces emissions by up to 20 percent. The CO_2 balance of bio-LNG, on the other hand,

is even negative if the fuel is produced from agricultural waste products. Kunibert Ruhe extrapolates the potential: "Only about 30 percent of farm manure is currently used in conventional biogas plants. If we were to use 100 percent in the future and process it into bio-LNG, we could supply about 37 percent of the truck fleet." This does not include other residual materials from agriculture, such as straw and fodder residues. The annual production of CO_2-free fuel from the Darchau plant has already been contractually secured by Q1 Energie AG, an energy and service station company based in Osnabrück.

Standardized module

With the help of the blueprint from Darchau, bio-LNG production could be rapidly expanded. The average size of biogas plants in this country is 500 kilowatts. The project managers, including RUHE Biogas Managing Director Maximilian Ruhe, son of the founder, have also geared their concept to this standard. The services of the family business include consulting, planning and the construction of turnkey liquefaction plants. The northern Italian cooperation partner Ecospray Technologies is the technical development partner for converting biogas into bio-LNG as well as a tank and loading system in order to transport the liquefied gas to the filling station.

“This inauguration is a really meaningful moment for Ecospray. We are proud to be part of this project and to present our technology that allows the local production of this first bio-LNG, directly from the livestock manure.

Following the pioneering partnership project dedicated to the creation of bio-LNG in 2021 and the agreements signed on Mars 2022 which have solidified our joint commitment to bio-LNG and bio-LCO_2 production, this plant is the realization of our idea of decarbonization of transport and a true example of energy transition through the use of carbon-neutral biofuels. For this reason, we consider this inauguration a significant milestone for our decarbonization roadmap including the challenging 2030 and 2050 targets set for the maritime industry” says Alberto Di Cecio, the Ecospray’s General Manager.

The module can be used by operators of biogas plants and can also be retrofitted. The EU and the state of Lower Saxony are also impressed by the scalability of the technology: Agrarvereinigung e.G. Darchau has received subsidies for the project amounting to 55 percent of the investment costs from the European Regional Development Fund (ERDF) as part of the directive for granting subsidies to improve the supply of alternative fuels in Lower Saxony.

For more details on the concept of Germany's first bio-LNG compact plant, visit https://www.ruhe-biogas-service.de/, and for information on Agrarvereinigung e.G. Darchau, visit https://www.ruhe-agrar.de/regionen/darchau/.

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