

PRESS RELEASE

## Lime Industry: Electrochaea Participates in Pioneering Project to Cut CO<sub>2</sub> Emissions

- World's largest CO<sub>2</sub> reduction project of its kind launched
- Electrochaea from Germany delivers renewable methane technology
- 90,000 tons of CO<sub>2</sub> saved per year and per plant
- Project investment of 150 million euro for the construction of the pilot plant

**Munich/Planegg, Germany, February 18, 2021** - With the aim of drastically reducing the high CO<sub>2</sub> emissions in lime and cement production, the power-to-methane specialist Electrochaea is working together with the Belgian lime producer Carmeuse, the energy company Engie, the Engie subsidiary Storengy, and the mechanical and plant engineering group John Cockerill.

The companies plan to build the first advanced scalable plant to convert CO<sub>2</sub> into renewable green gas for the lime and cement industries based on biological methanation technology. The plant will be built near Charleroi in Belgium. The total investment cost for the project is over 150 million euros. The consortium has applied for funding within the framework of the EU Innovation Fund and IPCEI (Important Project of Common European Interest). The project implementation would start in 2022 and be operational in 2025. This makes it the largest project of its kind in the world for CO<sub>2</sub> savings in the lime industry. By using Electrochaea's leading biological power-to-methane technology, up to 90,000 tons of CO<sub>2</sub> can be recycled per year and per plant.

### **Lime: Economically Important Industrial Material with High CO<sub>2</sub> Emissions**

Lime, an industrial material produced from limestone, is used in the production of iron, steel, glass, and chemical products, and also in building and road construction, drinking water and wastewater treatment, and industrial waste gas purification. The burning of limestone (calcium carbonate, CaCO<sub>3</sub>) at high temperatures to produce quicklime (calcium oxide, CaO) releases as much as 1.2 tonnes of CO<sub>2</sub> per tonne of lime. Approximately two thirds of the CO<sub>2</sub> released during lime production is process- and raw material-related and cannot be avoided. The lime industry can drastically reduce greenhouse gas emissions and address the release of CO<sub>2</sub> by separating and recycling the CO<sub>2</sub> as an input to the production of renewable natural gas.

Previous technologies for recycling CO<sub>2</sub> have not proven economical, as they require expensive purification of CO<sub>2</sub> before recycling can be realized. Electrochaea has developed and is bringing to market a recycling technology without these limitations. *"This is a big advantage over all other processes because we don't have to purify the CO<sub>2</sub>. So, there is no need for a significant costly step,"* explains **Dr. Doris Hafenbradl, Managing Director and Technical Director of Electrochaea.**

## **Microorganism Turns CO<sub>2</sub> and Green Hydrogen into Renewable Natural Gas**

Electrochaea's technology takes CO<sub>2</sub> that would otherwise be released into the atmosphere during lime production and creates methane, a fuel that can replace natural gas. The methane is synthesized by microorganisms using captured CO<sub>2</sub> and green hydrogen. The Carmeuse project consortium is building one of the world's largest electrolysis plants with a capacity of 75 Megawatts to supply the hydrogen. The renewable methane produced at the Charleroi plant will be of the quality for injection into the Belgian national gas grid and the quantity sufficient to supply 15,000 four-person households with gas for heating, hot water and cooking. This is roughly equivalent to 240 Gigawatt hours of gas per year. The renewable gas can also replace fossil fuel in industry or transportation applications. Construction of the plant is scheduled to begin in 2022.

## **Widespread use of Electrochaea's Technology during Lime Manufacturing can Advance Climate Goals**

To achieve the 2015 Paris Agreement climate goals, CO<sub>2</sub> emissions must be decreased by as much 45% by 2030. Worldwide, 430 million tonnes of lime is manufactured, resulting in more than 0.5 billion tonnes of CO<sub>2</sub> released per year. It is urgent that CO<sub>2</sub> savings be realized in the production of lime. With CO<sub>2</sub> capture and utilization, Electrochaea's technology can create a fuel to replace natural gas and prevent the emission of this air pollutant. *"Our goal is to offer our CO<sub>2</sub> reduction solution worldwide and wherever large quantities of CO<sub>2</sub> are emitted. Our technology is efficient, very flexible and reliable. The lime and cement industry could benefit greatly from this,"* explains **Dr. Mich Hein, Chief Executive Officer and Managing Director of Electrochaea**. In Europe and the US, where 22 million tonnes and 18 million tonnes of lime are manufactured, respectively, Electrochaea's method offers an enormous opportunity for CO<sub>2</sub> reuse.

**About Electrochaea:** Founded in 2014, Electrochaea GmbH delivers innovative, patented technology to produce high-quality, renewable methane that, like natural gas, can be stored and used on demand through the existing gas grid. Industrial-scale pilot plants have been operated in the U.S., Switzerland and Denmark. The company is planning to produce more than 15 billion cubic feet per year of renewable methane by 2025. Electrochaea's technology has been awarded the Swiss Watt d'Or energy prize and listed by FOCUS magazine as one of the most important technologies for climate and the environment. Electrochaea is headquartered in Munich-Planegg, Germany, with offices in Denmark and the U.S. [www.electrochaea.com](http://www.electrochaea.com)

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