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Water electrolysis plant for international research project to reduce CO₂ emissions

Chemnitz, January 21, 2021: Chemieanlagenbau Chemnitz (CAC) has successfully completed a water electrolysis plant at the RWE site in Niederaussem, North Rhine-Westphalia as part of the international, globally unique research project ALIGN-CCUS. The goal of this project is to develop a technological chain for reducing CO₂ emissions and put this into operation. This will see CO₂ separated directly from industrial emissions, as it can be captured in far higher concentrations there than in the air. Assigned by Asahi Kasei Europe GmbH, the licensor for the water electrolysis, CAC successfully undertook the approach of planning, procurement, assembly and commissioning. For CAC, this is the first plant with this newly-developed technology.

The plant consists of skid mounted modules with the water electrolysis as well as a hydrogen compression and hydrogen treatment unit. The electrolyser developed by Asahi Kasei and integrated into a fully-automated plant separates water into hydrogen and oxygen. The CO₂ obtained from an existing RWE facility and the hydrogen as produced are the feedstocks to produce dimethylether (DME), which can subsequently be transformed into synthetic fuels.

ALIGN-CCUS research project

In the ALIGN-CCUS project 34 companies, research institutes and universities from throughout Europe are pursuing the goal of transforming six European industrial regions into economically robust centers with significantly reduced CO₂ emissions by 2025.

The partners received 15 million euros of funding at European and national level, working in six interlinked research areas on carbon capture, utilization and storage (CCUS). ALIGN-CCUS is the only project of its kind worldwide to construct and test a fully-integrated carbon capture and utilization chain (CCU) in an actual industrial environment. Find out more about the ALIGN-CCUS project at: <https://www.alignccus.eu/>

Asahi Kasei Corporation

Asahi Kasei Corporation is a globally active, diversified technology company with activities in the fields of basic chemicals, plastics and synthetic fibers, pharmaceuticals, construction materials, prefabricated houses, styrene-butadiene rubber, microporous foils for lithium batteries and electronic components. With about 40,000 employees around the world, the Asahi Kasei Group serves customers in more than 100 countries and achieved sales of 17.6 billion euros (2,170.4 billion yen) in the fiscal year 2019 (April 1, 2019 – March 31, 2020). In addition, for many years Asahi Kasei Group has been a key and preferred technology partner for CAC in the business field of chlor-alkali electrolysis.

About Chemieanlagenbau Chemnitz GmbH (CAC)

Reliable, experienced and approachable, CAC is an internationally leading company in the field of plant construction as well as process and chemical engineering. In the business fields of inorganic chemicals, refineries and petrochemicals, gas technology and industrial plant CAC offers the entire range of services of an engineering and plant construction company. This begins with the development of a concept, continues through the planning stage and turnkey construction to the point of commissioning of complex plant and plant units – in close co-operation with the customer at all times. With around 400 employees, 270 at the headquarters in Chemnitz, CAC has constructed over 350 industrial plants worldwide in the course of over 55 years. More information about Chemieanlagenbau Chemnitz GmbH can be found at: www.cac-chem.de. Part of the group is [HUGO PETERSEN](#) GmbH, the world's largest technology provider for sulphuric acid production as well as gas purification, it has been part of the CAC Group since 2005. Furthermore, in 2006 the Polish engineering company BiProTech Sp. z.o. o. was integrated in the group of companies.

Press Note: A topic-related image is gladly available upon request with the caption: Skid mounted modules of the water electrolysis plant to reduce CO₂ emissions. (©CAC)