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Maersk backs C_1 to make zero-carbon shipping a reality faster – and cheaper.

Berlin-based start-up found a way to mass-produce green methanol at a competitive price / Partnership with the global pioneer in decarbonisation of shipping enables faster scale and technological cooperation.

The Climate tech start-up C_1 has raised growth capital from Maersk Growth, the Venture Capital Arm of A. P. Møller – Maersk to faster scale their ultra-efficient catalysis, which will enable the mass production of green methanol without the usual premium paid for sustainably produced methanol. Besides the ability to function as a carbon-based feedstock for various chemical products, green methanol is the most tangible low-carbon fuel alternative to oil for container vessels today.

“We are proud to have partnered with the global pioneer in green shipping in an industry where many fear a first-mover disadvantage. The 19 methanol-enabled container ships they have ordered already are a strong advanced buying signal into the market. We look forward to joining forces with Maersk to make low climate impact shipping a reality,” states Christian Vollmann, who has founded C_1 together with renowned chemists Dr. Marek Checinski, Dr.-Ing. Ralph Krähnert and Dr. Christoph Zehe.

Shipping accounts for three percent of global CO_2 emissions. The problem is that shipping is a hard-to-abate industry, and electrification is not an option for large ocean-going container vessels as the batteries would take up too much cargo space. Green methanol is the alternative fuel of choice to start decarbonising the shipping industry today and save millions of tons of CO_2. However, price and scale remain a challenge.

“With current technology, powering our vessels with green methanol will be much more expensive. We believe in C_1’s ultra-efficient catalysis to bring down the price – and scale fast with their decentralized approach,” says Maria Strandesen, Head of Future Fuels Innovation at Maersk.

Starting with quantum-chemical simulations, C_1 has invented new ultra-efficient catalysis for green methanol to be produced from waste biomass or CO_2 and H_2, which will enable green methanol to become cost competitive. Due to the containerized design of the C_1-reactor – currently in the pilot stage – production is possible where sustainable feedstocks are available or close to harbours where green methanol is needed to fuel the vessels.

“Green methanol is the most promising way to drastically cut emissions from long-distance shipping at scale in the short term, and we see much traction in that space. We are really excited about C_1’s cutting-edge scientific approach, reinventing every production step. Such a level of innovation and attention to detail is key to success, and we believe that their technology can play an important role in decarbonising hard-to-abate industries, including shipping,” explains Peter Votkjaer Jorgensen, Partner at Maersk Growth, their investment in C_1.

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About C_1

C_1 develops new, climate-friendly chemical production processes by rethinking chemical reactions from the atomic level all the way up to the production scale. The chemical processes are designed with the help of quantum chemical simulations and implemented in proprietary production technologies. In doing so, the Berlin-based company develops and scales exclusively on the basis of renewable raw materials and energy. From the first steps in the development of a production process, all processes are designed to enable a closed carbon cycle. In this way, C_1 supports industry on its way to net-zero.

C_1 was founded by Dr. Marek Checinski (chemist), Dr.-Ing. Ralph Krähnert (chemical engineer), Dr. Christoph Zehe (chemist) and Christian Vollmann (tech entrepreneur). Dirk Radzinski (tech entrepreneur), Dr. Jürgen Hambrecht (former CEO BASF) and Dr. Udo Jung (BCG) sit on the supervisory board. Prof. Matthias Beller (Leibnitz Institute for Catalysis LIKAT) supports as scientific advisor.

Existing investors include Planet A Ventures, Square One Ventures and experienced industry managers such as Jim Hagemann Snabe, chairman of the supervisory board of Siemens, or Prof. Wolfgang Reitzle, most recently chairman of the supervisory board of Linde.

About the C_1 technology

C_1 has developed a fundamentally new proprietary homogeneous catalysis for the production of methanol. The C_1 process is much more selective than the heterogeneous catalysis currently in use, which dates back to a patent from 1921. It works at significantly lower pressure and temperature, allows for more flexible operations, is more tolerant towards feedstock impurities and scales better.

About Maersk Growth

Maersk Growth is the Venture Arm of A.P. Moller–Maersk – with the mission to digitise, democratise, and decarbonise supply chains. We invest in and partner with talented startups, scaleups, and visionary innovators. We support our portfolio companies' strategic potential and generate value for A.P. Moller-Maersk by leveraging our core capabilities – which we refer to as our ABCDEs, Assets, Brand, Customers, Data and Expertise.