

**4 October 2021**

**Holcim Deutschland GmbH  
(‘Holcim’ or the ‘Company’)**

**Holcim and Cool Planet Technologies to Develop Carbon Capture Plant in Germany**

Cool Planet Technologies Limited (CPT), a sustainable technology company focussed on affordable CO<sub>2</sub> capture, and its partner Helmholtz-Zentrum hereon GmbH (Hereon), have signed a Memorandum of Understanding (MoU) with Holcim Deutschland GmbH (Holcim), a global leader in innovative and sustainable building solutions, to build a CO<sub>2</sub> capture plant at Holcim’s Höver cement works, near Hannover, based on Hereon’s PolyActive™ membrane technology.

The objective of the plant is to demonstrate the performance, economics, and operability of the capture technology at scale. Following this the partners will seek to establish a framework for the technology’s implementation in Holcim’s further cement plants in Germany.

Initial tests are scheduled to commence in Q1 of 2022 with the first phase of the project, capturing 5,600 tonnes per annum (tpa) of CO<sub>2</sub>, scheduled for start-up in Q2 2023. If successful, it is planned to expand the plant in two further phases capturing 170,000 tpa and 1.3 million tpa starting-up in 2024 and 2026 respectively. The final phase will capture over 90% of the carbon dioxide emissions from the Höver plant and deliver the CO<sub>2</sub> in high-purity liquid form for use or sequestration.

CPT is working with Hereon, part of the Helmholtz Association of Research Centres, Germany’s largest research organisation, to commercialise their PolyActive™ membrane technology after a decade of development. This technology is designed to capture CO<sub>2</sub> from carbon rich gas streams and has already been technically proven in the laboratory and piloted in two coal-fired power stations.

Membrane technology works by using a selective barrier material that allows the passage of CO<sub>2</sub> in preference to the other gases. Compared with other carbon capture processes, the plant is compact, uses significantly less energy and being passive, does not require consumable chemicals for its operation. The membrane technology can be installed and operated at a low cost, giving it a substantial commercial advantage, and can be easily scaled to suit any application. This technology is an ideal retrofit (or “end of pipe”) solution for existing plants or for installation as part of a new-build plant. The technology can also be quickly started up and shut down and has excellent turndown, providing a high degree of operational flexibility. Hereon’s membrane technology will be at the heart of the process at Höver which also uses standard proven technology from the petrochemical and cryogenic industries

CPT will be the developer, operator, and owner in the carbon capture sector, working with high industrial carbon emitters in Europe and globally to deliver affordable low-cost capture solutions.

**Andrew Corner, Managing Director for CPT, said:**

*“We are delighted to be working with Holcim and helping them to reduce their carbon emissions. Cement will remain an important building material for centuries to come so decarbonising its manufacture is a key part of achieving Net Zero. The technology being provided by CPT and Hereon will capture more than 90% of CO<sub>2</sub> emitted at Höver.”*

*“CPT is committed to bringing affordable decarbonisation solutions to industries and sectors that historically have been hard to decarbonise. We believe that our technology will significantly reduce the cost of capture and help to accelerate the adoption of commercial carbon capture.”*

**Torsten Brinkmann, Head of Department of Process Engineering of Hereon’s Institute of Membrane Research for Helmholtz-Zentrum hereon GmbH, said:**

*“Membrane technology is ideally suited to address the pressing issues posed by climate change and the change in industrial feedstocks expected in the coming years. It allows for the treatment of gas streams employing an easy to use and energy efficient separation technology. The separation of CO<sub>2</sub> from various gas streams has been a focus of Hereon’s research in recent years. The membrane, membrane module and process technologies developed by an interdisciplinary research team has been successfully tested in pilot studies in the energy industry and is ready for the next step towards decarbonising industry in collaboration with Holcim and CPT.”*

**Arne Stecher, Head of Decarbonization for Holcim Deutschland GmbH, said:**

*“Carbon capture will be a must for cement plants in the near future. That is why we are searching for the best carbon capture technology. “Best” for us means : simple, scalable and adaptable in many cement plants; whilst having the lowest production costs to support subsequent utilisation supply chains. The membrane approach of Cool Planet Technologies is a promising solution, therefore we and our partners are on the way to improve the level of technical readiness dramatically.”*

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## **Notes to Editors**

### **About Cool Planet Technologies Limited**

Cool Planet Technologies Limited (CPT) was formed in 2019 to commercialise emerging environmental technologies. The company has a strong management team with backgrounds from the oil and gas and glass reinforced plastic (GRP) pipe technology industries. The team are experienced in product development and manufacture and in the management of large-scale industrial projects.

The company's focus is on CO<sub>2</sub> capture using PolyActive™ membrane technology. We hope that a successful demonstration of the technology at Höver will lead to additional opportunities with the Holcim group, which has approximately 180 manufacturing facilities around the world. The technology is particularly applicable to high CO<sub>2</sub> emitters such as cement, iron and steel, chemicals and coal-fired power generation.

The company plans to manufacture its own membranes/housings, which will be built in a new manufacturing facility in Germany.

CPT intends to leverage the team's experience in the oil and gas industry to develop an end-to-end carbon capture to sequestration service utilising decommissioned gas and oil fields, particularly in the North Sea.

### **About Helmholtz-Zentrum hereon GmbH**

Helmholtz-Zentrum Hereon conducts international cutting-edge research for a changing world: approximately 1,100 employees generate knowledge and innovation to facilitate more resilience and sustainability. Hereon's scientific spectrum encompasses high-performance materials, processes and environmentally friendly technologies for mobility and new energy systems. Furthermore, research is conducted on biomaterials for medicine and for increasing the quality of life. Through research and consulting, Hereon addresses the challenges of climate change in a solution-oriented manner and facilitates sustainable management as well as the protection of the coasts and marine environment through comprehensive scientific understanding. From basic understanding to practical applications – the interdisciplinary research centre covers a unique spectrum.

As part of an international network and as a member of the Helmholtz Association, Hereon supports political, economic and societal institutions in shaping the future through the transfer of its expertise. Founded in 1956, the centre is the largest non-university research institution in Schleswig-Holstein. In addition to its main location in Geesthacht and its site in Teltow near Berlin, Hereon has branches in Hamburg, Kiel, Berlin and Garching bei München. The research centre has an annual budget of approximately 130 million Euros.

### **About Holcim Deutschland GmbH**

Holcim builds progress for people and the planet. As a global leader in innovative and sustainable building solutions, Holcim is enabling greener cities, smarter infrastructure and improving living standards around the world. With sustainability at the core of its strategy Holcim is becoming a net zero company, with its people and communities at the heart of its success. The company is driving the circular economy as a world leader in recycling to build more with less. Holcim is the company behind some of the world's most trusted brands in the building sector including ACC, Aggregate Industries, Ambuja Cement, Disensa, Firestone Building Products, Geocycle, Holcim and Lafarge. Holcim is 70,000 people around the world who are passionate about building progress for people and the planet through four business segments: Cement, Ready-Mix Concrete, Aggregates and Solutions & Products.