

Lafarge, OMV, VERBUND and Borealis join hands to capture and utilize CO₂ on an industrial scale.

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Lafarge Zementwerke, a member of LafargeHolcim Group, OMV, VERBUND and Borealis co-sign a Memorandum of Understanding (MOU) for the joint planning and construction of a full-scale plant by 2030 to capture CO₂ and process it into synthetic fuels, plastics or other chemicals. Climate neutrality, circularity and innovation in Austria are driven by establishing a cross sectoral value chain for carbon capture. This innovative project significantly reduces emissions from cement production, establishing the greenhouse gas CO₂ as a valuable raw material.

In the MOU, the leading industrial players Lafarge, OMV, VERBUND and Borealis agree on collaborating across industry sectors in the project 'Carbon2ProductAustria' (C2PAT). Its objective is to create a cross sectorial value chain and to operate a full-scale plant by 2030 which will eventually capture almost 100% of the annually emitted 700,000 tons of CO₂ at Lafarge's cement plant in Mannersdorf, Austria. The aim is to ultimately use the captured CO₂ as a resource.

In combination with green hydrogen (from renewable energies) produced by VERBUND, the captured CO₂ will be transformed by OMV to renewable based hydrocarbons, which, in turn can be used to produce renewable based fuels or be utilized by Borealis as a feedstock to manufacture value-add plastics.

"We are committed to leading the industry in reducing carbon emissions and shifting towards low-carbon construction. We have worked consistently and successfully on the reduction of the CO₂ footprint of our cement plants, products and solutions. Ultimately, CO₂-neutral cement production can only be possible with the implementation of breakthrough technologies, like Carbon Capture, which is why we have great expectations for the C2PAT project", Lafarge CEO José Antonio Primo points out.

New cross-sectoral value chains support the path from key industries towards climate neutrality

Given that C2PAT is implemented, the 700,000 tons of CO₂ per year can be transformed into synthetic fuel by OMV. On top, the partners aim to investigate a truly circular approach: with Borealis being a key partner, the captured CO₂ can be used for the production of renewable based, value-add plastics. These plastics are especially suited for recycling at the end of their lifetime, and with this, enable a nearly closed CO₂ loop.

Green hydrogen as a means to decarbonize CO₂-intensive industries

VERBUND, Austria's largest electricity company, will supply the green hydrogen used to recycle the captured CO₂: "Green hydrogen is produced when water is electrolyzed using electricity from renewable sources. For the Carbon2ProductAustria-Project we will use green electricity from our renewable generation portfolio," explains Michael Strugl, Deputy CEO VERBUND. "Green hydrogen offers huge potential for decarbonizing CO₂-intensive industrial processes. In order to reach our national and global climate goals we have to collaborate across sectors and join our efforts for decarbonization and climate neutrality."

Taking the next steps towards a Zero CO₂ economy will require the right financial as well as favourable regulatory framework conditions

The success of C2PAT will largely depend on whether the right financial and regulatory framework conditions are created both at the EU and Austrian national level.

With this ambitious collaboration, Lafarge, OMV, VERBUND and Borealis are showcasing an innovative and viable solution for the transformation towards a Zero CO₂ economy in Europe.

Rainer Seele, OMV Chairman of the Executive Board and CEO: "Climate protection requires innovation and cooperation. With this project we aim to do both, and it shows that economic viability and climate protection go hand in hand based on new technologies. CO₂ is not just a greenhouse gas that we have to reduce. It is also a valuable raw material from which we can produce synthetic fuels and feedstock for the chemical industry."

Accelerating the transition from a linear to a circular economy to reduce CO₂ emissions

"Circularity requires us to consider the whole system, and not default to the least change, linear option because it is more convenient," comments Borealis CEO Alfred Stern. "The plastics industry can be a powerful contributor to climate action, through materials replacement that reduces weight, by minimising food waste and by shifting to well-designed circularity that reduces CO₂ emissions. We are excited to join forces with our industry partners on our mission to drive the change towards a Zero CO₂ industry."

Further information

The main objective of C2PAT is to engineer and operate a carbon capture plant at the cement plant in Mannersdorf, Austria as well as to build an infrastructure and a fully operating system for producing renewable based hydrocarbons and using this compound to produce a broad range of renewable based olefins, plastics and fuels. The partners aim to put the full-scale plant into operation by 2030. A first step towards this goal will be to further investigate current technological and economic hurdles by jointly conducting research and development activities regarding the envisaged Carbon Value Chain.

The joint project is designed in 3 phases: In phase 1, the partners are currently evaluating and developing a joint strategy for project development, business modelling and process engineering. Based on the results of phase 1, a cluster of industrial pilot plants in the Eastern part of Austria could be technically developed and realized until 2023 in phase 2. Phase 3 entails the full realization of the presented vision by scaling up to the full size of 700,000 tons of CO₂ to be captured and used and will demonstrate the global scalability of the project.

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Lafarge: Lafarge Zementwerke is a daughter of LafargeHolcim - the global leader in building materials and solutions and a leader in carbon capture and use in Europe. LafargeHolcim employs over 70,000 employees in over 70 countries and has a portfolio that is equally balanced between developing and mature markets. In Austria the company operates two cement plants with an annual capacity of approx. 1.6 million tons of cement. www.lafarge.at and www.lafarge-holcim.com

OMV Aktiengesellschaft: OMV produces and markets oil and gas, innovative energy and high-end petrochemical solutions – in a responsible way. With Group sales of EUR 23 billion and a workforce of around 20,000 employees in 2019, OMV Aktiengesellschaft is one of Austria's largest listed industrial companies. In Upstream, OMV has a strong base in Central and Eastern Europe as well as a balanced international portfolio, with Middle East & Africa, the North Sea, Russia and Asia-Pacific as further core regions. Daily average production was 487,000 boe/d in 2019. In Downstream, OMV operates three refineries in Europe and owns a 15% share in ADNOC Refining and Trading JV, with a total annual processing capacity of 24.9 million tons. Furthermore, OMV has a 36% participation in Borealis, one of the world's leading producers of polyolefins. The Company operates about 2,100 filling stations in ten European countries. OMV runs gas storage facilities in Austria and Germany; its subsidiary Gas Connect Austria GmbH operates a gas pipeline network in Austria. In 2019, gas sales volumes amounted to around 137 TWh. Sustainability is an integral part of OMV's corporate strategy. OMV supports the transition to a lower-carbon economy and has set measurable targets for reducing carbon intensity and introducing new energy and petrochemical solutions.

VERBUND: VERBUND is Austria's leading utility and one of the largest producers of hydroelectricity in Europe. The Group generates around 95% of its electricity from renewable energy, primarily from hydropower. VERBUND trades electricity in 12 countries and generated around EUR 3.9 billion in annual revenue in 2019 with approximately 2,800 employees. With its subsidiaries and partners, VERBUND is active in the generation of electricity, transmission and in international trading and sales. VERBUND has been quoted on the Vienna Stock Exchange since 1988 with 51 % of the share capital being held by the Republic of Austria. Further information: www.verbund.com

Borealis is a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers. With its head office in Vienna, Austria, the company currently has more than 6,900 employees and operates in over 120 countries. Borealis generated EUR 8.1 billion in sales revenue and a net profit of EUR 872 million in 2019. Mubadala, through its holding company, owns 64% of the company, with the remaining 36% belonging to Austria-based OMV, an integrated, international oil and gas company. Borealis provides services and products to customers globally, in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC) and with Baystar™, a joint venture with Total in Texas, USA. www.borealisgroup.com | www.borealisverminds.com

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Carbon2ProductAustria - Press release

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