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PRESS RELEASE

Direct Air Capture, e-Methanol and CO_2 Electrolysis Technologies Win "Best CO_2 Utilisation 2026" Innovation Award

Three pioneering CCU and Power-to-X technologies recognised by live audience vote at the CO_2-based Fuels and Chemicals Conference 2026

Hürth, 06 May 2026: On 28-29 April 2026 the CO_2-based Fuels and Chemicals Conference 2026 brought together nearly 170 participants to discuss the latest developments in Carbon Capture and Utilisation (CCU) and Power-to-X technologies. A key highlight of the event was the presentation of the "Best CO_2 Utilisation 2026" innovation award, recognising outstanding technological advances in the field.

The award, co-organised by nova-Institut and CO_2 Value Europe and sponsored by Yncoris, honours innovative solutions that convert CO_2 into fuels, chemical building blocks and materials.

This year's winners – RAPCO2 (Italy), Aerleum (France), and OCOchem (USA) – were chosen by a live audience vote from six nominated innovations. Their technologies showcase complementary pathways for industrial CO_2 utilisation, spanning Direct Air Capture with integrated conversion to e-fuels, scalable e-methanol production, and electrochemical processes that produce carbon-negative intermediates such as formate and ethylene.

Three winning technologies converting CO_2 into fuels and chemicals

Collectively, the six nominees reflect the rapid maturation of CO_2 utilisation, highlighting solutions that range from distributed capture technologies to industrial-scale fuel synthesis and advanced electrochemical conversion. The three winning innovations selected by the audience demonstrated that CCU progresses in a particularly impressive way:

First Place: RAPCO_2 (IT) – BlueLeaf and eJungle

RAPCO_2 brings two indoor Direct Air Capture (DAC) products to the market: the first is BlueLeaf, is equivalent to one hectare of forest and is capable of capturing the CO_2 produced in small shops or offices. The second, eJungle, is a sort of "jungle 2.0", equivalent to 80 BlueLeaf combined, which not only captures CO_2 at a larger scale but also converts it into an intrinsically safe chemical product, sodium acetate. The CO_2 captured by BlueLeaf and eJungle is converted into acetate through a patented bioreactor, which is able to regenerate the DAC material at very low energy demand. The acetate

collected is then processed in the main plant, which goes through a ketonisation-hydrogenation step to isopropyl alcohol (IPA). IPA is a safe, non-toxic eFuel with a higher calorific value than others (e.g., methanol) and with greater potential for applications.

https://www.rapco2.com/

Second Place: Aerleum (FR) – Direct Carbon Utilisation Technology

Aerleum's Direct Carbon Utilisation technology enables the direct conversion of atmospheric industrial CO_2 into valuable commodities such as fuels and chemicals. This integrated and patented technology is designed for scalable industrial deployment, delivering carbon-neutral products at competitive cost.

The first application is e-methanol, a versatile low-carbon fuel and chemical feedstock that can be used primarily in aviation (converted into jet fuel) and in maritime shipping (as a drop-in fuel). Beyond mobility, e-methanol also provides a sustainable building block for the chemical industry, enabling the production of everyday goods with a lower carbon footprint. By targeting hard-to-abate sectors, Aerleum offers a practical, scalable, and high-impact pathway to decarbonisation.

https://aerleum.com

Third Place: OCOchem (US) – OCOchem FluX Electrolyzer 400

The OCOchem Carbon FluX Electrolyzer (CFX) 400 electrocatalytically regenerates captured carbon dioxide and water into sustainable formic acid or potassium formate. The CFX 400 employs a stack of 4 large industrial-scale CO_2 electrolyzer cells using the company's in-house fabricated Axial FluX Gas Diffusion Electrodes, each measuring 15,000 cm^2 , over 6 times larger than previously reported. The modular factory-fabricated system was deployed and commissioned in 6 weeks, produces 60 tons/year, operates at 85 % Faradaic Efficiency with a high current density (250 mA/cm^2) and has a demonstrated Axial FluX Gas Diffusion Electrode durability of over 1200 hours. The first commercially available carbon-negative formates began shipping in October 2025 to 5 different customers.

http://www.ocochem.com

The three additional nominees included ICODOS from Germany, producing eMethanol; CERT Systems from Canada, with an electrochemical pathway to ethylene production; and CYNiO from Germany, producing CO_2-based isocyanates.

nova-Institut contributes expertise in renewable carbon cycles and supports the defossilisation of the chemicals and material industry. CO_2 Value Europe connects stakeholders across the CCU value chain, and Yncoris enables industrial implementation through infrastructure, engineering support and operational expertise.

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Since the mid-1990s, the nova-Institute has been dedicated to sustainability and today focuses primarily on renewable carbon cycles. As an independent research institute, it supports companies – particularly from the chemical, plastics, and materials industries – in the use of renewable carbon derived from biomass, direct CO_2 utilisation (CCU), and recycling.

With a multidisciplinary team of scientists, the nova-Institute participates in international innovation projects and provides science-based management consulting. The institute follows a holistic approach: its experts analyse which technologies and raw materials are suitable for specific products, in which markets their application is feasible, which regulatory frameworks apply, how sustainable the solutions are, and how they can be successfully positioned in the market.

Based on these analyses, the team develops tailored strategies to support the transformation from fossil to renewable carbon. Around 50 experts from various disciplines work together to drive the defossilisation of industry – for a climate-neutral future.

More information: **www.nova-institute.eu – www.renewable-carbon.eu**

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