Press release

nova-Institut GmbH (www.nova-institute.eu)
Hürth, 26 March 2020

Innovative and sustainable ideas can't be stopped by the Corona crisis! The winners of the innovation award "Best CO_2 Utilisation 2020" are Air Vodka made from CO_2, a biological methanation process as grid-scale energy storage solution and a direct air capture solution for CO_2

At nova-Institute's first online conferences on PtX and Carbon Capture and Utilization (CCU), 50 speakers presented and discussed the future of aviation fuels and carbon dioxide as feedstock! www.co2-chemistry.eu

In the face of the current crisis, nova-Institute decided to defy the circumstances and found a new format for its events: The "1st European Summit on CO_2-based Aviation Fuels" (in cooperation with IASA) and the "8th Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers" took place as a successful three-day online conference. The conference featured major topics such as policy and innovation, renewable carbon and renewable energy, carbon capture, electrochemistry, hydrogen production, CO_2 for chemicals, kerosene and fuels, and polymers.

170 participants from all over the world followed the 50 speakers online who presented their latest technologies and strategies and the most recent achievements in science, industry and policy. The online conference was a quick solution to avoid cancelling or postponing the conference. The experiment succeeded, nova-Institute's team mastered the challenge, convinced speakers to stay on board, and found a suitable technical implementation in just a few days: Excellent presentations and lively online discussions ensured satisfied participants. Speakers and participants were enthusiastic about the conference, having found an opportunity for exchange in these difficult times, in which almost all events were cancelled or postponed. And they are already looking forward to the personal meetings next year.

Physicist Michael Carus, founder and CEO of organizer nova-Institute, a science-based research and consultancy company, on the innovation award winner and the outcome of the conference:

"The winning product, a vodka made from CO_2 and renewable energy, will not be able to save the climate. But ethanol made from CO_2 and renewable energy has a significantly lower carbon, land and water footprint than ethanol made from biomass. Ethanol from biomass requires a much larger area of land, fertilisers and pesticides, and the agricultural and fermentation processes even emit CO_2. But even more

importantly, Air Vodka demonstrates lively and in an understandable way to politicians and the public what can be done with CO_2 and renewable energies.
And that is so important. The conference showed impressively that in just a few years large quantities of kerosene, fuels and standard chemicals and polymers can be produced from CO_2 and solar, wind or hydro power – instead of fossil fuels. Several companies, including large ones, are in the starting blocks. Only a few political decisions are needed to achieve a breakthrough. The technologies to end the fossil age are ready!"

Best CO_2 Utilisation 2020

One highlight of the conference was the innovation award "Best CO_2 Utilisation 2020". Six new technologies and products from four different countries had been selected out of 13 applications. After short presentations of all nominees, the three winners were elected online by the participants of the "8th Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers".
The innovation award was sponsored by Covestro, world-leading supplier of high-tech polymer materials, and organised by nova-Institute and CO_2 Value Europe, the only association exclusively dedicated to Carbon Capture and Utilisation (CCU).

The innovation award "Best CO_2 Utilisation 2020" went to Air Co. (USA) for their Air Vodka from CO_2 and renewable energy. The second winner was Electrochaea (Germany), presenting their Power-to-Gas technology with biological methanation as a grid-scale energy storage solution, and the third winner was Climeworks with their direct air capture (DAC) technology.

First place

Air Co. (USA): Air Vodka from CO_2
Air Co., an organisation that created the world's first ever carbon negative spirits. Utilising ground-breaking, proprietary technology to transform carbon dioxide into the purest, highest quality and most sustainable alcohol on the planet, Air Co. improves the air we breathe every day. With core inputs of only carbon dioxide, water and renewable electricity, Air Co.'s production method actively helps prevent climate change by removing the most abundant greenhouse gas from our planet (CO_2) and turning it into ultra-high purity alcohol. The first application is the world's first carbon negative spirit, Air Vodka.
www.aircompany.com

Second place

Electrochaea (Germany): Electrochaea Power-to-Gas Technology with Biological Methanation – a grid-scale energy storage solution
Electrochaea is commercialising a grid-scale energy storage solution. Our proprietary Power-to-Gas (P2G) process converts renewable energy and carbon dioxide into grid-quality renewable methane for storage and distribution. In Switzerland and Denmark, plant operators are already injecting renewable methane into commercial gas grids. Electrochaea provides a technology based on biological methanation that makes it possible to store renewable energy and recycle CO_2 in a cost-effective way. This allows efficient energy and CO_2 storage as renewable methane. When renewable power is available but not immediately used, renewable

methane can be stored in the gas grid, thereby enabling a growing market for renewable electric power and creating a growing source of renewable gas.
www.electrochaea.com

Third place

Climeworks (Germany): First commercial direct air capture (DAC) technology
Climeworks captures CO_2 from air with the world's first commercial direct air capture (DAC) technology. The Climeworks DAC plants capture CO_2 with a filter and are powered solely by either waste or renewable energy. They play an important role in the production of fuels from air-captured carbon dioxide and green power. A new facility on the premises of Karlsruhe Institute of Technology (KIT) combines all four steps required to produce synthetic fuels from air and green power in the project "Kopernikus". Climeworks DAC technology secures the supply of CO_2 from air. Through electrolytic splitting, Fischer-Tropsch synthesis and hydrocracking, the production of synthetic fuel is proven. This way, fuels of high energy density can be used in a carbon-neutral way and green power can be stored.
www.climeworks.com

The nova-Institute would like to thank all sponsors, partners and media partners for the great support of this unique event. Enviro Ambient (USA) supported the conference as a Gold Sponsor and Total (France/Belgium) as Bronze Sponsor.

Special thanks also go to IASA (International Association for Sustainable Aviation e.V.) for co-organizing the 1st European Summit on CO_2-based Aviation Fuels and to EnergieAgentur.NRW, premium partner of both events.

We would also like to thank Professor Dr Andreas Pinkwart, Minister of Economic Affairs, Innovation, Digitalization and Energy of the State of North Rhine-Westphalia, for his patronage of the conference.

More information on the "8th Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers" (www.co2-chemistry.eu). The next "Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers" will take place on 22–24 March 2021 in Cologne, Germany.

Please find pictures and impressions from the award ceremony at www.nova-institute.eu/press/?id=186

Find all nova press releases, visuals and more free-for-press purposes at www.nova-institute.eu/press

Responsible for the content under German press law (V.i.S.d.P.):

Dipl.-Phys. Michael Carus (Managing Director)
nova-Institut GmbH, Chemiepark Knapsack, Industriestraße 300, DE-50354 Hürth (Germany)

Internet: www.nova-institute.eu – all services and studies at www.bio-based.eu
Email: contact@nova-institut.de
Phone: +49 (0) 22 33-48 14 40

nova-Institute is a private and independent research institute, founded in 1994; nova offers research and consultancy with a focus on bio-based and CO_2-based economy in the fields of food and feedstock, technology, economy, markets, sustainability, dissemination, B2B and B2C communication and policy. Every year nova organises several leading conferences on these topics. nova-Institute has 35 employees and an annual turnover of more than 3 million €.

Get the latest news from nova-Institute, subscribe at www.bio-based.eu/email