Demonstrating sustainable value creation from industrial CO2 by its thermophilic microbial conversion into acetone

PYROCO$_2$ LAUNCH EVENT & M12 PROJECT MEETING

Sustainable value creation from industrial CO_2 – Technological, industrial, and societal perspectives on the Green Deal implementation

Twenty leading industrial and research partners from eleven countries have teamed up to prove that large-scale conversion of industrial carbon emissions into value-added chemicals and materials is possible. As a game changer for European carbon-intensive industries, PYROCO$_2$ will pave the way for the sustainability of Europe's chemical industry.

The project will demonstrate the scalability and economic viability of Carbon Capture and Utilization (CCU) to make climate-positive acetone out of industrial CO_2 and green H_2. The acetone produced by the PYROCO$_2$ process will be demonstrated as an ideal platform for the catalytic synthesis of a range of chemicals, synthetic fuels, and recyclable polymer materials from CO_2, generating a portfolio of viable business cases and pre-developed processes for replication and commercialization. The project will develop, build, and operate a

large-scale demonstration facility at Herøya Industrial Park in Porsgrunn, Norway, as a lighthouse for innovative CCU technologies in Norway, Europe, and beyond. Besides the large-scale demonstration and full financial, regulatory, and environmental assessment of the PYROCO₂ technology, the project will explore the sphere of public acceptance and market exploitation to further encourage the emergence of the CCU market. For this reason, PYROCO₂ will represent a key driver for the emergence of CCU Hubs across Europe.

PYROCO$_2$ LAUNCH EVENT

After its cancellation in December 2021 due to Covid-19, PYROCO₂ has been officially presented on September 21st, 2022, through a PROJECT LAUNCH EVENT organized by SINTEF, the coordinator of the project.

The public event "*Sustainable value creation from industrial CO₂ - Technological, industrial, and societal perspectives on the Green Deal implementation*" took place in Porsgrunn, Norway and gathered representatives from industry, funding agencies, research organizations, policymakers and other societal stakeholders to discuss key aspects of the objectives set by the EU Green Deal to achieve a sustainable, climate-neutral Europe by 2050.

The event kicked off with the welcome speech by Terje Riis-johansen, Mayor of the Vestfold and Telemark County Council.

Then three main topics were covered:

1) **The Green Deal and the green industry transition - Roles of industry, legislation, and public funding** to address the central roles played by industry, policymakers, and public funding agencies to accelerate and stimulate the green transition, with contributions by Krzysztof (Chris) Bolesta (CCUS Team Leader in the Directorate General for Energy at the European Commission), Eli Aamot (SINTEF Executive Vice President) and Mari Sundli Tveit (Chief Executive of The Research Council of Norway).

Figure 1: From the left: Mari Sundli Tveit, Krzysztof (Chris) Bolesta and Eli Aamot.

Figure 2: Eli Aamot, SINTEF Executive Vice President

2) **Integrated carbon management for a circular economy**, during which the panelists Anastasios Perimenis (Secretary General CO2 Value Europe), Ole Jørgen Marvik (Special Advisory from Life Science at Innovation Norway), Tor Gautestad (Senior Manager Project and Process, Project Manager Brevik CCS, Heidelberg Cement/Norcem) and Birgit Lewandowski (Director of Development at Electrochaea GmbH) discussed the critical importance of carbon management and how this needs to be taken into serious consideration to achieving a thriving, circular economy.

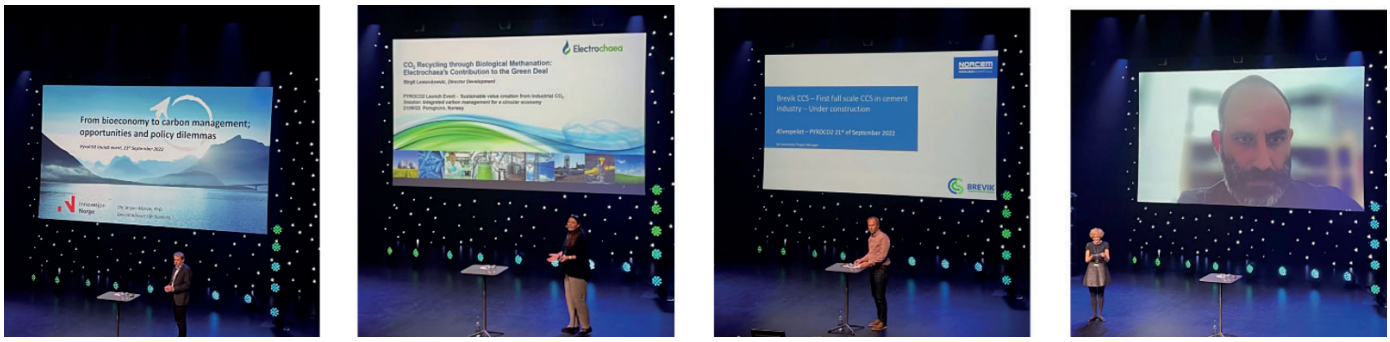

Figure 3: From the left: Ole Jørgen Marvik, Birgit Lewandowski, Tor Gautestad, Anastasios Perimenis

3) **Technical solutions for more sustainable manufacturing processes** were presented by Kjetil Larsen (CEO of NORNER), Torbjørn Ølshøj Jensen (CEO of SecondCirle), Stephen Poulston (Research Manager at Johnson Matthey), Francisco Gírio (Head of Bioenergy Department at National Laboratory of Energy and Geology LNEG), Håvard Sletta (Chief Marked Developer and Centre Director of a Centre for Research-based Innovation at SINTEF) and Duncan Akporiaye (Research Director Department Process Technology at SINTEF), stressing the role of science and technology as the master tool to achieve a green transition at the industrial level and how the interaction between industry and research can be considered a means of channeling the innovation directly into manufacturing processes.

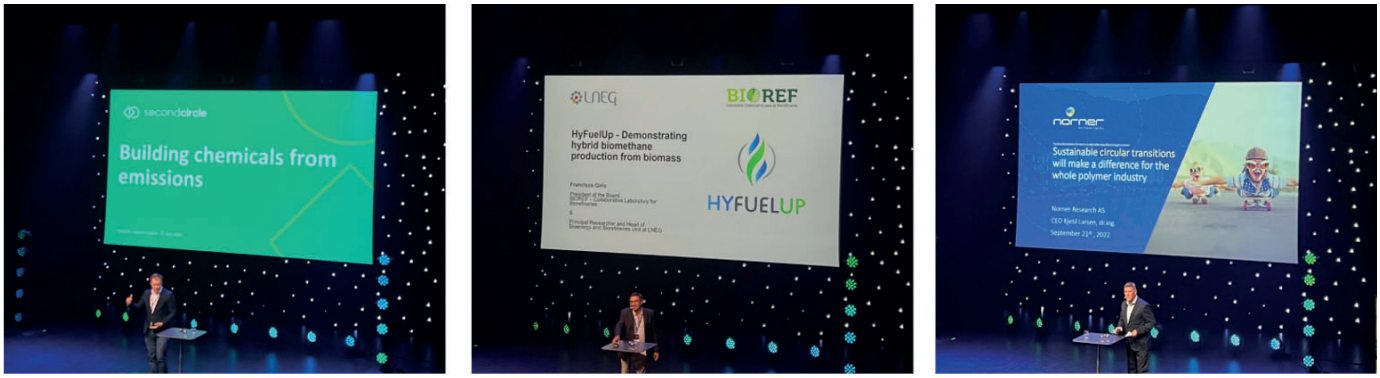

Figure 4: From the left: Torbjørn Ølshøj Jensen, Francisco Gírio, Kjetil Larsen

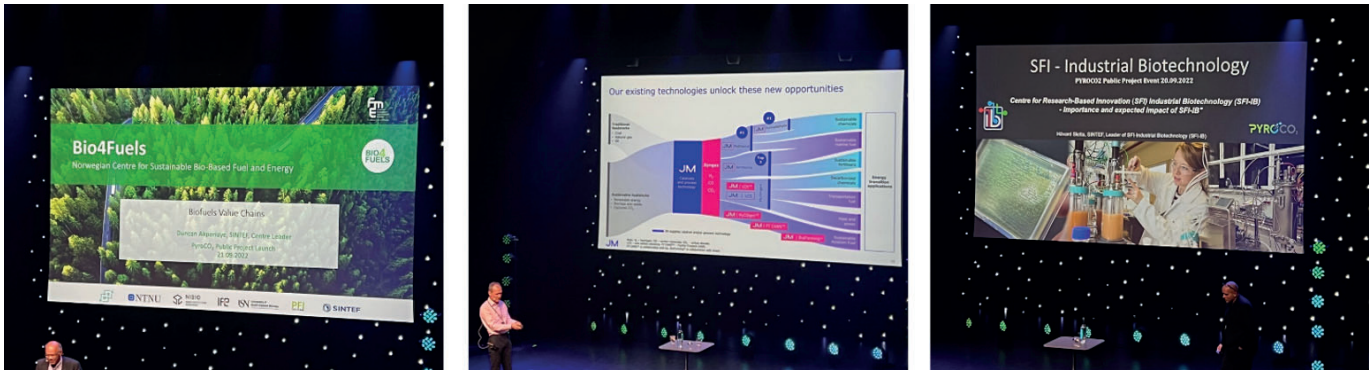

Figure 5: From the left: Duncan Akporiaye, Stephen Poulston, Håvard Sletta

The event also hosted two interesting panel discussions (chaired by the event moderator Benedicte Brinchmann Eie) to further explore how CCU technologies will contribute to achieve more sustainable industrial processes.

PYROCO$_2$ 12 MONTHS PROJECT MEETING

The PYROCO$_2$ consortium gathered at Herøya Industrial Park, Porsgrunn, Norway, on September 22 and 23, 2022, for the annual project meeting and to discuss results and progress thus far related to the project. After one year of online meetings, representatives from each partner enjoyed two days together to brainstorm, share knowledge, and discuss results, progress, and challenges in each Work Package and the project as a whole.

The gathering was enriched by the presence of the members of the PYROCO$_2$ Advisory Board, who shared with the consortium best practices and useful own experience that will be instrumental to achieve the goals of this ambitious EU funded project.

Want to learn more about PYROCO$_2$?
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and the official LinkedIn and Twitter accounts.

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