

Petrochemical companies form Cracker of the Future Consortium and sign R&D agreement



Companies to explore electrical cracking to potentially reduce greenhouse gas emissions

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Six petrochemical companies in Flanders, Belgium, North Rhine-Westphalia, Germany, and the Netherlands (Trilateral Region) today announce the creation of a consortium to jointly investigate how naphtha or gas steam crackers could be operated using renewable electricity instead of fossil fuels. The Cracker of the Future consortium, which includes BASF, Borealis, BP, LyondellBasell, SABIC and Total, aims to produce base chemicals while also significantly reducing carbon emissions. The companies have agreed to invest in R&D and knowledge sharing as they assess the possibility of transitioning their base chemical production to renewable electricity.

Base chemicals, which include ethylene, propylene, butadiene and BTX, are produced in steam crackers and mainly transformed into plastics. These are used for lightweight components in vehicles, improving passenger safety and comfort and reducing fuel and emissions. Plastic packaging saves and preserves food from field to table. Overall, polymers make a major contribution to resource and energy efficiency and positively impact society.

Polymers will always be needed, especially in emerging, renewable energy-related technologies, where they are crucial, for instance for wind turbines, solar panels and batteries. The chemical industry has been at the forefront of those innovations and will continue to deliver solutions for a more sustainable future.

Steam crackers represent the principal opportunity for reducing the industry's greenhouse gas emissions. One option currently under consideration is to electrically heat the cracking furnaces, rather than rely on fossil fuels.

Using electricity produced from renewable sources would significantly reduce cracker emissions. The key challenges in developing electricity-based cracker technology are ensuring that the chosen emissions reduction solution is technologically and economically feasible compared to the current process; that it fits into a future low-carbon value chain; and that it can be implemented in time to meet policy targets. Assuming these challenges are met, developing and implementing electricity-based cracker technology will help the sector maintain sustainable operations while reducing the carbon footprint of its products.

Following the signature of the agreement, the members of the consortium have begun exploring and screening technical options. If a potential technical solution is identified, the parties will determine whether to pursue joint development project(s), including R&D activities that could include a demonstrator for proof of concept in the case of base chemicals.

Trilateral Strategy

The collaboration is a direct result of the Trilateral Strategy for the Chemical Industry drawn up by the North Rhine-Westphalian, Flemish and Dutch ministries of economic affairs and the industry associations VCI (Germany), Essenscia (Belgium) and VNCI (Netherlands) to boost the sustainability of the chemical sector. The Trilateral Strategy to “become the world’s engine for the transition towards a sustainable and competitive chemical industry cluster” was presented to the European Commission ([link](#)) in late 2017. Three tables have been set up to elaborate strategy: Energy, Infrastructure and Innovation.

The Innovation Table has three key success factors: **technical innovations** to enable the energy- and feedstock transition, **digital transformation** to enhance competitiveness, and **framework conditions** to enhance innovation through cross-border cooperation.

Chemical cluster

The trilateral region of the Netherlands, North Rhine-Westphalia and Flanders was a logical choice as a European starting point, since the combined region is the largest chemical cluster in the world with annual revenue of €180 billion and 350,000 jobs.

The six members of the Cracker of the Future Consortium, chaired by the Brightlands Chemelot Campus, aim to create innovative value propositions in developing sustainable technologies together in line with competition law.

“This is a unique collaboration that aims to reduce our industry’s carbon footprint for the betterment of society as a whole, ” says Bert Kip, Chair of the Trilateral Innovation Table and CEO of Brightlands Chemelot Campus. “It demonstrates the commitment of our industry to collectively seek technological solutions to minimize greenhouse gas emissions from our operations. We are proud to have taken this first step together and look forward to the successes that lie ahead.”

Note for editors, not for publication:

For more information about the Cracker of the Future consortium, contact Lia Voermans, Director Innovation Strategy, Brightlands Chemelot Campus +31 (0)6 22 541 453.



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