Press release

nova-Institut GmbH (www.nova-institute.eu)
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Chemical industry on the pathway to renewable carbon

This summer the first survey on renewable carbon in the chemical industry was conducted. 20 to 25% of the carbon supply is already renewable.

For years, the chemical industry has been successfully reducing the carbon footprint of their products by increasing efficiency and utilising renewable energy. The next phase towards a sustainable future begins by paying attention to the fossil carbon embedded in products, as it also contributes to the greenhouse effect once these products reach their end-of-life. The potential solution is the utilisation of the three available, alternative carbon sources biomass, direct CO_2 utilisation, and recycling for products containing carbon. Summarised under the term "renewable carbon" these sources are the future of the organic chemistry and further downstream products such as plastic products.

But how far is the chemical industry on its pathway to renewable carbon? To find out, this summer nova-Institute (Germany) and COWI (Denmark) conducted the first survey on the existing of renewable carbon in the chemical industry and sent a questionnaire to the 50 largest chemical companies producing in Europe. About 20% of the companies returned the completed questionnaire.

"What is the share of the different carbon sources in the total carbon use in your European production?"

The results of the survey clustered chemical companies by their branch and share of renewable carbon into the following four groups:

- Traditional petrochemical companies show renewable carbon shares of 1-5%.
- Several wood-based chemical companies show renewable shares of 80-90%.
- In between is a group of mainly chemical companies with a traditional focus on plant oils and animal fats showing 40-50% renewable carbon shares.
- Notably, a small number of petrochemical companies, which had renewable carbon shares of <1% in the past, already developed to shares around 20%.

Currently, the largest share of renewable carbon is provided via biomass from agriculture and forestry, but recycling shares are increasing and the utilisation of CO_2 begins in a serious way. Most of the chemical companies have already or are currently developing concepts and strategies to increase the share of renewable carbon.

While the survey data allows some first insights, they are not sufficient to make statements about the average use of renewable carbon in the chemical industry. Instead, such information can be derived from Eurostat data, for which nova-Institute provides annual updates to the Bio-based Industries Consortium (BIC). The latest report that will be published in September 2020, found “an overall slight but steady increase in the bio-based share of the organic chemical industry in the EU-28 from about 10.7% in 2008 to 14.9% in 2017”[1].

To shift the chemical industry entirely to renewable carbon, the utilisation of recycled feedstock as well as CO_2-utilisation have to be ramped up and implemented widespread. nova-Institute and COWI estimate that the current average renewable carbon share in the European chemical and plastic industry lies between 20 and 25% – 15% from biomass and 5-10% from recycling.

These numbers are in line with the findings of the survey. While the 50 biggest players in the industry showing a lower than average share, there are hundreds of smaller chemical companies having higher shares of renewable carbon.

About nova-Institute

nova-Institute is a private and independent research institute, founded in 1994; nova offers research and consultancy with a focus on the transition of the chemical and material industry to renewable carbon: How to substitute fossil carbon with biomass, direct CO_2 utilisation and recycling. We offer our unique understanding to support the transition of your business into a climate neutral future.
nova-Institute has 35 employees and an annual turnover of more than 3 million €. www.nova-institute.eu

About COWI

COWI is a leading consulting group that creates value for customers, people and society through our unique 360° approach. Based on our world-class competencies within engineering, economics and environmental science, COWI tackles challenges from many vantage points to create coherent solutions for our customers. COWI is thought leader within bio-based economy and climate change and are advising international organisations like the EU, GCF, AfDB, EBRD and WB/IFC on the latest knowledge and expertise within these global challenges. With offices all over the world, COWI combines global presence with local knowledge to take on projects anywhere in the world – no matter how large or small. www.cowi.com

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[1] Carus, M., Dammer, L., Hark, N., Porc, O. and Carrez, D. 2020: European Bioeconomy in figures 2008-2017. nova-Institut (Ed.), Bio-based Industries Consortium (Pub.), Brussels, Belgium, 2020-09 (www.bio-based.eu)

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