RENEWABLE CARBON INITIATIVE
INTERVIEW

BASF

At BASF, we create chemistry for a sustainable future. Our ambition: We want to be the preferred chemical company to enable our customers' green transformation.

We combine economic success with environmental protection and social responsibility. Around 112,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises, as core businesses, the segments Chemicals, Materials, Industrial Solutions, and Nutrition & Care; our standalone businesses are bundled in the segments Surface Technologies and Agricultural Solutions. BASF generated sales of € 65.3 billion in 2024. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States.

Interview

with **Dr. Ivana Krkljus**
Strategic Senior Manager Green Transformation
BASF, Germany

with **Dr. Jan Schoeneboom**
Senior Expert in the Global Sustainability Competence Team, BASF, Germany

Get to know...

Dr. Ivana Krkljus and Dr. Jan Schoeneboom, Senior Managers at BASF. The interview focused on present challenges in the European chemical sector, on BASF's sustainability initiatives and the newly established BASF Renewable Carbon Unit, and how BASF can contribute to the transformation towards renewable carbon utilization.

Dr. Ivana Krkljus holds a PhD in Chemistry and brings over 15 years of experience at the intersection of innovation management, sustainability, strategy, and client engagement. At BASF, she has progressed through Team Lead, technical, commercial, and award-winning strategic management roles, supporting key account customers and senior leadership in delivering client-ready, revenue-generating sustainability solutions. She combines expertise in value-based selling, project management, customer and stakeholder engagement, and executive storytelling with the ability to translate complex sustainability challenges into clear, actionable client value.

As a certified Business Sustainability Strategist (CISL) and Political Economy expert (LSE), Ivana has led complex cross-sector programs spanning Net Zero and Circular Economy initiatives, portfolio steering, and sustainability policy analysis across the evolving EU sustainability landscape. She drives EU Green Deal intelligence, engages with industry associations and EU institutions, and shapes strategic positioning to align regulatory shifts with business priorities.

In her current role, Ivana leads bioeconomy and market-pull workstreams, partnering with executives across industries, consulting firms, and start-ups to design competitive, sustainability-driven growth strategies.

Dr. Jan Schoeneboom is a chemist currently serving as Senior Expert in the Global Sustainability Competence Team at BASF's Care Chemicals division. In this role, he focuses on reducing carbon footprints, shifting to renewable feedstocks, and promoting responsible sourcing, particularly within the Home Care and Personal Care sectors. His work focuses on promoting sustainable practices and innovations that align with industry goals, which has led to his interest in and involvement with Mass Balance chain of custody systems.

Before taking on this position, Dr. Schoeneboom worked in various sustainability roles at BASF for more than a decade. Amongst that, he was Team Lead in BASF Corporate Sustainability, where he contributed to Life Cycle Assessment and the digitalization of sustainability-related topics such as the development and introduction of BASFs automated Product Carbon Footprint tool. Prior to that, he led a lab team in Corporate R&D from 2004 to 2010, focusing on material research for renewable energy and carbon capture utilisation. Dr. Schoeneboom earned his Ph.D. from the Max-Planck-Institute and University of Duesseldorf, after chemistry studies at the University of Wuerzburg in Germany.

Background and Inspiration

What steps is BASF taking to address the increasing demand for sustainable products, and how is the company adapting its portfolio to meet customer needs?

Dr. Ivana Krkljus: We recognize the growing demand from our customers for sustainable products, which presents both challenges and opportunities. Our primary focus is on reducing the product carbon footprint (PCF) and transitioning our portfolio to include bio-based, recycled- or CCU-based feedstock. We are actively shaping our own green transformation to become the preferred partner of our customers in achieving their sustainability goals. However, it's important to acknowledge that market readiness and the pace of transformation can vary significantly across different regions and industries.

The transformation pathway and speed depend on many different stakeholders, such as research institutions, large corporations, SMEs, start-ups, as well as politics and society. Where do you see a clear need to catch up and what great opportunities exist?

Dr. Ivana Krkljus: To enhance investment prospects for European companies, I believe that legislative intervention and demand creation are essential. These measures would not only help maintain a degree of autonomy for Europe but also accelerate energy and raw material transitions and provide a more level playing field.

BASF supports the goal of climate-neutral Europe by 2050 and is actively committed to climate-neutral and circular production. We aim to actively and responsibly shape this transition towards a climate-neutral and circular society and aspire to become the preferred supporter of decarbonization and defossilisation in our customer industries. Effective protection against carbon leakage as well as business cases for investments into low carbon and circular products is crucial for the successful transformation of industry.

What initiatives has BASF implemented to promote sustainability in its production processes?

Dr. Ivana Krkljus: BASF strives to be the preferred chemical company to enable our customers' green transformation. Therefore, we are committed to scaling low-emission technologies and implementing sustainable renewable raw material sourcing. Over the past few years, we have made significant strides by increasing our use of renewable electricity and reducing emissions. Thus, we have decreased our scope 1 and 2 greenhouse gas emissions from 21.9 million metric tons in 2018 to 17.0 million in 2024, a reduction of 22%, which means we are well on track in achieving our 2030 reduction target of 25%.

Currently, we use 26% of renewable energy globally and aim to increase this to 60% by 2030. However, we recognize the need to extend our efforts beyond our own production processes. A significant portion – on average around 70% – of the product carbon footprint comes from the raw materials that we source. To address this, we implemented our BASF supplier CO_2 management program (SCMP) and collaborated with our suppliers to gather their Product Carbon Footprint (PCF) data to make greenhouse gas (GHG) emissions in the upstream supply chain more transparent. We also jointly identify levers for concrete PCF reduction measures.

Also, BASF is already producing bio-based products through long-established processes, such as surfactants. However, the larger share of our feedstock still comes from fossil carbon sources. To transform our feedstock basis further, we are increasingly sourcing alternative raw materials from recycled and bio-based feedstocks. In our ChemCycling business, for example, we feed chemically recycled feedstock into our production system to manufacture new products. The new BASF Renewable Carbon unit within Global Procurement is securing the renewable feedstocks needed for the transformation. While carbon itself cannot be replaced in our products, the use of fossil carbon can be replaced with renewable, more sustainable alternatives.

Core Approach and Philosophy

What is the purpose of the new BASF Renewable Carbon unit established in 2025?

Dr. Ivana Krkljus: Renewable Carbon is an important pillar for the raw material transformation of the chemical industry and BASF. Our new dedicated unit BASF Renewable Carbon (BReC) is focusing on securing and scaling up renewable carbon feedstocks for BASF in an emerging market. These raw materials are the basis for the extension of BASF's portfolio of materials with low and zero product carbon footprints (PCF) which support our customers' green transformation.

How does BASF integrate renewable carbon raw materials into its production process?

Dr. Jan Schoeneboom: We have essentially two ways for doing that: Like Ivana said above, BASF already produces specific bio-based products from purchased bio-feedstock in dedicated plants, such as plant-based oils. Yet, for a green transformation truly "at-scale" to cover our broad range of products, we utilize a more flexible approach and integrate high-volume renewable raw materials into conventional fossil chemical value chains. For instance, renewable carbon materials such as bio-naphtha, biomethane, and e-methanol can be processed as drop-ins in petrochemical plants just like their fossil counterparts.

In this way we are leveraging our highly efficient, existing interconnected production network. We then transfer the sustainable attributes of the renewable raw materials to specific downstream products such as surfactants using the mass balance approach. This is a chain-of-custody model that ensures that for every ton of sustainable products purchased we replace the required amount of fossil feedstock with renewable raw materials. The resulting mass-balanced products have a lower carbon footprint compared to their conventional alternative, and can be provided at the same product quality, without having to install new infrastructure. Yet, to increase the availability of said renewable feedstocks, improved conversion technologies are still needed to produce chemicals of sufficient quality from renewable sources. These technologies include gasification and pyrolysis of mixed waste streams, depolymerization of recycled plastics, and fermentation of starch. Our collaborations with Pyrum and Quantafuel are current examples of how advanced pyrolysis technologies are being used to recover recycled raw materials from plastic waste or end-of-life tires.

Experience and Impact

What is the mass balance & attribution approach and why is this important for your transition to non-fossil feedstocks?

Dr. Jan Schoeneboom: The mass balance & attribution approach is crucial for the transition to non-fossil feedstock because it allows to leverage existing infrastructure of the chemical industry, which offers significant advantages in terms of cost and emissions savings. BASF estimates that this model saves approximately 5.7 million tons of CO_2 annually through its production 'Verbund.'

However, such an integrated approach also means that individual reduction measures impact nearly the entire product portfolio, leading to a 'dilution effect.' For instance, when bio-naphtha is introduced into the network at a site, almost all products produced there benefit from an incremental reduction in emissions. Because the overall product volume is very high, the effect on the product carbon footprint of individual products is only marginal. To illustrate, BASF produces 6.1 million tons of products annually at our integrated site in Ludwigshafen, Germany.

Why is this a problem?

Dr. Jan Schoeneboom: An incremental reduction of the PCF is too small to be recognized as valuable by all customers. For reduction measures to be impactful, the positive effects must be concentrated on products whose markets and customers recognize the value of such measures. By employing an externally certified mass balance process, BASF can attribute the sustainability benefit of a lower carbon footprint and the use of renewable resources to products, allowing customers who are demanding these green attributes to claim substantial improvements in sustainability.

How successful have you been in implementing your mass balanced products, and what metrics do you use to measure that success?

Dr. Jan Schoeneboom: The number of externally certified mass balanced products has consistently grown over the years. Today, BASF offers more than 1500 mass balanced products for various markets and applications, including home and personal care, automotive, textiles, and electronics, all based on renewable feedstock from biomass or recycled streams.

How do you envision the role of bioeconomy in promoting sustainability across various industries, and what steps are necessary to integrate bio-attributed products effectively?

Dr. Ivana Krkljus: I envision bioeconomy as a cornerstone of sustainability, significantly integrated into various industries. To achieve this, industry must enhance communication and build trust in the mass-balance approach while embracing the utilization of bio-attributed products. These bio-attributed products will complement our offer of bio-based products.

Motivation and Expectation

What motivated you most to join the RCI and what is the added value you expect from your membership? How can the RCI profit from your membership?

Dr. Ivana Krkljus: When you encounter a thought leader and organization that tends to share the same purpose of accelerating transformation toward renewable carbon at scale, it's good to join forces. We believe the RCI, and its members benefit from our considerable practical experience and expertise in areas such as EU Green Deal policy, standardization, carbon accounting, life-cycle assessment (LCA), mass balance chain of custody, sustainability criteria setting, biodiversity, product labeling, etc.

Dr. Jan Schoeneboom: One of our primary motivations was to make the use of renewable resources in our products clearly visible to customers, enabling them to recognize and value these innovations. This is why we have engaged through RCI in the development of the OK renewable label by TÜV Austria Belgium. We are especially pleased with the recent launch of this label, which allows companies to effectively and easily communicate renewable raw materials from different sources and from different supply chain systems — all in one label.

We would like to thank Dr. Ivana Krkljus and Dr. Jan Schoeneboom for the interview.

Further Information at www.basf.com.