

A home for the high-tech bio-economy

SUSTAINABLE RAW MATERIALS The bio-economy in Saxony-Anhalt is booming. Its expertise in the areas of chemicals, biopharmaceuticals and bioplastics in particular has made the federal state into a popular location for businesses.



Global Bioenergies has said goodbye to crude oil. Together with the Fraunhofer Centre for Chemical and Biotechnological Processes (CBP) in Leuna, the French company has developed a fermentation process that allows for the production of the hydrocarbon isobutene from sugar (see the interview on the right). Until now, this gas – a base component in the production of plastics and fuel products – has primarily been obtained from fossil fuels. In the new process, modified microorganisms produce isobutene from beet sugar and wheat glucose. Soon, the same will be taking place with the use of waste products such as straw and wood shavings.

FROM THE LAB TO INDUSTRY

The cooperation between Global Bioenergies and CBP is just one example of the capacity for innovation in the future sector of the bio-economy in Saxony-Anhalt. The objective of the businesses in this area is to develop bio-based solutions in the interests of bringing the dependency on fossil fuels to an end. Instead, production processes are being configured on a resource-conserving and energy-efficient basis.

In Saxony-Anhalt, a wide network of institutions, businesses and research organisations with

know-how in the area of the bio-economy has become established. The leading-edge cluster for the BioEconomy consists of 75 partners – including organisations such as the Fraunhofer Institute for Materials Mechanics, the German Biomass Research Centre and the Helmholtz Centre for Environmental Research, but also companies such as Domo Caproleuna, Knauf Gips and Schüco.

“The fact that we are able to transfer scientific knowledge rapidly from the laboratory to the industrial scale is attracting considerable interest,” explains Thomas Einsfelder, Managing Director of the Investment and Marketing Corporation Saxony-Anhalt (IMG). “Of equal importance, however, are the possibilities that are offered by our pilot and demonstration systems.” Systems of this kind are also to be found at CBP in Leuna. “We enable partners from the worlds of research and industry to develop biotechnological and chemical processes for the use of renewable resources in product-relevant dimensions,” explains Managing Director of CBP Gerd Unkelbach.

PIONEERING DEVELOPMENTS

The variety of innovative industrial businesses in Saxony-Anhalt is considerable. In the area of chemicals, it ranges from perfumes to E-fuels. EW Biotech, for instance, operates a multipurpose biotech facility



Production of bio-based isobutene: in Leuna, Global Bioenergies manufactures the base product for the chemical industry

in Leuna. In addition to contract manufacturing, the company offers customers research and development work in the areas of bio-based chemicals as well as the animal feed and food additives.

The bio-pharmaceuticals sector is home to businesses which have specialised in medical products for Alzheimer's disease, pharmaceutical proteins and vaccines. Hepe Medical Chitosan, for example, manufactures high purity Chitosan in Halle as a raw material for the pharmaceuticals industry, which it does so on an environmentally friendly basis with the use of crab shells instead of crude oil, as was previously the standard practice. Other businesses make products from phyto-pharmaceuticals, oils, fats, wood and plants. On this basis, injection moulded components are manufactured for the automotive industry with the use of bioplastics made from beech leaves. And the company rhuBarb technology has developed a material from rhuBarb for tanning leather – as an alternative to highly toxic chemicals.

“The bio-economy means innovation. By establishing bio-based value chains on an industrial scale, we are starting the next major wave of innovation,” says Professor Matthias Zscheile, Director of the BioEconomy Cluster management, with conviction. “With pilot projects, we are creating the basis for raising the profile of Central Germany as the model region in Europe for the bio-economy.” ■

OVERVIEW OF KEY FACTS

- In Saxony-Anhalt, businesses and scientific organisations are setting high standards with the development of bio-based products.

For further information, visit investieren-in-sachsen-anhalt.de/bioökonomie



Alec Bulc

Alec Bulc, who is French, is the Managing Director of Global Bioenergies in Leuna

“Supporting new ideas”

Alec Bulc explains why the French group Global Bioenergies decided to locate in Saxony-Anhalt.

DUB UNTERNEHMER magazine: your company operates a demonstration facility for bio-based isobutene at the Chemical Park in Leuna. What made you decide on that location?

» **Alec Bulc:** there were several strong arguments in favour of our decision, including the knowledge of chemical and biological processes in the region, the skilled workers, and local authorities which aren't afraid of cooperating with the chemical industry. Then there was the permission of the Fraunhofer Institute to engage in transformation processes with genetically modified bacteria.

What does Saxony-Anhalt offer companies that operate in the bio-economy sector?

» **Bulc:** in the Leuna-Halle-Leipzig triangle region, several leading research and development projects in the field of the bio-economy are currently under way, with the simultaneous operation of biotechnology pilot facilities. The federal state of Saxony-Anhalt has appreciated the urgent necessity to provide financial support to start-ups and new ideas with the goals of breathing new life into the region and developing projects that have both a commercial and sustainable orientation.

What do you like about your new home region of choice?

» **Bulc:** the quality of life in the region, the variety of cultural distractions, the winegrowing areas and the good infrastructure. The towns and cities of Leuna, Freyburg, Naumburg, Halle, Weimar, Jena and Leipzig are all within easy reach and very much worth seeing.

SPECIALIST FOR ISOBUTENE

Global Bioenergies has developed a process for converting renewable raw materials into hydrocarbons. It produces plastic, organic glass, elastomers and fuels from the isobutene which is obtained this way. The company is currently improving the performance of this process, it has put an industrial demonstration facility into operation in Germany and is preparing for mass production. global-bioenergies.com