Scaling up the biobased economy

WE HAVE ALL HEARD OF BIOFUELS, BUT ACTUALLY THIS IS ONE OF THE LOWEST FORMS OF USING BIOMASS. WHY NOT MAKE USEFUL PRODUCTS OUT OF BIOMASS? OR EVEN LIFE-SAVING DRUGS? ON THE PREMISES OF BIOTECH CAMPUS DELFT, THE BIOPROCESS PILOT FACILITY (BPF) PLAYS A VITAL ROLE IN THIS PURSUIT.

BPF is a place where companies and knowledge institutions can develop new sustainable production processes. These processes serve many purposes, such as converting biobased residues into useful materials or fuels. The facility has been specially designed to enable the transition from the laboratory to production on an industrial scale.

Mr. Arno van de Kant

Biomass pilot facility in Delft

Spin-off expanded

The BPF is a spin-off from existing fermentation and downstream processing facilities, expanded in 2012 with a pretreatment section and a food grade pilot facility that has a pretreatment section of its own. Tebodin was involved as EPC contractor. 'These extra sections have made BPF a full service pilot facility', says Arno van de Kant, Business Development Manager of BPF. 'It has enabled us to put in biomass, for instance wood, grass or straw, and have an output of useful products, food ingredients and pharmaceutical products.'

Reduce risk of failure

BPF was funded by universities, companies, and government. 'Therefore, any organization is welcome to use our facilities, in order to get proof of concept on a semi-industrial scale', Van de Kant continues. 'BPF is the link between lab testing and building a full scale plant. In many cases, using our facilities means a huge saving. Companies cannot afford to build their own, but do want to reduce the risk of failure. Scale-up research is very risky and requires extensive experimentation using advanced equipment. All of that is to be found in Delft, as one of the few places in the world in this respect.'

Bottles from bioplastics

This fact is demonstrated by the diversity of clients of BPF. Irish mushroom international Monaghan uses the BPF to make products out of horse manure and straw. American industrial biotechnology company Verdezyne is testing a biobased alternative for petroleum-based nylon production. Corbion has ran tests with FDCA, a biobased alternative to make PEF instead of PET in producing plastic bottles. And tests for penicillin production have been carried out by BPF. 'Our business is very dependent on confidentiality', Van de Kant explains. 'That is why I cannot elaborate on many other clients. But it is good to know that a future of renewable products is made possible at BPF.' ■