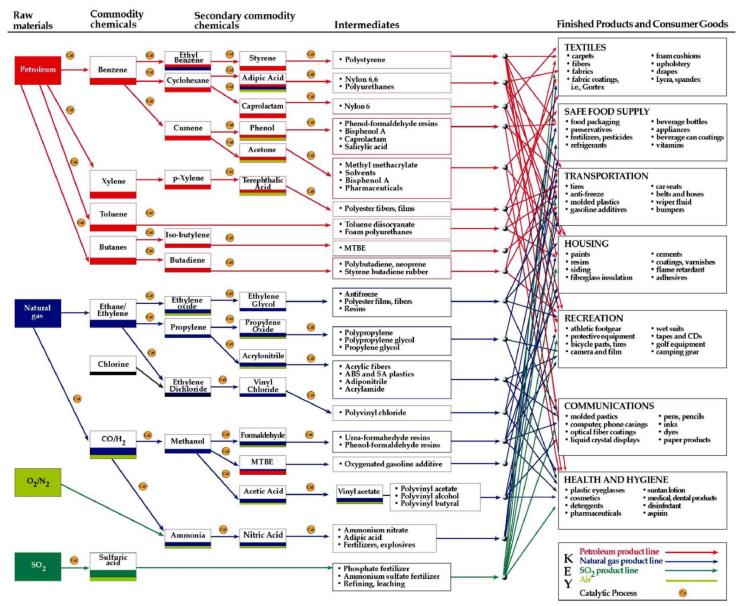
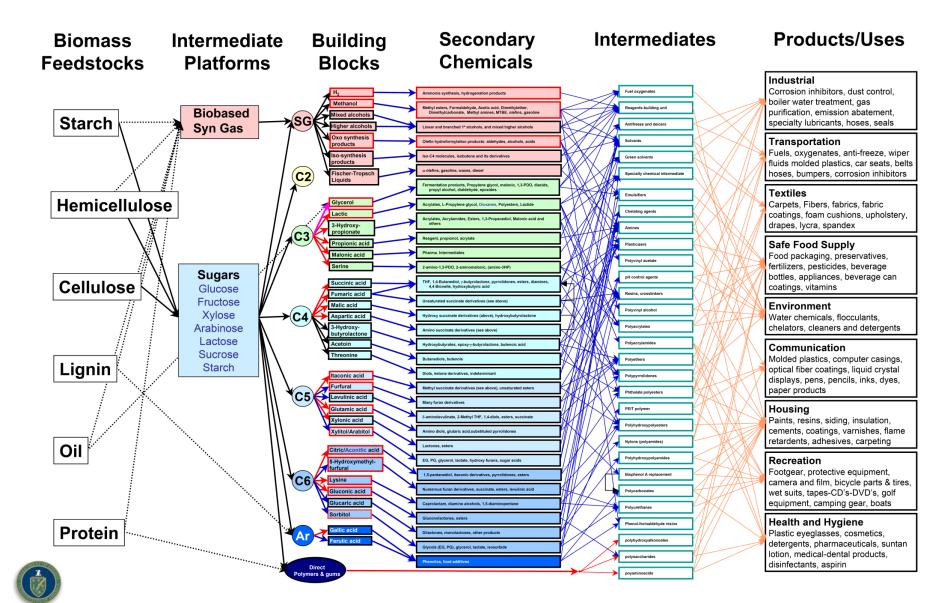


Petro-chemical products



Bio-based products



Italy









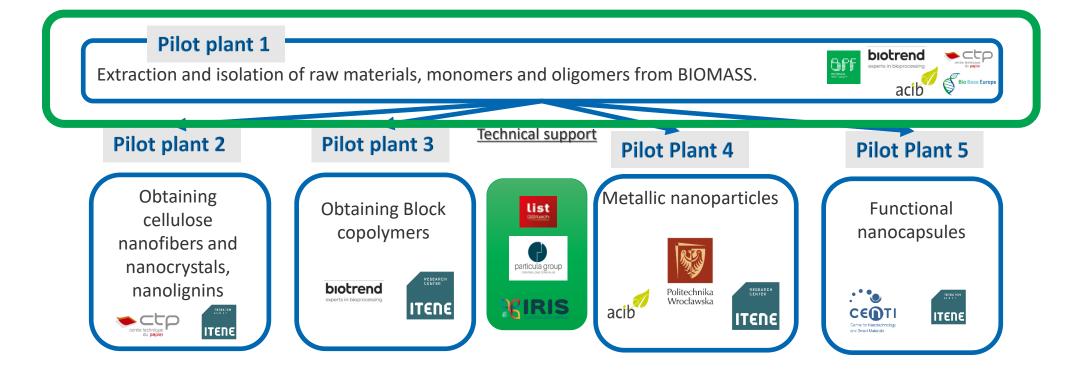




Open Innovation test bed



Development of safe nano-enabled bio-based materials & polymer bionanocomposites





Optimisation and Scale-up of spruce pulp pretreatement



Goal: obtain a high glucose containing hydrolysate to use in subsequent fermentation

<u>Lab-scale optimisations:</u> Prepare optimal conditions for pilot runs by testing different equipment and conditions → <u>396g/L glucose</u>









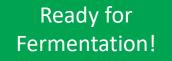


<u>Piloting:</u> In total <u>750 kg spruce pulp</u> was pretreated using BBEPP pilot equipment

Obtained 490kg sugar stream with glucose conc. of 460g/L













A wide range of biobased products developed at the Bio Base Europe Pilot Plant

Alternative proteins









Colorants

Biomass proteins for food and feed applications

Precision fermentation proteins: e.g. milk and egg proteins, collagen, ...

Specialty carbohydrates













Human milk sugars, low caloric sweeteners, prebiotics, etc

Materials





Spider silk, vegan leather, bioplastics (PLA, PHA, PEF, etc)







Blue, orange, red and yellow colorants and pigments

Functional ingredients















Cannabinoids, microbial cultures in cosmetic creams

Biosurfactants in detergents and emulsifiers

Medical biotech-products









Enzymes for diagnostic use (e.g. Covid-19) and pharmaceutical synthesis, new antibiotics, etc



Biopesticides





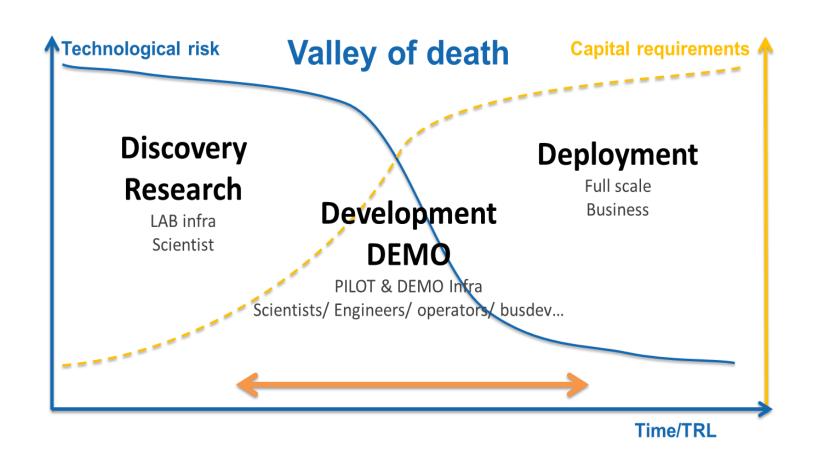






Biopesticides in the form of proteins, microbial cultures and biochemicals

The Valley of Death or the biggest hurdle in biomanufacturing



Shared Pilot Facilities

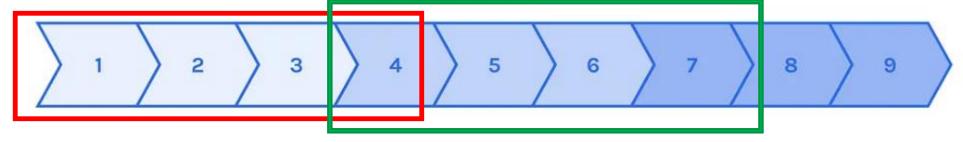
risk sharing & reduction



Technology Readiness Levels

research infra

PILOTS4U = pilot & demo infra

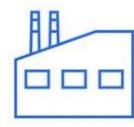




Research

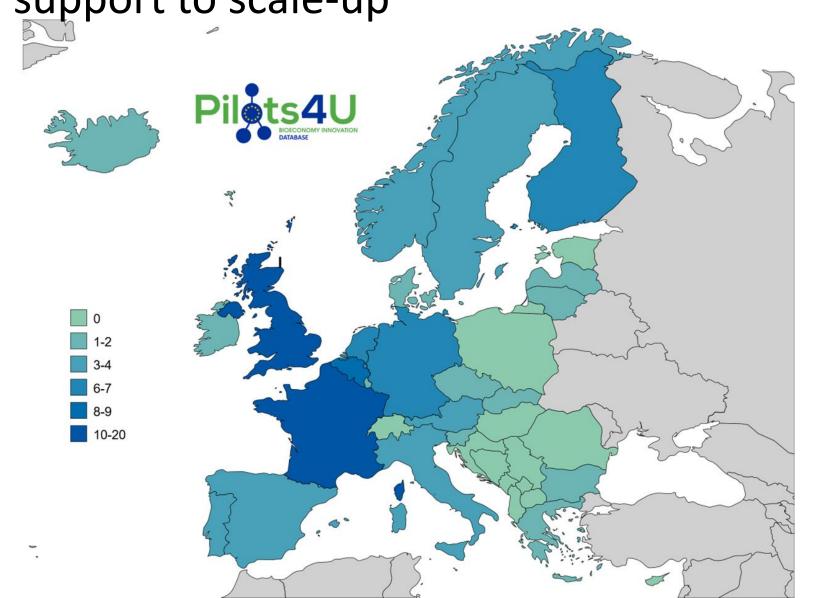


Develop



Deploy

Pilots4U is the operational tool for biotech companies to identify support to scale-up



Technology Category

Select Technology Categories



harvesting



Anaerobic digestion



Industrial biotechnology







Physicochemical separations



Pre-treatment



Pulping



Thermochemical conversions



Technology Scope of the Pilots4U Asset register

Raw materials

Lignocellulosic raw material

Algae raw material

· Cultivation, harvesting

Biowaste

CO, CO2, CH4, H2

Primary processing

Pre-treatment

- Mechanical grinding Thermal and
- pressure · Chemical or enzymatic Hydrolysis

Pulping

- Sulphate/sulphite
- Organosolv

Thermochemical conversions

- Gasification Pyrolysis
- Hydrothermal
- Anaerobic digestion

Secondary processing

Industrial biotechnology

- · Industrial fermentation
- Gas-fermentation
- · Biocatalytic conversions

Chemical processing

- · Chemical conversions
- · Heterogeneous catalysis
- Polymerisations

Material technologies

- · Biocomposite processing
- · Fibre web production
- · Coating or lamination
- · Textile fibre spinning Nano/micro fibre production

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No. 745667 | Topic: BBI-2016-502

Separation technologies

Mechanical separations

- · Particle filtering
- Membrane filtering
- Centrifugation
- Particle
- classification, sieving

Physicochemical separations

- Evaporation
- Distillation
- Extraction
- · Crystallisation and precipitation
- Chromatography
- Flocculation





WE HAVE ALL THE EQUIPMENT YOU NEED











THEY HAVE ALL THE EXPERTISE YOU NEED





- > 170 employees
- > 50 bio-process engineers
- > 30 bio-process technicians
- > 15 employees with PhD

Strong focus on team work and flexibility









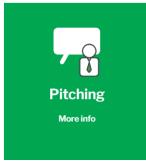






















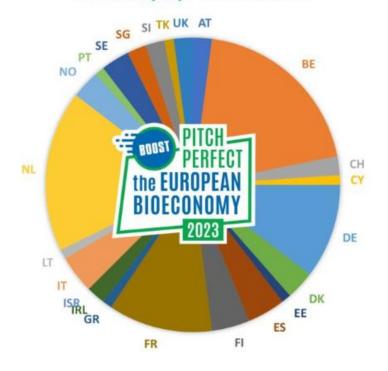
Who attended the 2023 event?

PITCH PERFECT AND BOOST THE EU BIOECONOMY 2023 334 PARTICIPANTS FROM 23 COUNTRIES



96 pitching innovators from?

PITCH PERFECT AND BOOST THE EU BIOECONOMY 2023 PITCHES (96) PER COUNTRY



Join the Copilot community











Open calls Copilot



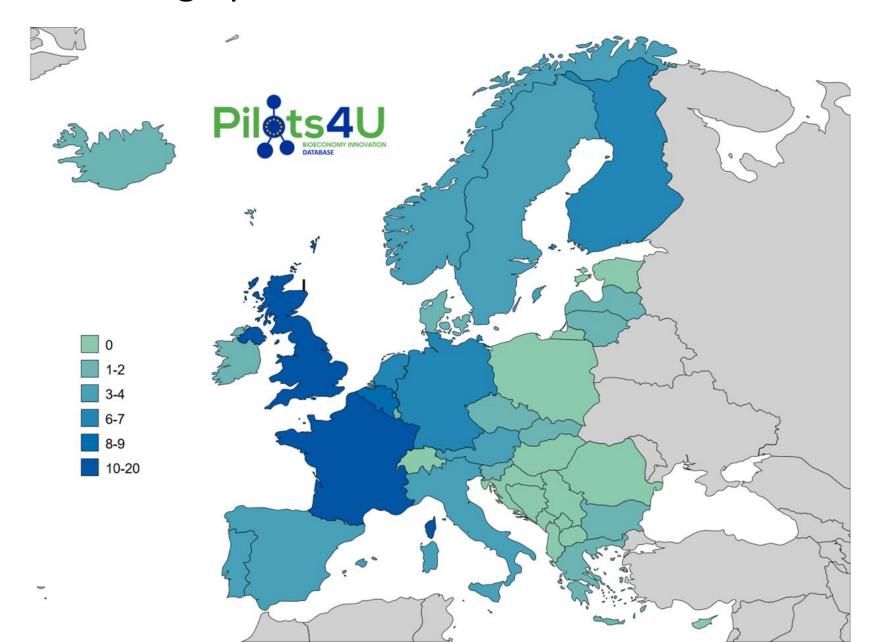








Do we have enough pilot and demo infrastructures in EU?



Scale-up peak demand in 2021-2022

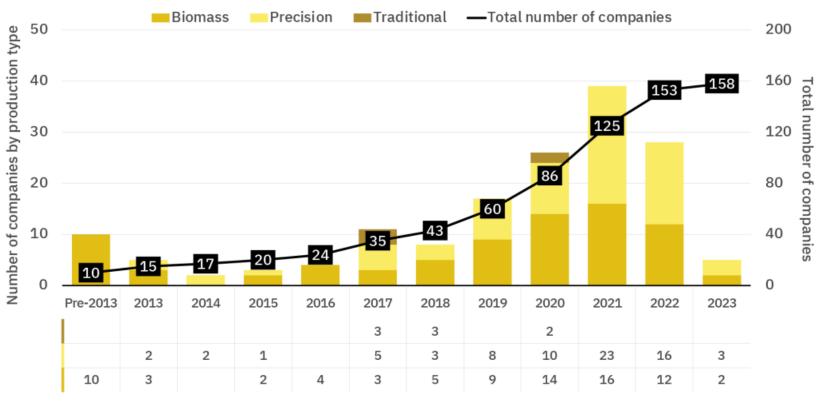
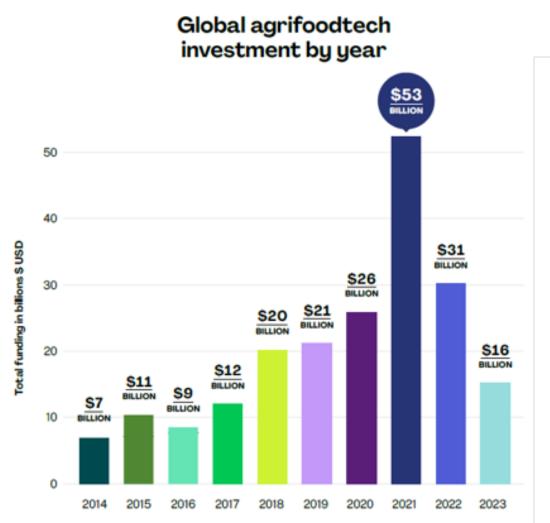


Figure 5: New and total publicly announced companies by year founded

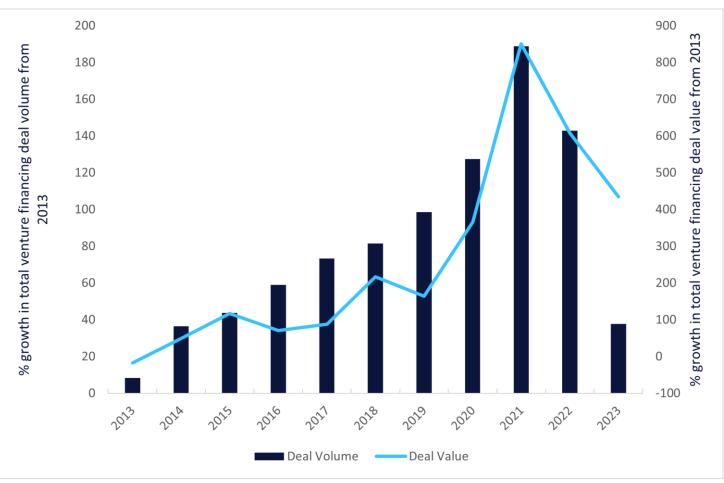
Source: GFI company database.



2023-2024 slowdown in the biotech sector



Biotechnology fundraising



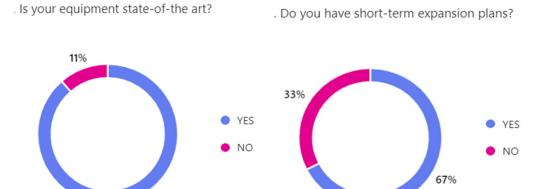


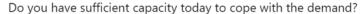
Recent survey

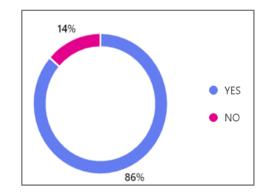
> 70 open access pilot & demo infrastructures (members of Pilots4U network)

Reconfirmation

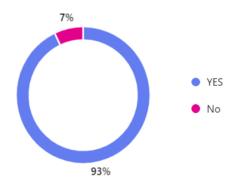
there is enough capacity and availability of shared pilot & demo infrastructures for the bioeconomy in Europe











Policy recommendations



The EU already has sufficient scale-up facilities (contrary to the US)

The EU should capitalise on its advanced position in scale-up infrastructure by supporting innovating companies with their scale-up

- More funds for EIC accelerator grants
- Establish a voucher system for scale-up work
- Provide mobility of regional public scale-up funding





