



# Equipping Europe for bio-based innovation

The Pilots4U network

28<sup>th</sup> Feb 2019

Sustainable value chains for bio-based products

Max Planck Institute for Polymer Research, Mainz.

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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-S02**



A Europe-wide network of existing open access pilot and multipurpose demo infrastructures for the bio-economy

## WHAT IS PILOTS4U?

Pilots4U has set up an easily accessible database of open access pilot and multipurpose demonstration infrastructures for the European bio-economy.

[CLICK HERE TO WATCH OUR VIDEO →](#)

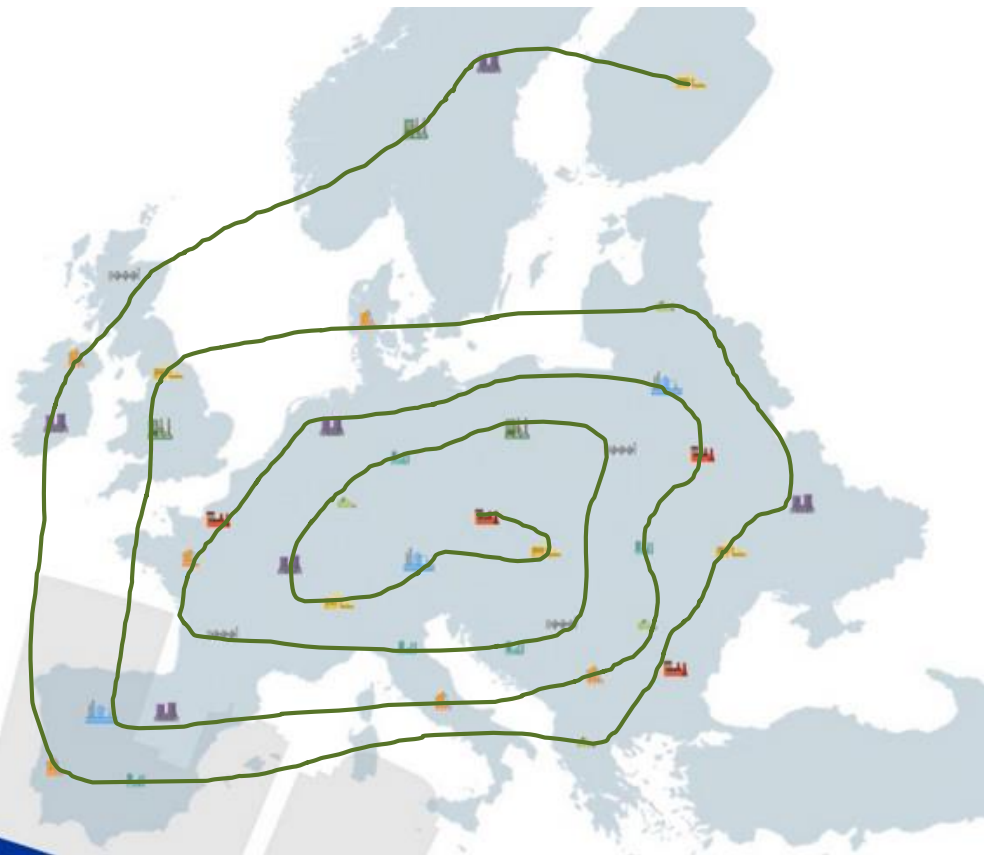


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## What is open access

- In the context of infrastructure, open access involves physical infrastructure (*in this case pilot equipment*) being made available to clients other than the owners, for a fee (Source: Wikipedia)
- Joint investment in pilot infrastructure that can be used, for a fee, by any entrepreneur in need of scale-up

# What is bio-economy

	Biomass supply	Primary conversion	2ndary conversion	Products and markets
VC1: Lignocellulosic		SmartPilots BRISK Biorefine cluster EU BioPilotsUK	SmartPilots BioPilotsUK	
VC2: Forest based	Erifore	Erifore SmartPilots BRISK BioPilotsUK	Erifore SmartPilots BioPilotsUK	Erifore
VC3: Agro-based		SmartPilots BRISK Biorefine cluster EU BioPilotsUK	SmartPilots BioPilotsUK	
VC4: New e.g. Algae, waste	Enalgae Biorefine cluster EU BioPilotsUK	SmartPilots BRISK BioPilotsUK	SmartPilots BioPilotsUK	
VC5: Integrated E, pulp, chemicals	Erifore	Erifore SmartPilots Biorefine cluster EU BioPilotsUK	Erifore SmartPilots BioPilotsUK	Erifore

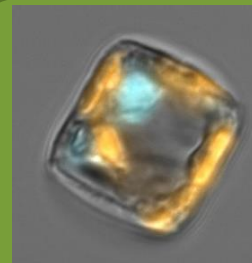
# What bio-economy equipment



Industrial  
Biotechnology



Thermal  
conversion



Algal  
cultivation



Chemical  
conversion



Pulping



Anaerobic  
digestion



Fractionation  
Purification



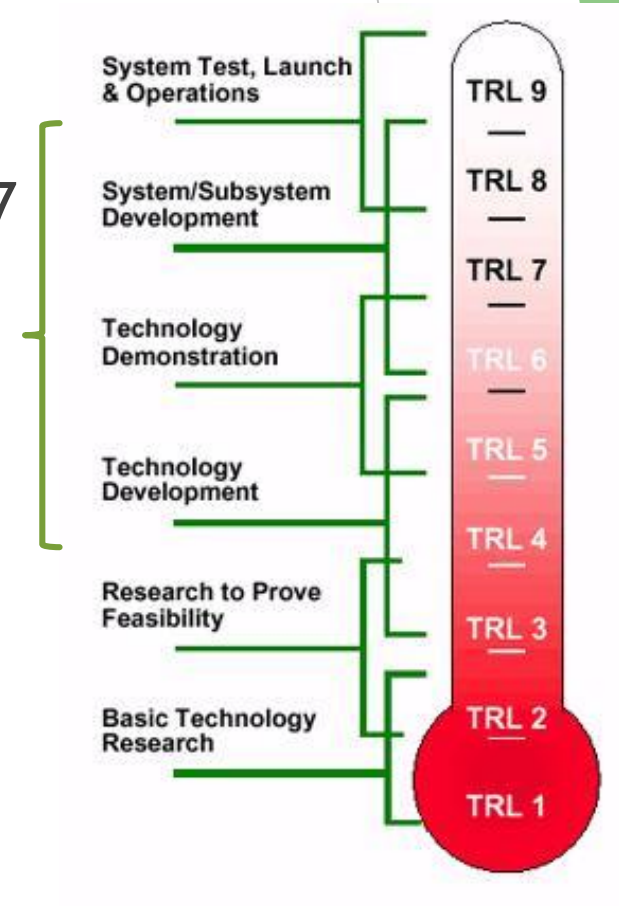
Material  
technologies



Nutrient  
recovery

# What is pilot and demo equipment

- Pilot scale: TRL4 - TRL5
- Demonstration scale: TRL6 - TRL7
- Public and private
- Open access
- In EU28 and beyond



# Different open access model 'stereotypes'

Entity	Stereotype mission
Technology center	Bring new technology to the market Innovation - service oriented
University	Generate new knowledge Research - upcoming technologies
Equipment manufacturer	Answer customer equipment needs Customised equipment, diversify application field of equipment
Technology developer	Technological solutions for a problem Customised technology - license
Private company	Toll-manufacturing (Use idle equipment) Production



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1. List all open access pilot facilities in 1 database and make it searchable

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## PILOTS4U IN FIGURES





- ▶ I have open access pilot or demo infrastructure and want to join the network

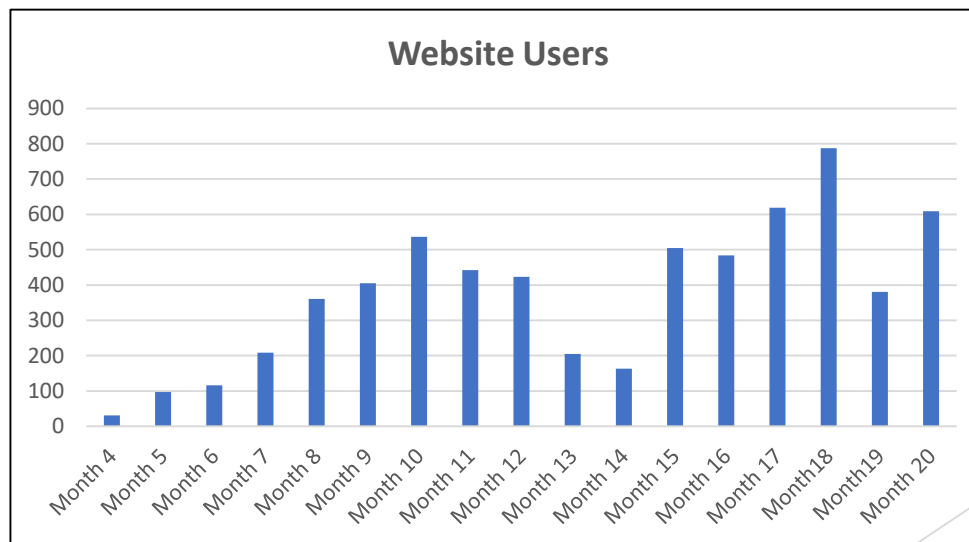
Find info @  
[www.biopilots4u.eu](http://www.biopilots4u.eu)

- ▶ I want to use the open access facilities from the network

2. Once populated, spread the word - to get the database used

## 1. Once populated, spread the word - to get the database used

### 1. Inside network: emails, newsletters, social media



1. Once populated, spread the word - to get the database used
2. Outside network: social media campaign  
- funny pictures
  - also translate in other European languages than English
  - Advertise on LinkedIn and Facebook

# Search possibilities



## Keyword Search

## Scale

- Any -

## Technology Category

- Any -

## Technology

- Any -

## Service Provider




Apply

Reset

## AEROBIC FERMENTERS (RANGING FROM 10 TO 15 000L)

### PERSONAL INFORMATION



**Name:**  
Business Development

**Service Provider:**  
Bio Base Europe Pilot Plant

READ MORE →

CONTACT US →

**Date:**  
Wednesday, November 8, 2017

**Type of Collaboration:**  
Fee paying basis, Funded collaborative project, Joint ventures, Negotiable

**What 'non-technical' services relevant to scale-up does your organisation offer?:**  
Technoeconomic Assessment

View

Edit

Edit Form

### ASSET INFORMATION

**Asset Information:** Aerobic Fermenters (ranging from 10 to 15 000L)

**Raw Material:** Biomass - any

**Process Stage:** Secondary Processing

**Technology Area:** Industrial biotechnology

**Technology:** Industrial fermentation

**Scale:** Semi Pilot, Pilot, Demonstration

**Size:** 10 - 99 L, 100 - 999 L, 1000 - 99999 L

**Additional technical information:**  
 More info on <http://www.bbeu.org/pilotplant/expertise/fermentation/>  
 Batch, fed-batch and continuous (with or without cell recycle) fermentations  
 Experience with bacterial, yeast and fungal systems  
 Examples of products: industrial enzymes, fine and bulk chemicals, biofuels, biochemicals, bioplastics, biosurfactants, biosolvents, nutraceuticals, food ingredients, bioflavours...

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## 3. Open access bio-economy pilot equipment missing?

1. Gap analysis between what is and what is needed
2. Gaps are grouped, and solutions to address the gap are suggested
  - Typical means of funding such actions
  - Typical scales of funding and what this typically delivers
  - Timescales over which investment is typically required
  - Example investment case based on gap analysis
  - Anticipated timescales for RoI

Investment cases



# TO DO before project end

- ▶ Investors round-table 7/5/2019, Brussels
  - ▶ Strategies and business cases to address the gaps
- ▶ Final event 8/5/2019 Brussels: **Launch of the Pilots4U network**



## Legacy: Pilots4U network

1. Actively used database to broker pilot equipment and expertise offer and demand
2. Yearly equipment needs assessment and forum to solve equipment needs
3. Yearly matchmaking event



## Finance the Pilots4U network

- Database free for users
- Fee / asset owner
- Sponsoring by asset owners, equipment & industrial plant manufacturers
- VIP package for users (store searches, see popular searches, search support, gap-analysis report)
- Yearly event (& meeting)
- Sector organisations: put a link to Pilots4U network on website!



# Thank you, any questions?



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