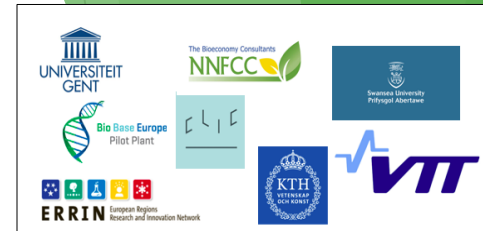


# Pilots4U

BIOECONOMY INNOVATION



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



This project has received funding from the Bio Based Industries Consortium  
Horizon 2020 research and innovation programme under grant agreement No 101019718



## 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

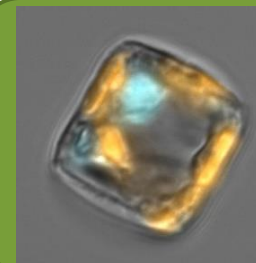
|   | Biomass supply                                 | Primary conversion  | 2ndary conversion                     | Products and markets |
|---|--|---|---------------------------------------|----------------------|
| <b>VC1: Lignocellulosic</b>               |  | SmartPilots<br>BRISK<br>Biorefine cluster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



Industrial Biotechnology



Thermal conversion



Algal cultivation



Chemical conversion



Pulping



Anaerobic digestion



Fractionation Purification



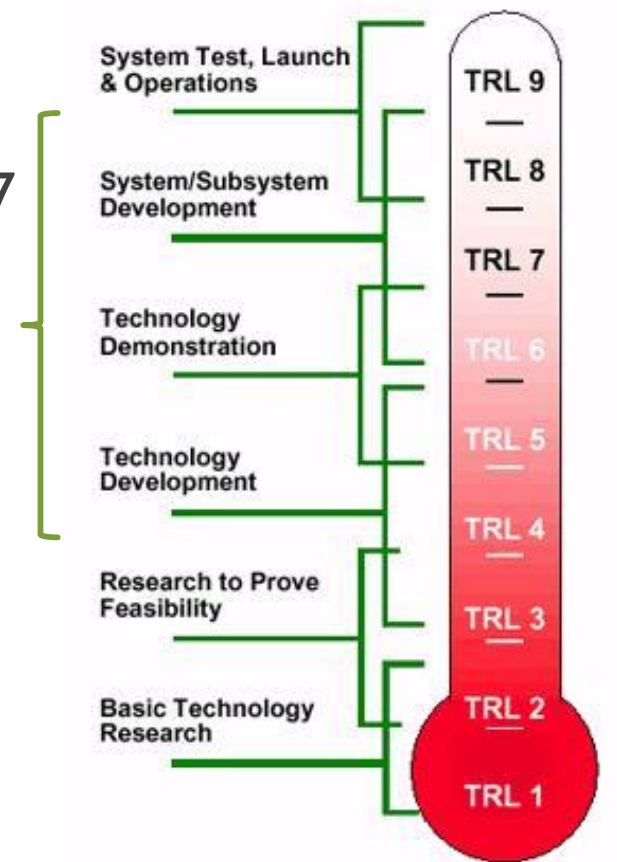
Material technologies



Nutrient recovery

# What is pilot and demo equipment

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



1. **Faster:** Accelerated development: faster time to market
2. **Cheaper:** Saved development costs
3. **Better:** Improved characteristics of the process or final product
4. **Stronger:** Improved network

## Driven by existing bio-economy networks

SmartPilots  
Interreg Europe



ERIFORE  
European Research Infrastructure  
for Circular Forest Bioeconomy

BRISK  
BIOFUEL RESEARCH INFR

EnAlgae  
collaborate innovate communicate

BIOREFINE  
CLUSTER EUROPE

BioPilotsUK

- ▶ Industrial Biotechnology pilots and multipurpose demonstration plants
- ▶ Forest economy network
- ▶ Thermochemical network
- ▶ Algae network
- ▶ Anaerobic digestion and Nutrient recovery network
- ▶ BioPilotsUK: a UK pilot infrastructure network

# What to expect from the workshop

Expected take home messages

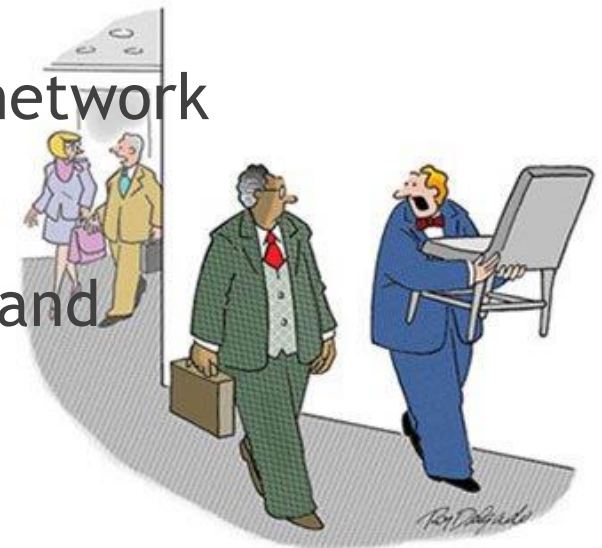
- ▶ I am an infrastructure owner:
  - *Do I want to join the Pilots4U network?*
  - *How are other facilities dealing with 'open access'?*
- ▶ I am considering to use bio-economy pilot infrastructure:
  - *How does it work and where can I find the facilities that fit my needs?*





## Expected take home messages

- ▶ Increased knowledge of intellectual property and funding schemes when working with scale-up partners
- ▶ How can I join / use the Pilots4U network
- ▶ New contacts through networking and company speed dating

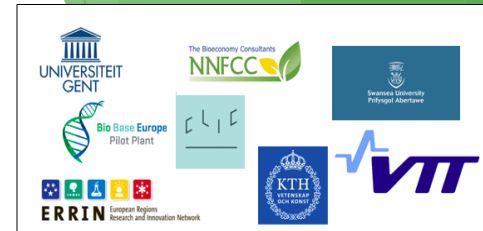


- ▶ Question for presenters
  - ▶ [Slido.com](https://www.slido.com) #Pilots4U (continuously open)
  - ▶ Network lunch
- ▶ Question for the project partners



# Pilots4U

BIOECONOMY INNOVATION



## Session 1: How does open access work?

### Introduction



This project has received funding from the Bio Based Industries  
Horizon 2020 research and innovation programme under grant



## Open access: Questions to ask

- ▶ How ‘open’ is OPEN ACCESS?
  - ▶ Restricted to/ preference for MEMBERS or investors/shareholders ?
    - ▶ How is the facility funded?
  - ▶ OWN ACTIVITIES first: limited slots / staff for open access ?
    - ▶ What is the facility’s mission?



# Open access: questions to ask

- ▶ Who performs the work?
  - ▶ Customer staff performs the work
    - ▶ Rare due to nature of equipment
    - ▶ Sometimes with longstanding cooperations
  - ▶ Centre staff performs the work
    - ▶ Customer attends the trials
    - ▶ Customer cannot attend the trials



## Open access: questions to ask

- ▶ What if some equipment is missing?
  - ▶ Only limited testing can be done
  - ▶ Missing equipment is rented
  - ▶ Equipment brought in by customer
  
- ▶ Alternatives if option 1 fails?



# Open access: questions to ask

- ▶ Intellectual Property (IP) arrangements?
  - ▶ IP owned by client
  - ▶ IP is shared
  - ▶ IP is owned by facility
  
- ▶ Who pays?



# Open access: questions to ask

- ▶ What projects are of interest to the open access facility?
- ▶ What is the facility's mission?





# Different open access model 'stereotypes'

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

# Examples of entities giving open access



Hendrik Waegeman



Technology center



Florence Lutin



Equipment manufacturer



Claudio Fuentes  
Grünewald



University



Raimo Van der Linden



BIOPROCESS  
PILOT FACILITY

Private company



Mluisa Hernández  
Latorre



Technology developer



Mahrokh Samavati



Project

[slido.com](https://www.slido.com)

[#Pilots4U](https://twitter.com/Pilots4U)