

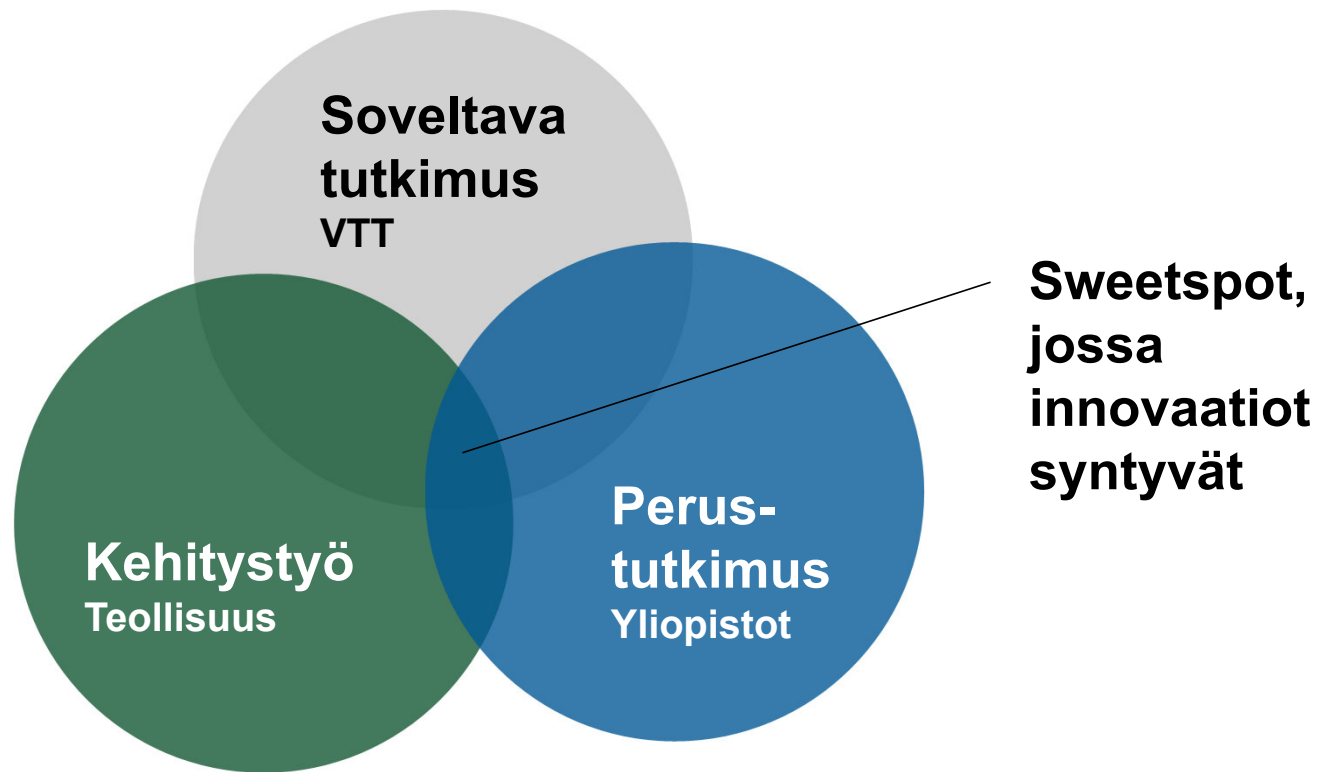


VTT Bioruukki Pilot Centre

VTT Bioruukki ja TKI- infrastruktuurien kansainvälinen yhteistyö

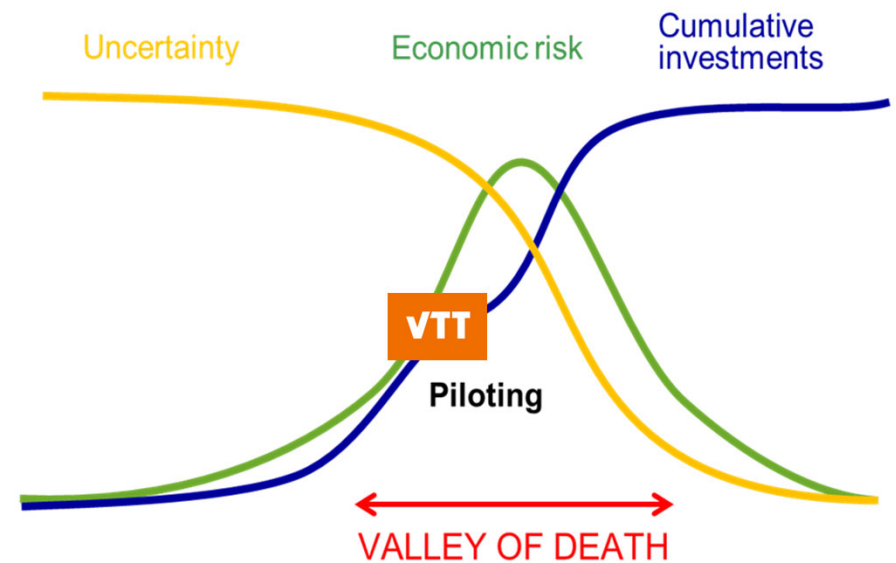
Mika Härkönen
Teknologian tutkimuskeskus VTT
12.11.2024, Lahden tiedepäivä

Viemme tiedettä käytäntöön soveltavalla tutkimuksella

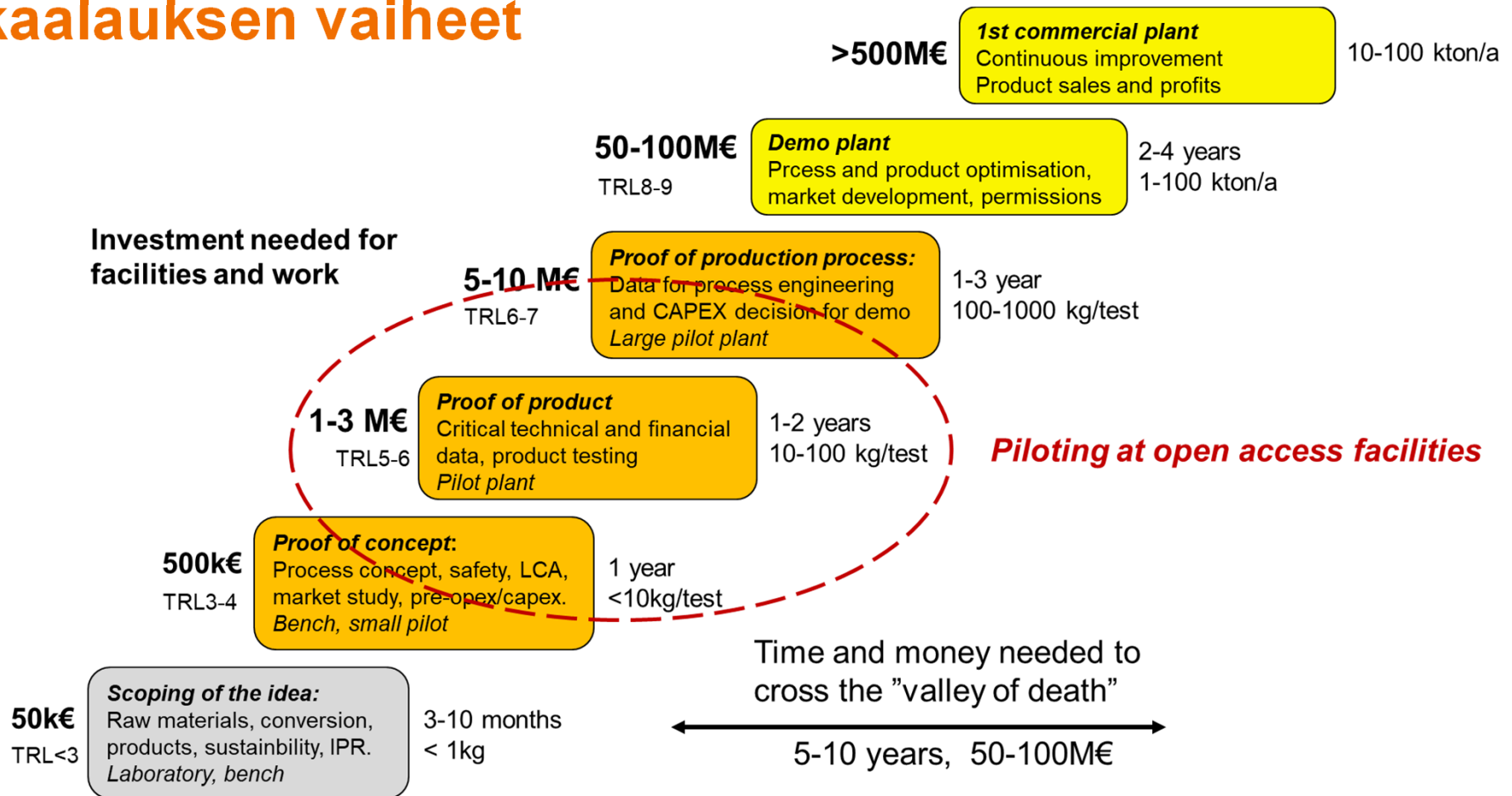


Laboratoriosta pilotoinnin kautta markkinoille

- **Pilotointi mahdollistaa "kuolemanlaakson" ylittämisen uusien teknologioiden kaupallistamisessa**
- **Uudet prosessiteollisuuden innovaatiot vaativat usein laajaa pilotointia.**
- **Avoin pilotointialusta (open access):**
 - Pilotoinnin ja skaalauksen osaaminen sekä sitä tukevat toiminnot
 - Ajansäästöä käyttövalmiilla tiloilla
 - Kustannussäästöjä jakamalla investointi- ja käyttökustannukset



Uuden teollisen tuotantoprosessin skaalauksen vaiheet



VTT:n pilot- ja tutkimusympäristöt kattavat hyvin bio- ja kiertotalouden teknologioiden tutkimusaiheet



Industrial biotechnology

Fermentation and bioprocessing

Food processing and brewing

Strain development



Biomass fractionation and upgrading

Biomass fractionation and pulping

Nano- and microcellulose

Lignin modification

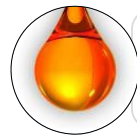


Process chemistry

Chemical processing and catalysis

Hydrometallurgy

Separation technologies



Thermochemical conversions

Gasification, CCU

Pyrolysis and upgrading

Combustion, CCS



Sustainable materials

Fibre based web production

Plastic and composite processing

Textile fibre spinning

R2R surface treatment

Cellulose films

VTT Bioruukki Pilot Centre

VTT Bioruukki pilotointikeskus

Mahdollistaja uuteen lisäarvoiseen bio- ja kiertotalouden liiketoimintaan



VTT Bioruukki pilotointikeskus valmistui vaiheittain



THERMOCHEMICAL CONVERSIONS PLATFORM

Gasification and pyrolysis technologies for biofuels and biochemicals. Recycling concepts. Carbon re-use and energy storage.

Started in Bioruukki
2015

12.11.2024 Lahden tiedepäivä

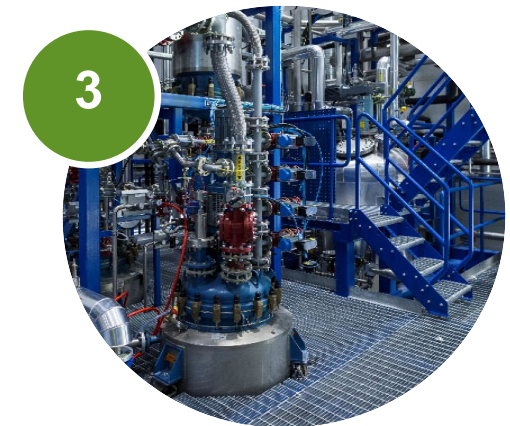


BIOMASS PROCESSING and BIOMATERIALS PLATFORM

Biomass processing and fractionation. Cellulose based textile fibres. Surface coating and cellulose films (2022).

Started in Bioruukki
2018

VTT – beyond the obvious



PROCESS CHEMISTRY PLATFORM

Multi-purpose pilot plant for chemicals, materials, new processes and recycling concepts. Catalytic conversions. Hydrometallurgy.

Started in Bioruukki
2020

VTT Bioruukki - Euroopan suurin ja monipuolisin vihreän siirtymän tutkimus- ja pilotointialusta

VTT Bioruukki's clean energy pilot platform will be built in 2024–2026.

Comprehensive research facilities for carbon neutrality in transport and industry.

Innovation platform for new solutions for hydrogen, electrification and renewable fuels.



VTT Bioruukin asiakkaat ja kumppanit etsivät uusia liiketoimintamahdollisuuksia

- Prosessiteollisuus
- Teknologiyritykset
- Pk-yritykset, startup-yritykset
- Tutkimuslaitokset ja yliopistot
- Alueet ja kunnat
- Eurooppalaiset pilottiverkostot



Uudenmaan liitto
Nylands förbund



Helsinki Partners



Bioruukin pilottikeskus on tunnustettu keskeiseksi toimijaksi eurooppalaisissa TKI infraverkostoissa

Past European RI collaboration projects with active participation of VTT and Bioruukki

ERIFORE (2016-2018)

- Horizon 2020 project for forest based circular bioeconomy research infra collaboration. Coordinated by VTT

SmartPilots (2016-2020)

- Interreg Europe project for bioeconomy pilot cooperation, business models and political influencing

Pilots4U (2017-2019)

- Combines open access pilots in industrial biotechnology, chemistry and biofuels, Database and network, BBI JU / Horizon 2020

BRISK2 (2017-2022)

- Biofuels Research Infrastructure for Sharing Knowledge, Horizon 2020.

IBISBA (2017->..)


- Industrial biotechnology and synthetic biology, Research Infrastructure for Sharing Knowledge, on ESFRI road map since 2018.



Euroopan biotalouspilotit ja startupit yhteistyössä Pilots4U-verkostossa ja CoPilot-hankkeessa



The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.

Co-CREATING
the next generation database and platform of pilot and demo infrastructures, unlocking faster innovation and EU bioeconomy growth

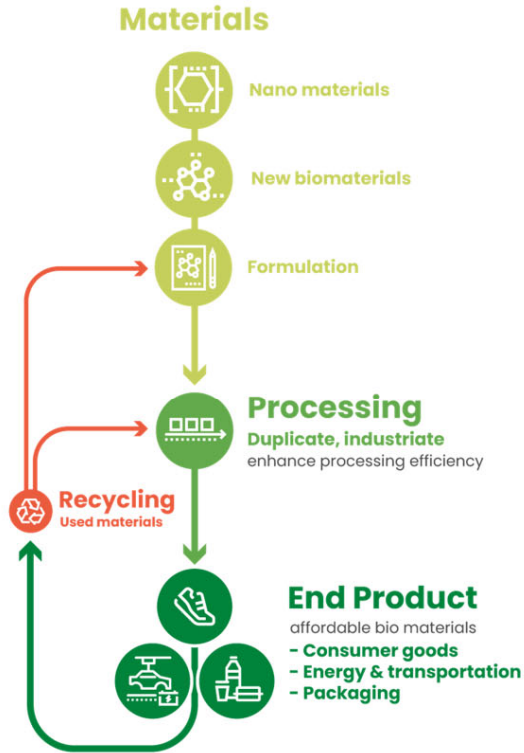
- CO-CREATION SESSIONS
- SCALE-UP & GROWTH PROGRAMME
For Innovators & enablers active in the bioeconomy
- CONNECT & EXCHANGE PROGRAMME
To enhance community building
- OPEN CALL FOR TRAVEL VOUCHERS
To encourage participation of start-ups, follower countries, policy makers ...

INN-PRESSME – Euroopplainen one-stop-shop nano- ja biopohjaisten materiaalien pilotointiin



The Project

INN-PRESSME aims at **developing & implementing a sustainable Open Innovation Test Bed (OITB)** to support European companies to **scale up their nano-enabled biomaterials & processes** from TRL 4-5 to 7 using **16 Pilot Lines across Europe**



RITIFI –Teknologiainfrastruktuurien konsepti Eurooppaan ja suosituksia toimintamallille



HEU CSA project
Duration 2023-2025

The RITIFI project, composed of RI and TI stakeholders from 10 European countries, aims to improve the integration and structure of the European R&I landscape by developing a functional framework and providing guidelines for the integration of Research Infrastructures (RIs) and Technology Infrastructures (TIs).

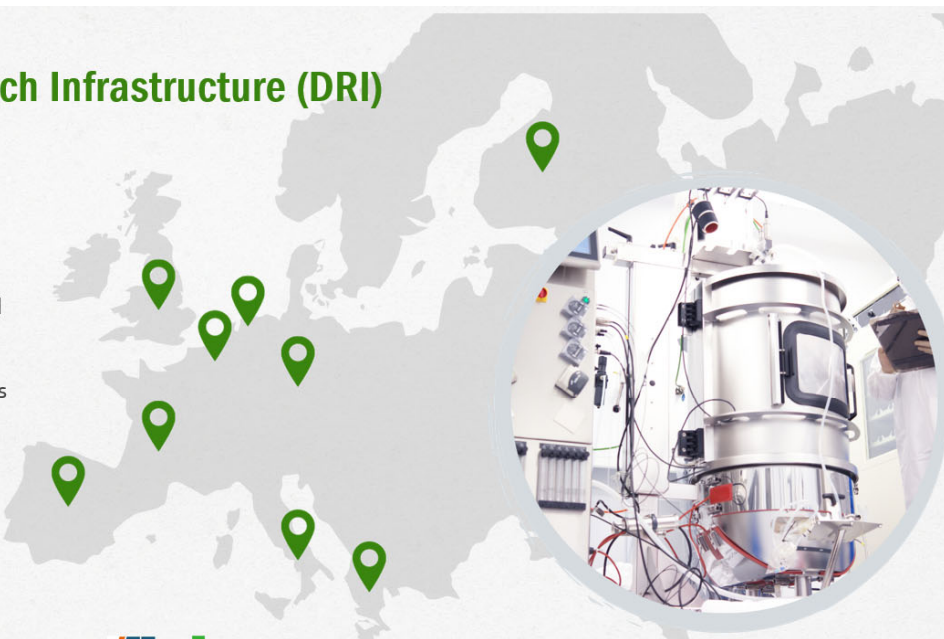
IBISBA – teollisen bioteknologian hajautettu tutkimusinfrastruktuuri ESFRI-tiekartalla


A Distributed Research Infrastructure (DRI)
Who is IBISBA ?

We are R&D organizations from **9 Countries**: 8 EU Members States (France, Spain, Finland, Netherlands, Belgium, Germany, Greece, Italy) and UK

UK, France and Germany are Europe's top industrial biotech players

Our **aim** is to reduce fragmentation and provide a comprehensive set of high-level R&D&I services for industrial biotechnology players



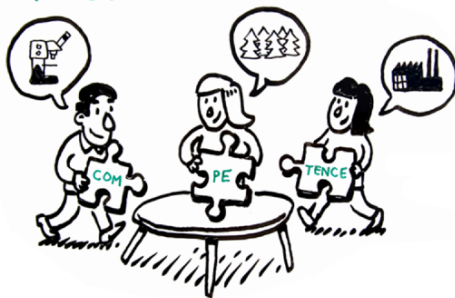


Kahdenväläinen yhteistyö etenkin pohjoismaisten ja suomalaisten TKI-infrojen kanssa

RISE

NORDIC RTO'S COLLABORATION ON TESTBEDS AND TECHNOLOGY INFRASTRUCTURES STRENGTHENS THE IMPACT ON EUROPEAN GREEN TRANSITION

WE ARE STRONGER
TOGETHER



Mika Härkönen and **Pauliina Tukiainen**, VTT
Karin Johnson and **William Mackintosh**, RISE

Nordic Wood Biorefinery Conference 2022
25.10.2022

VTT



Pia Sandvik CEO at RISE and Antti Vasara, CEO at VTT.

bey⁰nd

the obvious



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