



***Bio Base Europe:***  
an Instrument for Start-Ups and SMEs to Bridge  
the Gap Between Laboratory Research and  
Industrial Production

*Italian Forum on Industrial  
Biotechnology and Bioeconomy  
September 25, 2014, Genova, Italy*

Hendrik Waegeman, PHD

# About BBEU



Multi-purpose pilot facility for bio-based products and processes

## Fact and figures

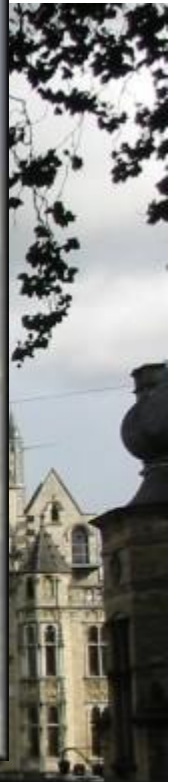
- Founded in 2008 as a joint initiative between Ghent Bio-Economy Valley and Biopark Terneuzen
- Turnover in 2013: 3.3 M€
- Current number of employees: 40
- No industrial shareholders



# City of Ghent



Bio Base Europe  
Pilot Plant





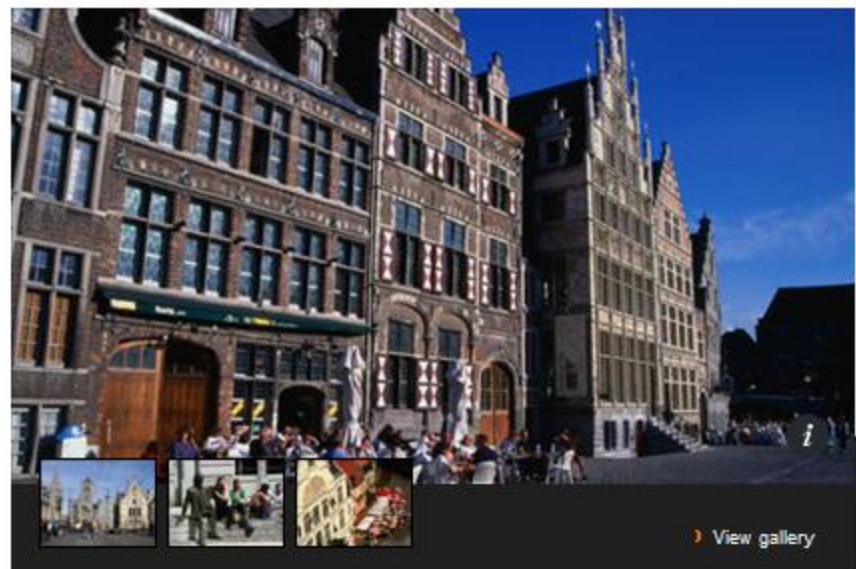
Europe / Belgium  
Belgium  
Tips & articles

- Tips & articles
- BELGIUM**
- Overview
- Places in Belgium
- When to go & weather
- Getting there & around
- Practical information
- History
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- Hotels
- Forum

- THINGS TO DO**
- All things to do (956)
- Activities (56)
- Entertainment (224)
- Restaurants (213)
- Shopping (197)
- Sights (261)
- Tours (5)

Apr 1, 2011 3:59:19 AM

# Ghent: Belgium's best kept secret



View gallery

If you automatically think a trip to [Belgium](#) means a trip to [Bruges](#), think again. The September '09 issue of *Lonely Planet Magazine* clues you in to [Ghent](#): the new Bruges:

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# Ghent: number 7

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## Lonely Planet's top 10 cities for 2011



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BBEPP

## BBEPP

A leading pilot plant for industrial biotechnology and bio-based products in Europe



Biorefinery rodenhuize docks: the largest integrated production complex for biofuels in Europe



240 MW  
bio-electricity

Electrabel 

300.000 mT  
biodiesel

 **bioro**  
biodiesel refinery

 **Cargill**

**Oil**tanking

200.000 m<sup>3</sup>  
bio-ethanol

 **alcoBIOFUEL**  
Energy by nature

**EuroSilo**

Excellent location

In the heart of the Belgian bio-industry



80 ha of land reserved for bio-refineries and bio-based production plants



Excellent location

Create a hub for industrial biotechnology in the Port of Ghent



# Why is piloting so important?

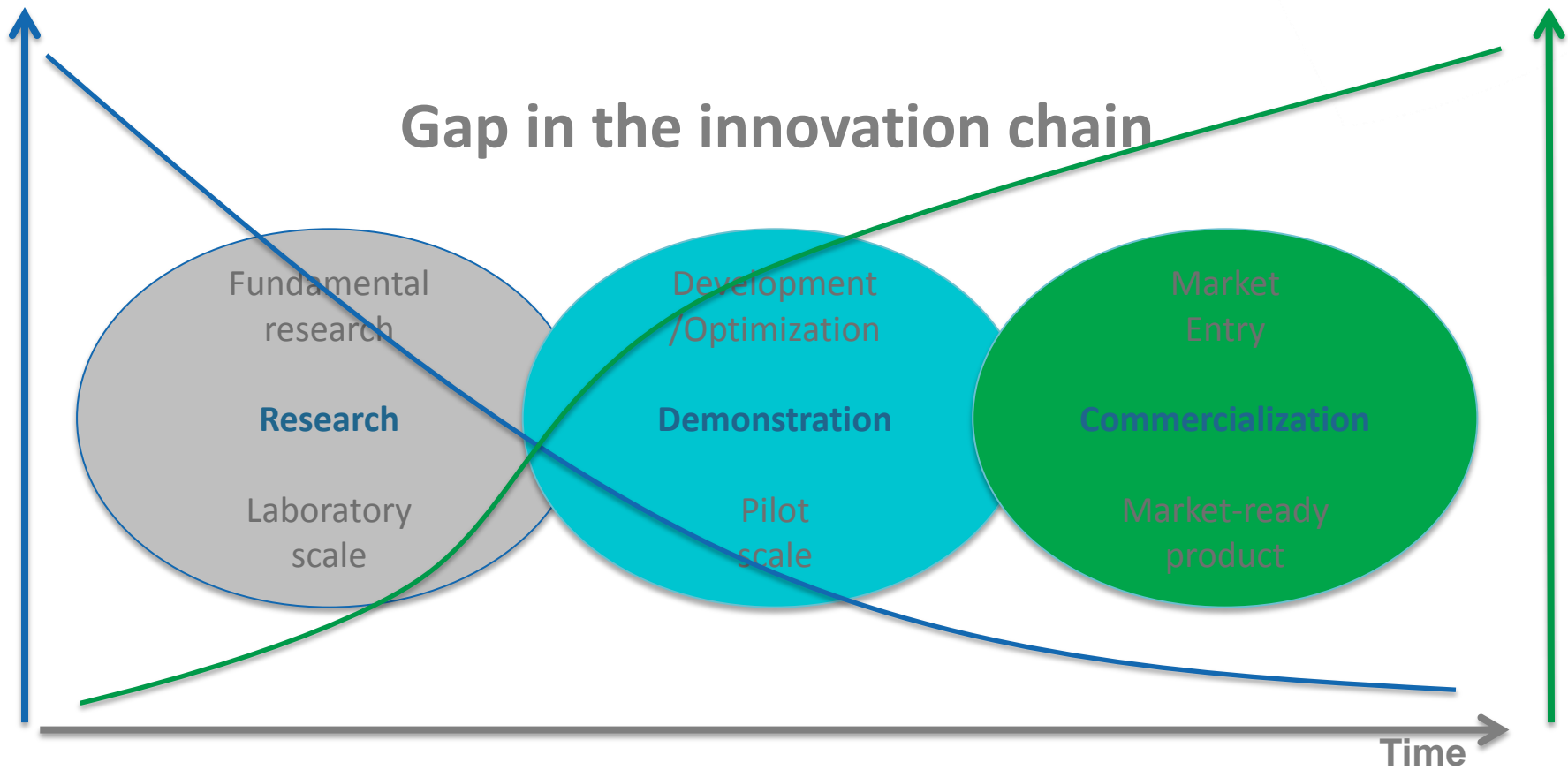


**“What’s the opposite of ‘Eureka!’?”**

Technological risk

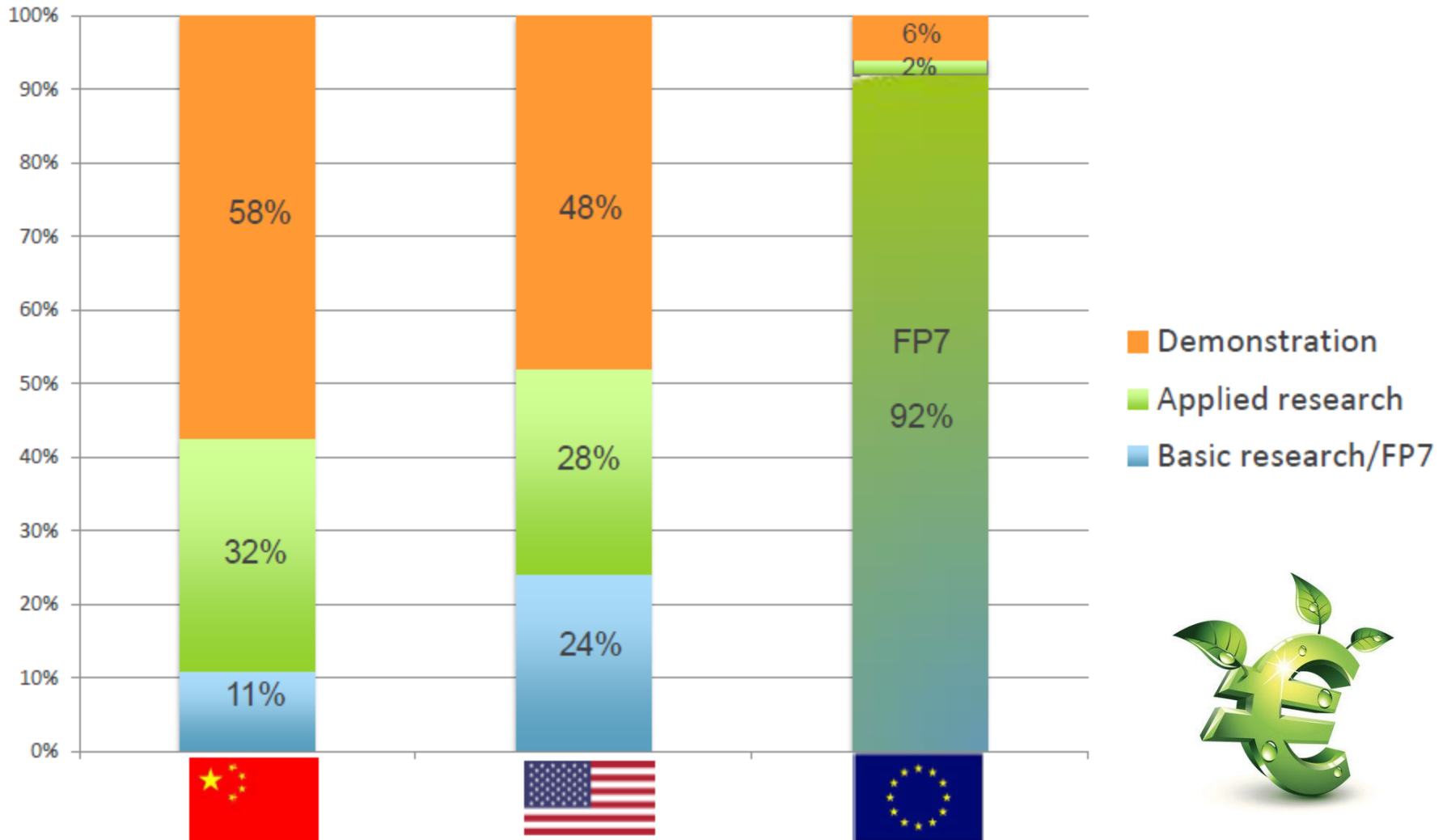
Capital requirements

## Gap in the innovation chain





# Why is piloting so important?



# Europe takes action...



More budget for pilot and demonstration activities





# ...it is not only about budget

- For SMEs: piloting is not the core of their activities
  - No infrastructure
  - No necessary permits
  - No skilled personnel or network
- Pilot activities are better outsourced....
  - FASTER LEARNING CURVES
  - SHORTER TIME TO MARKET



# Before 2010...





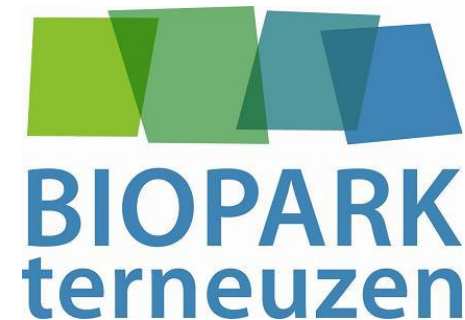


# Hope...



A joint initiative of Flanders and The Netherlands  
with a total budget of 21 M€

Founding fathers:

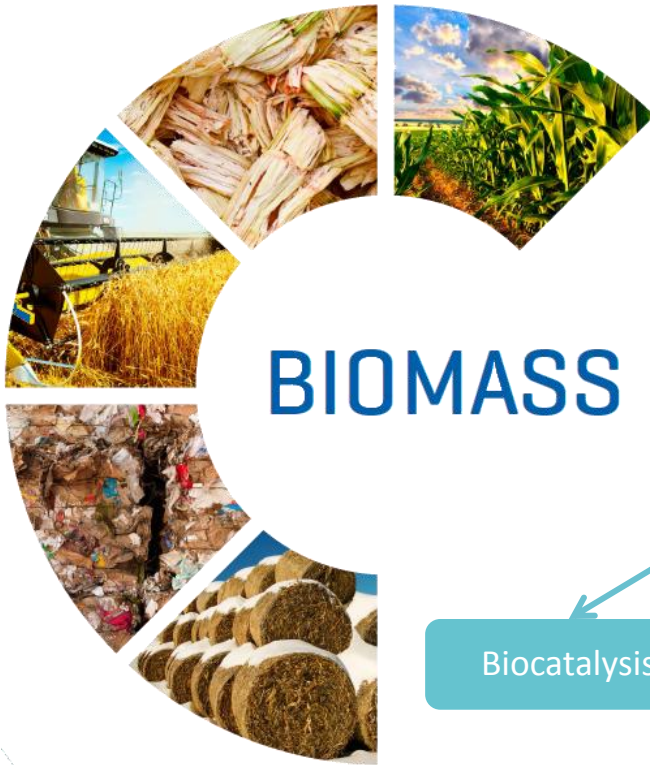




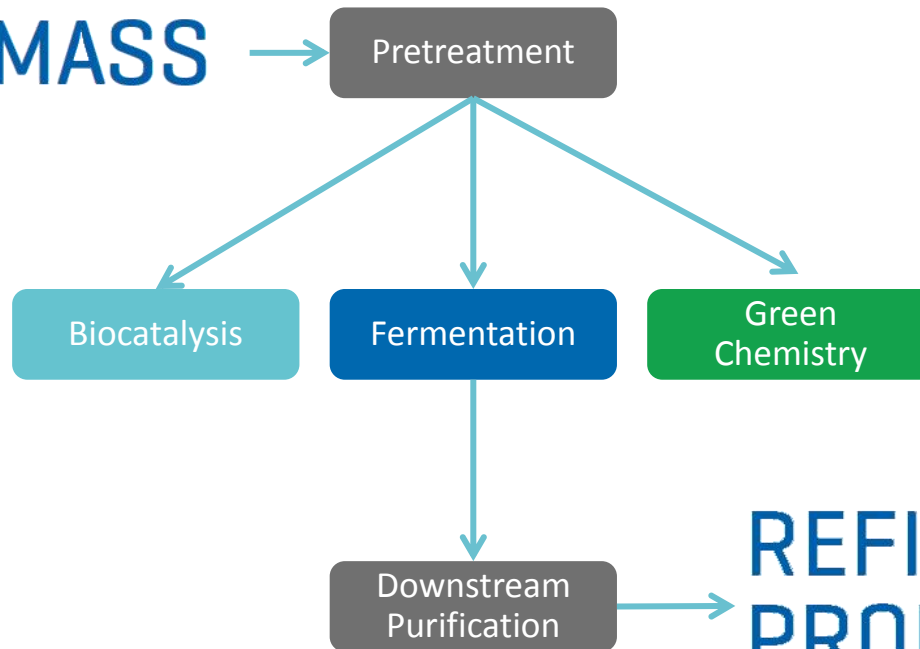
# One of Europe's first pilot plant for bio-based products and processes



# A one-stop-shop



**BIOMASS**





# Examples



## **Biomass:**

Corn stover, wheat straw

Bagasse

Paper pulp

Oils and fats

Leaves, Husk, Stems

Agro Industrial by-products

Non-food crops

...

## **Bio-products:**

Bio-chemicals

Bio-polymers

Industrial Enzymes

Bio-fuels

Surfactants

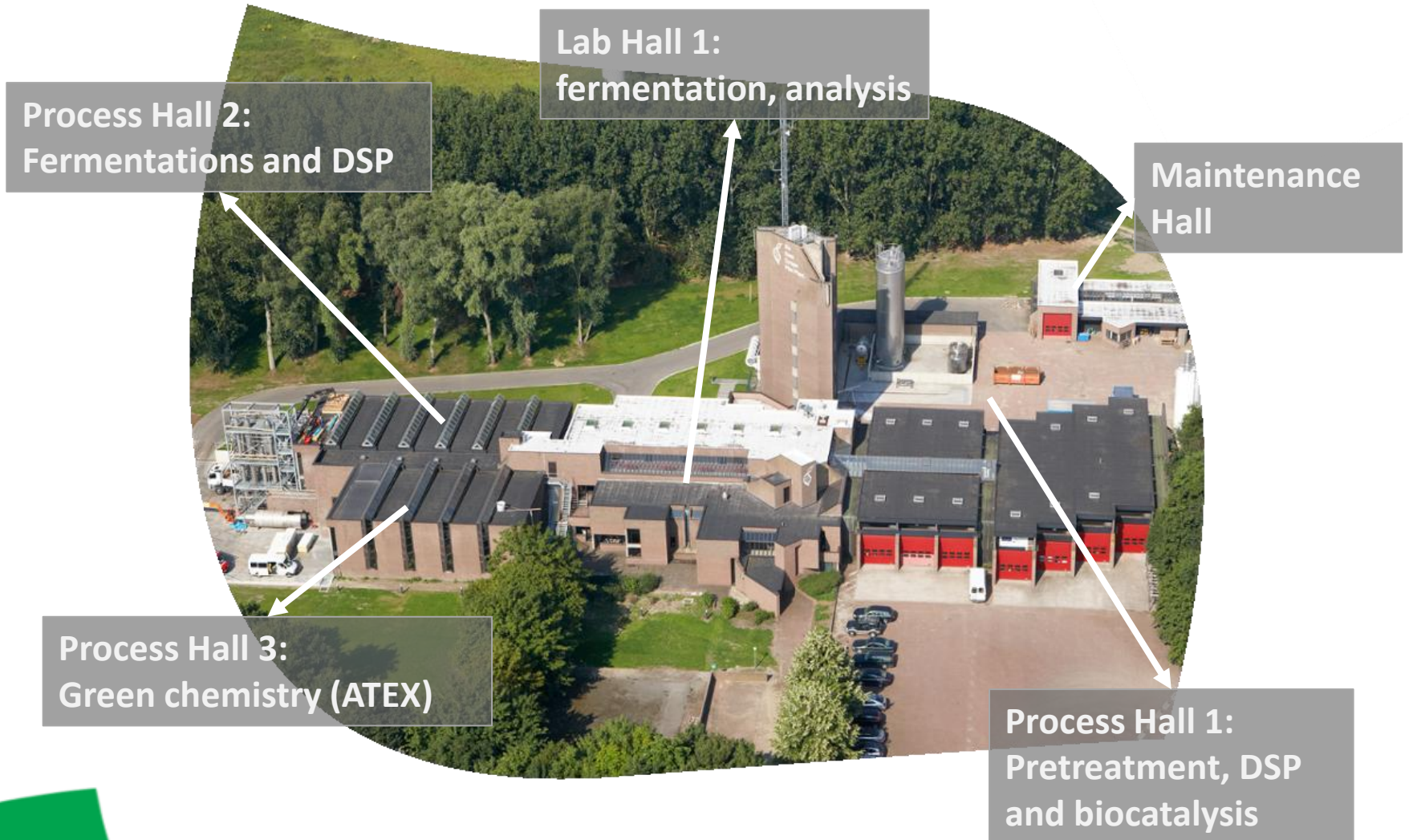
Specialty carbohydrates

Nutraceuticals

...



# Infrastructure





## Process Hall 1

Biomass pretreatment, biocatalysis and DSP





## Process Hall 2

Fermentations and DSP



## Process Hall 3

Green chemistry and ATEX proof DSP

# Showcase 1



Scale up of enzymatic glycosylation reactions



# Video



- <https://www.youtube.com/watch?v=D6O6d1BD6gc>

# Showcase 2: CELTIC RENEWABLES

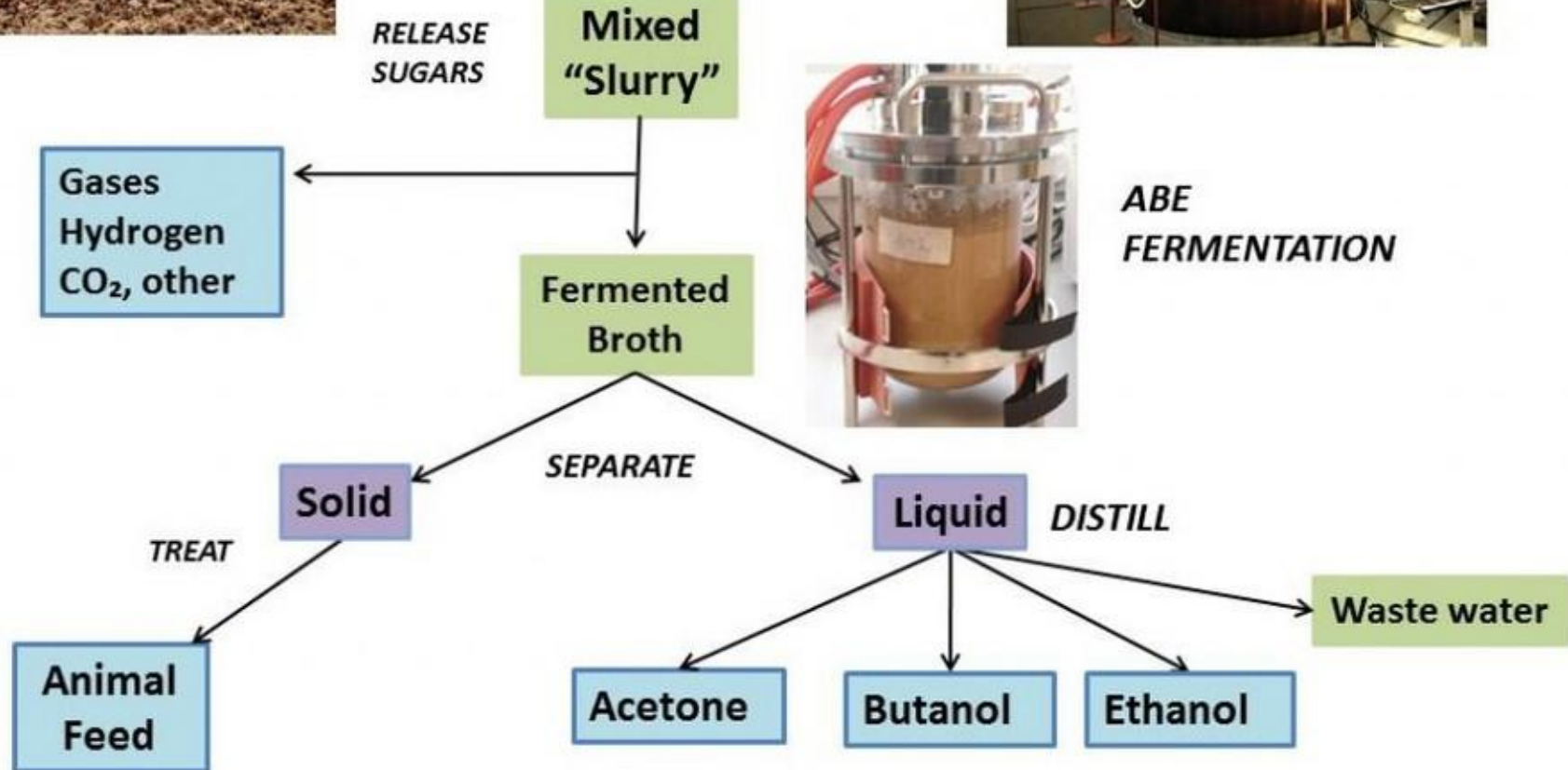


- Scottish-based technology company
- Aim: convert side-streams from the whisky industry in bio-based products
- Raw materials:
  - Draff: the residue of husks after fermentation of the grain
  - Pot ale: residue in the pot after distillation
  - Mixed and used as animal feed
- Partnership with BBEU for scale up





# THE PROCESS





# Special focus towards SMEs



Biorefining & Bioenergy

AN ENTERPRISE IRELAND  
& IDA IRELAND INITIATIVE



NNFCC

The Bioeconomy Consultants

**CLIB**

2 0 2 1  
CLUSTER  
INDUSTRIELLE  
BIOTECHNOLOGIE

- 8 partners
- 5 countries

NV **REWIN**  
WEST-BRABANT



Bio Base Europe  
Training Center



Bio Base Europe  
Pilot Plant

GHENT  
BIO-ECONOMY  
VALLEY



- € 6,4 Mio
- 3 years (2013-2015)

# Bio Base NWE: expected results

To support the development of the bio-based economy in NWE

- 250 companies/institutes with improved innovation capacity
- 50 feasibility analyses for SMEs
- 5 new marketable products, processes and services
- 1 new enterprise created



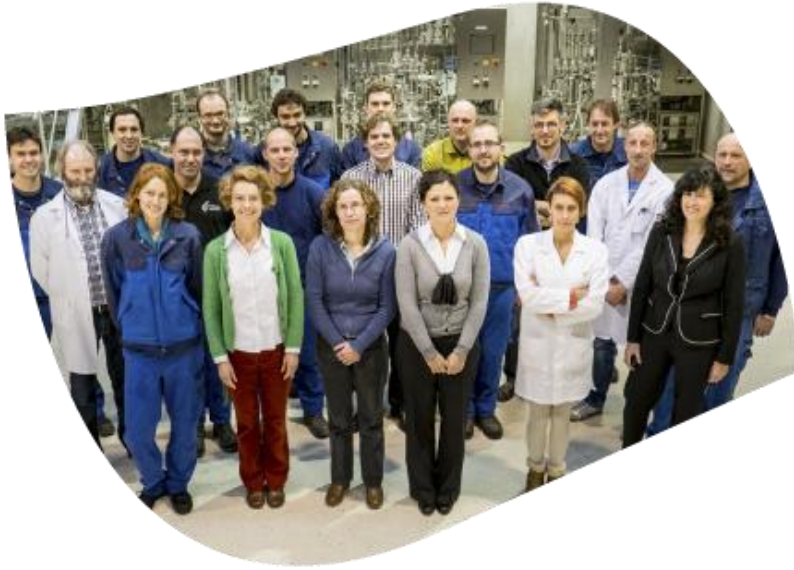
## Bio-innovation coupon scheme

- 50 Bio-innovation coupons worth € 10K, to be used at BBEPP, awarded to SMEs and start ups for
  - Feasibility studies
  - Pilot tests
- Info on [www.biobasenwe.org](http://www.biobasenwe.org) or contact the bio-innovation agent in your region





# Questions?



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Pilot Plant**

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