Circular Bio-based Europe
Joint Undertaking

Building on the achievements of BBI JU

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Bio-based Industries Consortium

Co-funded by the European Union

Bio-based industries value chains in the EU €700 billion – 3.6 million direct jobs*

But remaining **challenges** and **risks**

* BIC-NOVA INSTITUE figures 2017

BBI JU was part of the EU Bioeconomy Strategy in 2012

Public-Private Partnership (PPP)

Bio-based Industries Consortium

Budget: €3.7 billion

EU	25%
Bio-based Industries Consortium	75%

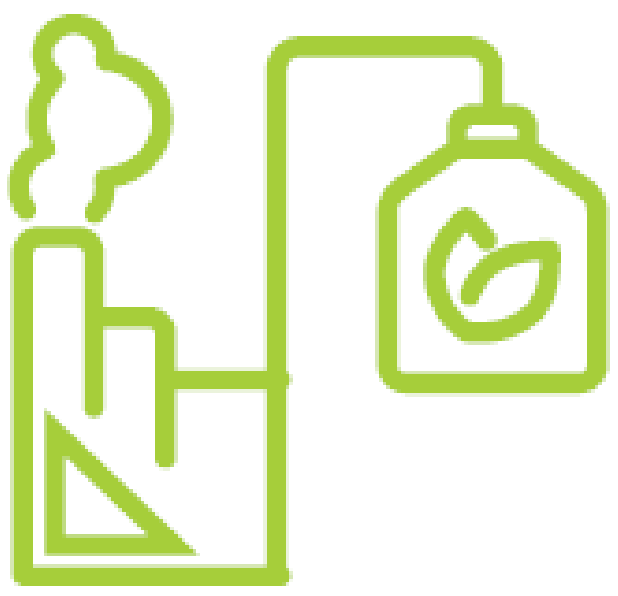
Mission: Support EU's R&I programme in bio-based industries in 2014-2024:

- **De-risk** investments
- Reach **critical mass**
- **Organise** the value chains

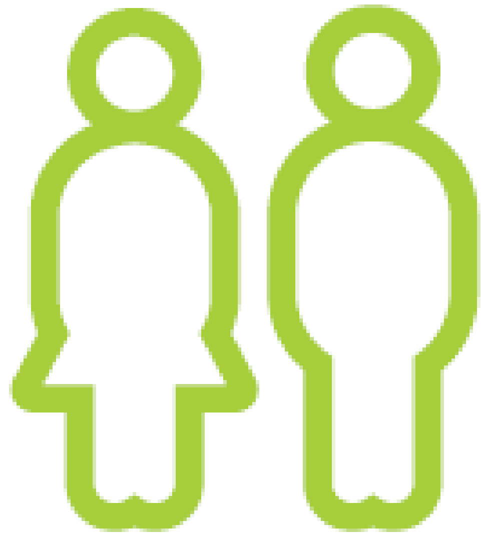
Implementation

- Trigger - Keep - Attract
- Mobilising effect
- Structuring effect

Expected impact for Europe by 2030*
2014 - a flavour of the European Green Deal

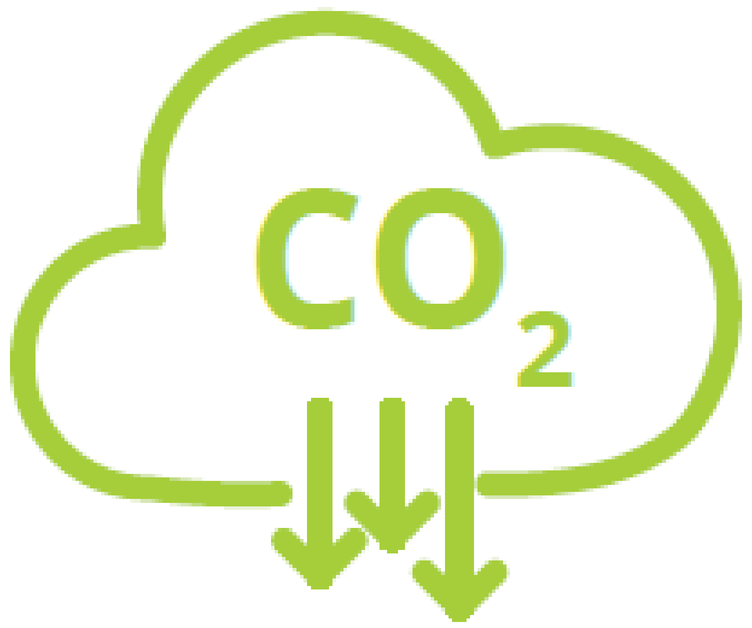


- Replacing 25% of oil-based chemicals by 2030
- 10 times more bio-based materials



- Creating up to 700,000 green jobs by 2030, especially in rural and coastal areas
- Diversifying and growing farmers revenues

Reducing EU's dependency on the import of strategic raw materials, such as protein (by 50%), phosphorus and potassium (by 25%)



Reducing greenhouse gas emissions by 50%

* Sources: EU Bioeconomy Strategy, SIRA 2017 & Impact Assessment

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BBI JU objectives

Develop sustainable and competitive bio-based industries in Europe, based on advanced biorefineries that source their biomass sustainably.

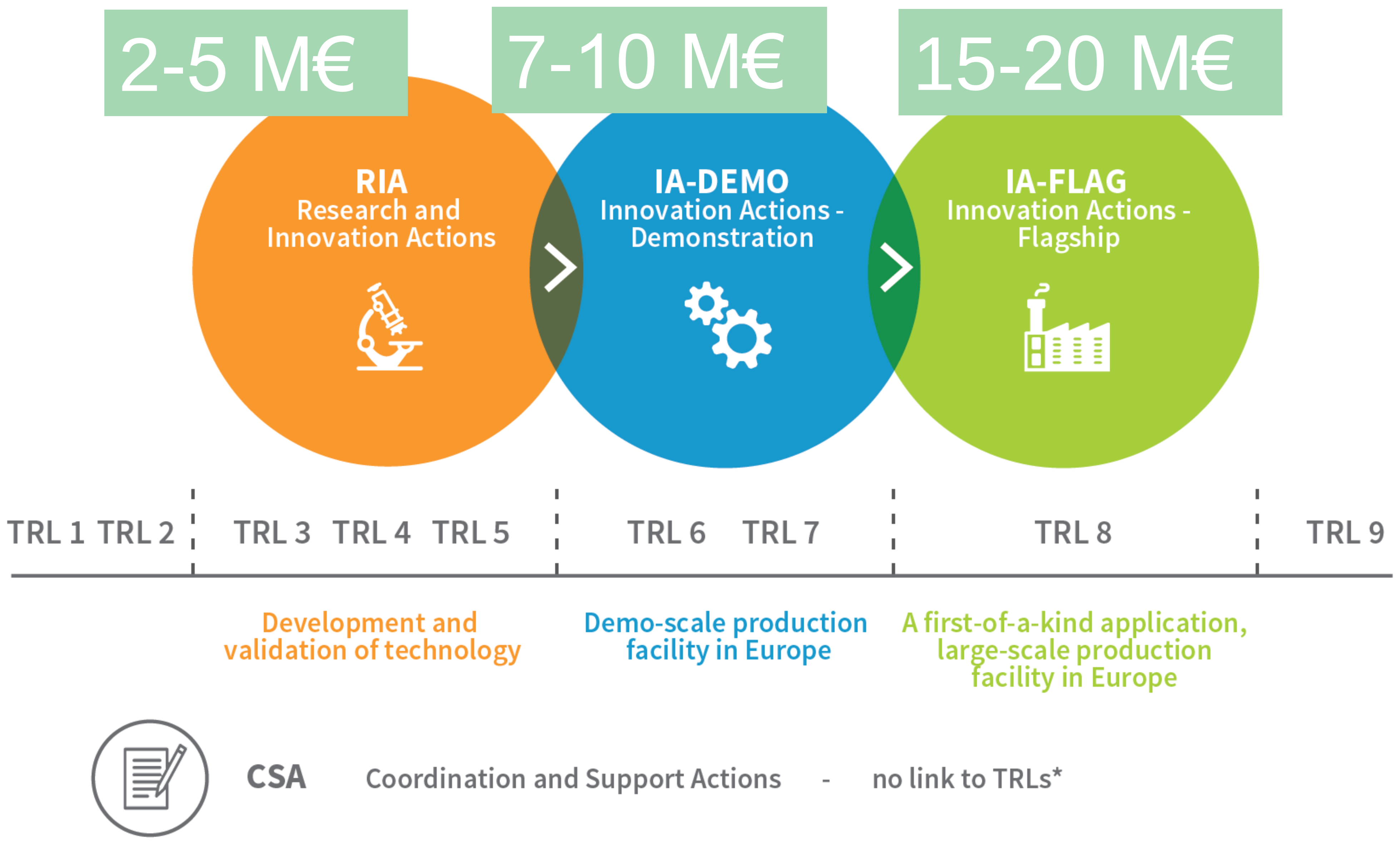
How? By implementing SIRA via calls for proposals under H20020

1. Demonstrating new technologies — RIA

2. Developing business models — Demo

3. Set-up flagship biorefinery plants — FLAG

Funding range



*TRL = Technology Readiness Levels

Efficient, reactive & agile programming process for maximal impact

Strategic level: SIRA

Strategic Innovation and Research Agenda guiding document

Developed by BIC & EC

Operational level

Annual Work Plan

Drafting - Approval - Supporting

+ Scientific Committee
+ States‘ Representatives Group

Call for proposals

RIAs, IAs, CSAs

Publication - Evaluation - GAP

Portfolio management

Reporting - Monitoring - Dissemination

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BBI JU key figures - calls 2014-2020

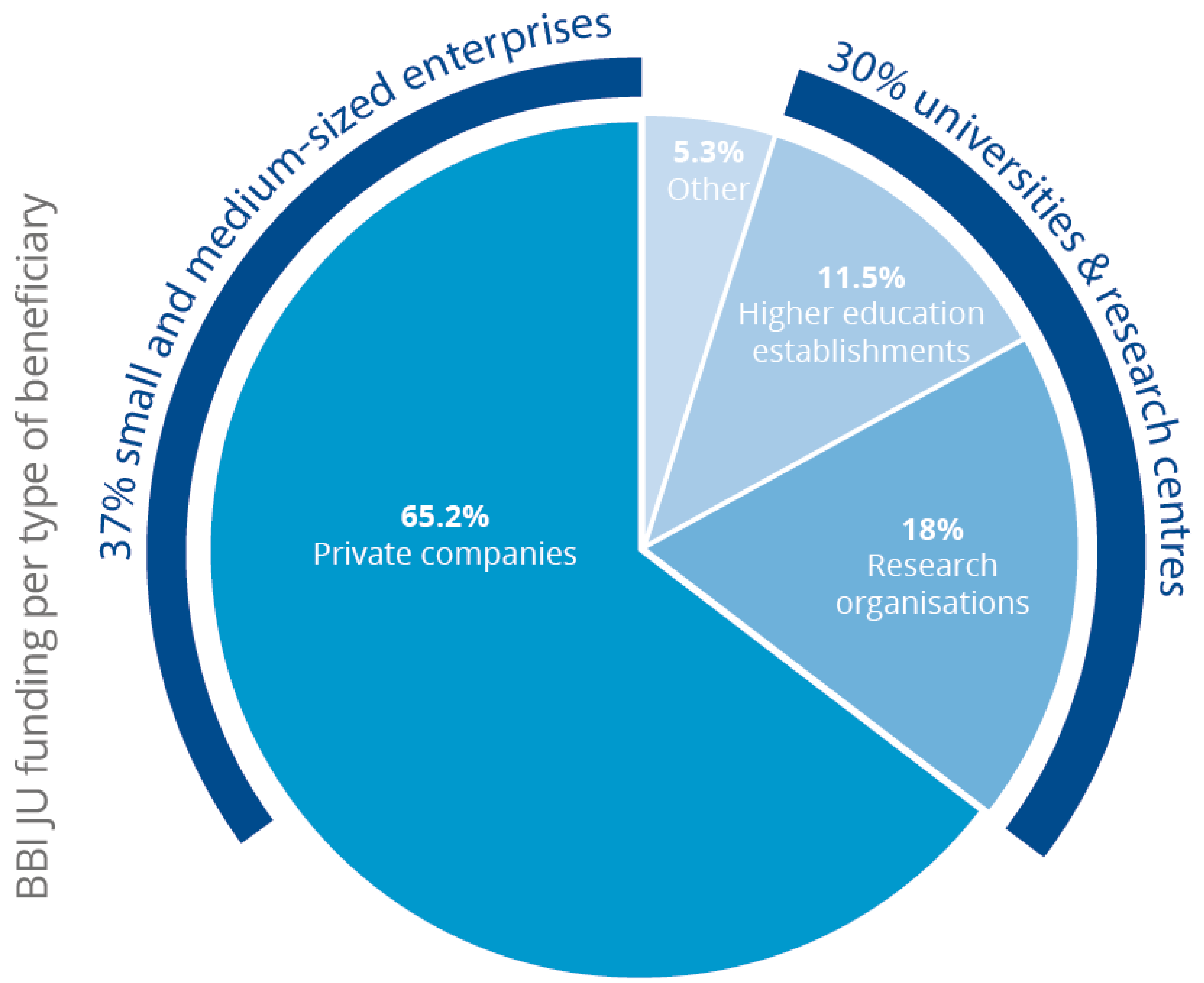
Data: CORDA, June 2021

142 projects

1055 beneficiaries

€822 million BBI JU funding

39 countries



→ 74% of BBI JU projects report they contribute to increased academia – industry cooperation

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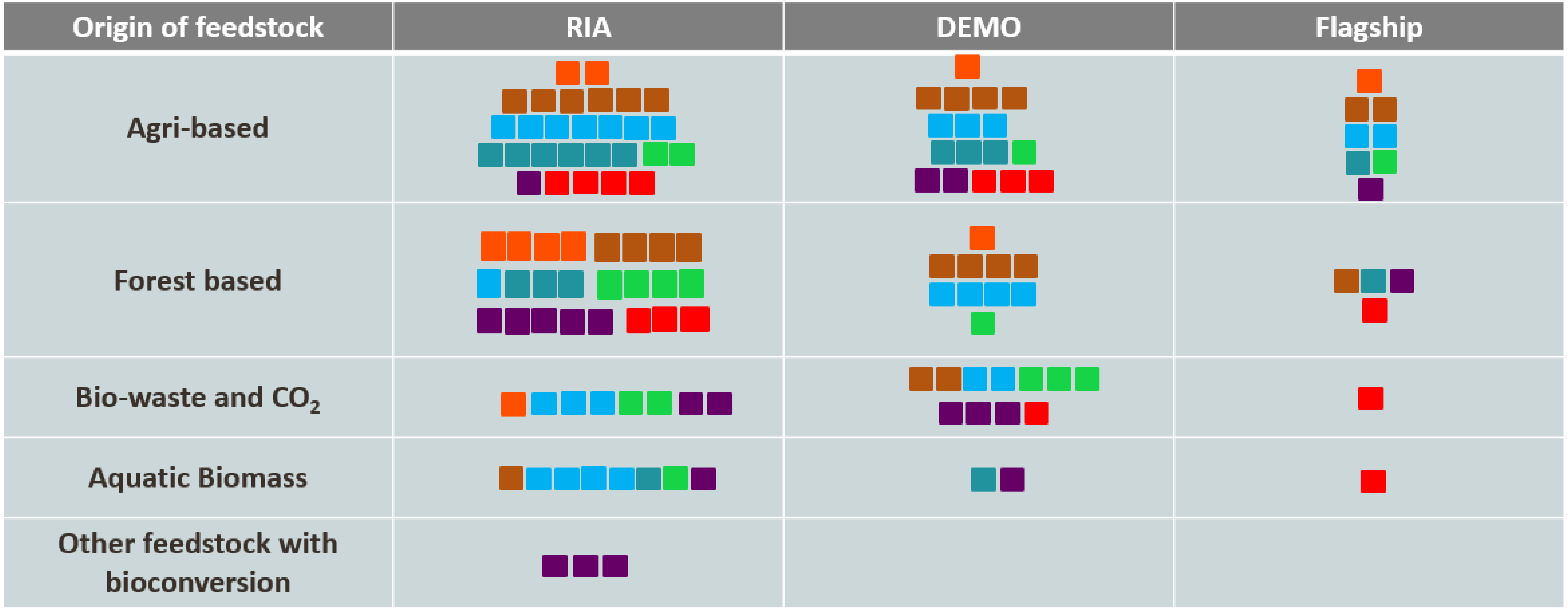
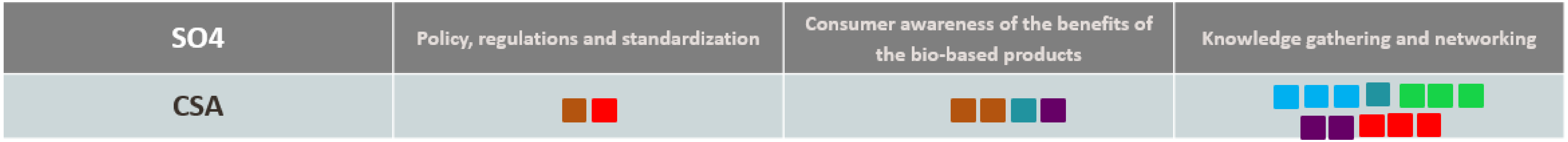
BBI JU project portfolio origin of the main source of feedstock

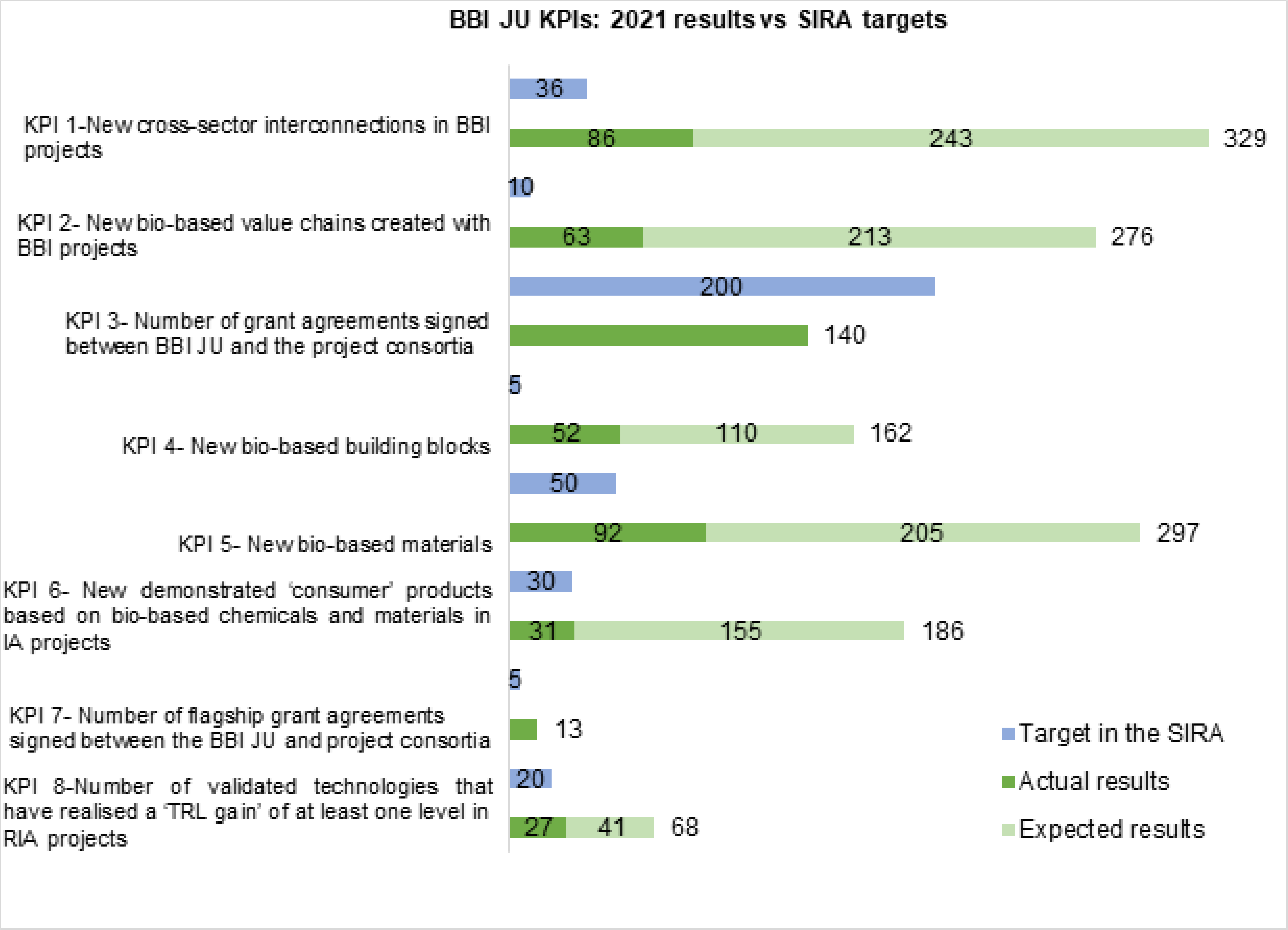
Calls 2014 + 2015 + 2016 + 2017 + 2018 + 2019 + 2020





Projects portfolio and KPIs

BBI JU projects overperform many of the SIRA targets

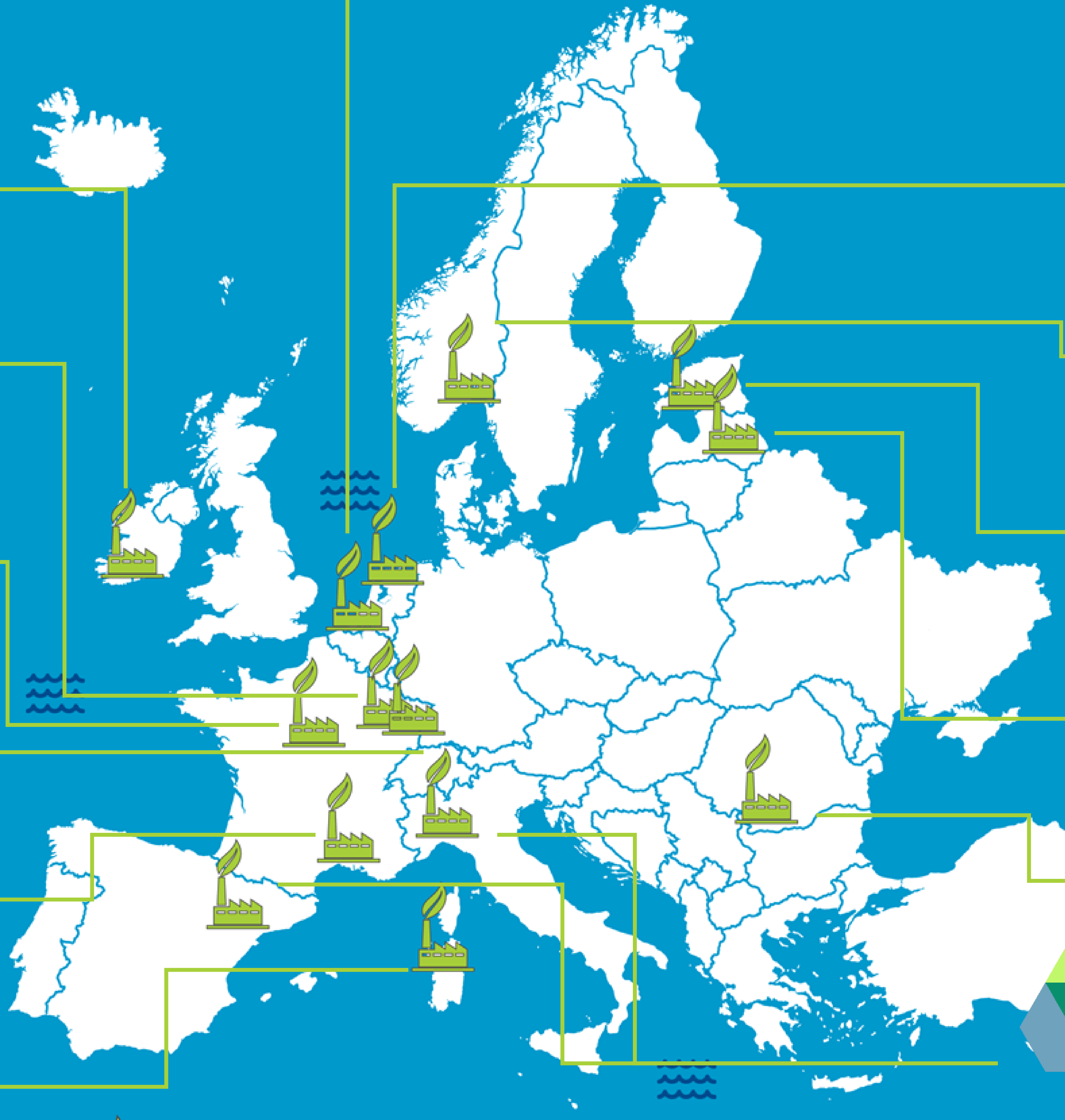


Demonstration plants are represented by the locations that receive the main investment in the project.

BBI JU flagship projects

Flagships are first-of-their-kind biorefineries deployed at industrial scale

BBI JU



Location	Project	Project	Location
Sas van Gent the Netherlands	PLENITUDE	PEFerence The Renewable Innovation	Delfzijl the Netherlands
Co. Tipperary Ireland	AgriChemWhey	EXILVA PROJECT	Sarpsborg Norway
Saint-Avold France	AFTER BIOCHEM	SWEETWOODS	Imavere Estonia
Amiens France	farmYng	VIOBOND	Riga Latvia
Saint-Avold France	ReSolute	lignoflag BBI JU	Podari Romania
Baillargues France	SCALE	CIRCULAR BIOCARBON	Zaragoza & Sesto San Giovanni Spain & Italy
Porto Torres Italy	FIRST 2RUN		

Flagship biorefinery


AgriChemWhey
Dairy sidestreams
Lactic acid, minerals for food and fertilisers
PLENITUDE
Residues of cereal crops
Mycoproteins
PEFerence
Crop residues
FDCA for bioplastics
EXILVA
Cellulose
MFC MicroFibrillated Cellulose
BBI JU
AFTERBIOCHEM
Sidestreams from sugar beet
Flavourings. fragrances, hygiene products, pharmaceuticals, antimicrobials & polymers
SWEETWOODS
Lignin & hardwood residues
High-quality C5/C6 sugars & dried lignin
FARMŸNG
Mealworms & agri-food sidestreams
Proteins for animal feed & organic fertiliser
VIOBOND
Forest-based
Bio-based resins
LIGNOFLAG
Crop residues
2G bioethanol biofuel – building block
SCALE
Microalgae
Nutritional ingredients for food, feed and cosmetics
ReSolute
Sidestreams from pulp & paper industry
Biodegradable, harmless & bio-based solvent: Cyrene
CIRCULAR BIOCARBON
Municipal solid waste
High-value products from fertilisers to 5G technology
FIRST2RUN
Underutilized oil crops
Building blocks for polyester production & vegetable oils
Flagship biorefinery

13 Flagship projects

4,700 direct jobs
15,000 indirect jobs

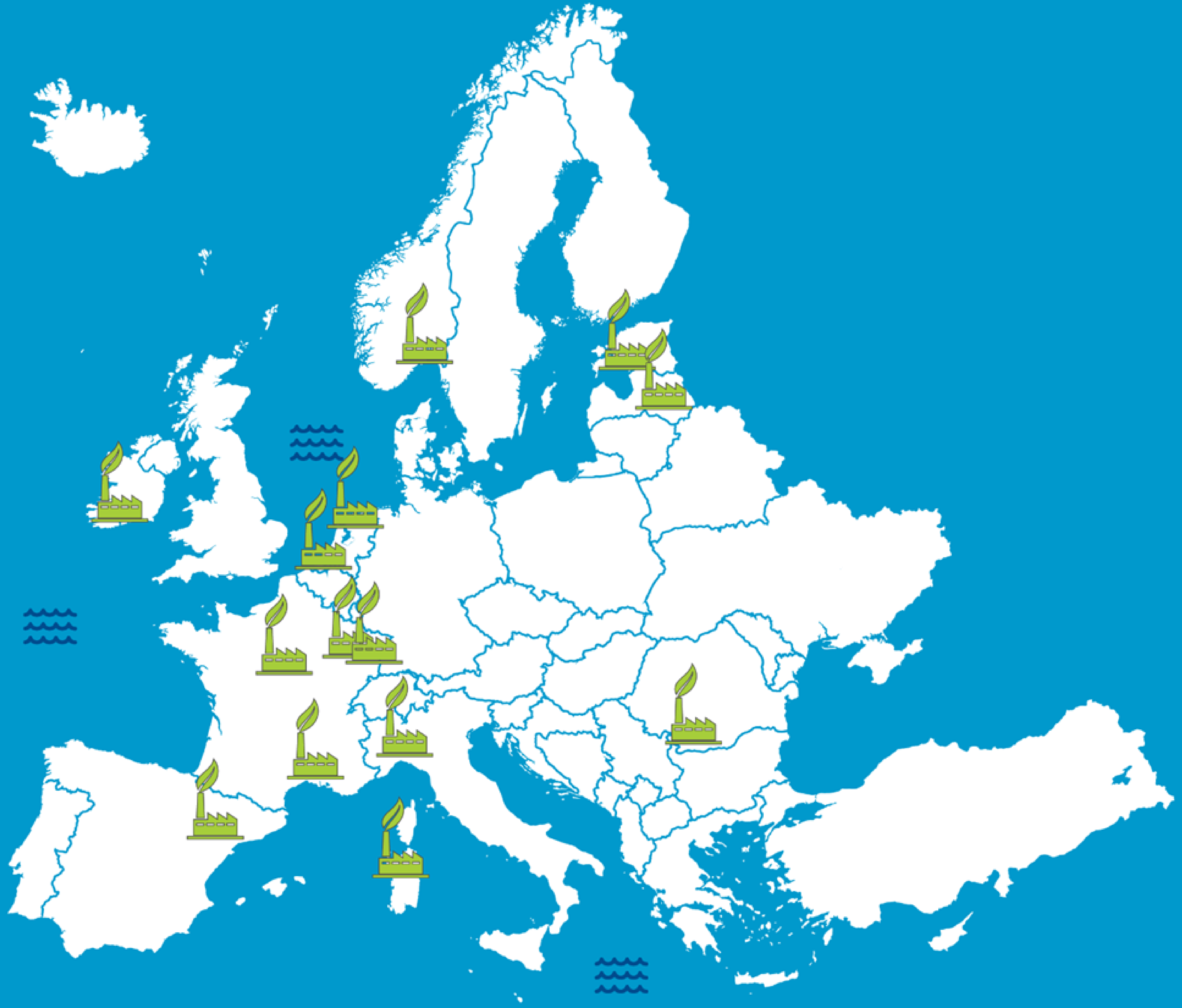
BBI JU grant:
€250 million

Private investment*:
€1.3 billion

Leverage effect:
€5.20 private investment
for €1 BBI JU grant

800+ KT CO_2 emission
savings

High replicability potential



Flagship biorefinery

Flagship biorefinery Call 2020

Key achievements, but …

- **Specific KPIs** from SIRA well on track and monitoring works
- **Socio-economic & environemental impact** in particular from DEMOs and FLAGs
- **BBI JU is achieving its objectives with two main effects:**
  - **Structuring effect**: value chain-driven cooperation across sectors creating competitiveness
  - **Mobilizing effect**: innovation-driven mobilising key stakeholders
- **Financial leverage effect overall on track**
- **Well-balanced portfolio** showing optimal value chains coverage, but room for improvement for municipal waste valorisation @ high TRL
- **High % of SME participation** (with a key role)
- **30% of funding** goes to **universities and research organisations**
- **Improved geographic coverage** thanks to coordinated actions

“We were not there yet” CBE JU under Horizon Europe

- **Huge and still risky investments**
  - ✓ Issues accessing private capital
  - ✓ Remaining funding gaps in Demo and Flag (non-bankable)
- **Structuration is still ongoing: market and demand risks**
- **Some areas not yet covered enough**:
  - ✓ Farmers’ participation – integration in value chains
  - ✓ Full feedstock potential
  - ✓ Geographic coverage
- **Maximise circularity – improve sustainability monitoring**
- **Positive contribution to biodiversity and safeguarding ecosystems**
- **Increase deployment capacity** & synergies with other sources of funding
- **Feedback to policy** - more coherent, supportive and stable regulatory framework
- **Improved storytelling when it comes to the bioeconomy & bio-based products**: consumer awareness, education

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