

# A competitive bioeconomy for a sustainable future

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## General and Specific CBE JU Objectives



Accelerate the **innovation** process and development of bio-based innovative solutions

Increase cross-disciplinary **research and innovation** activities, reaping its benefits for the development and demonstration of **sustainable bio-based solutions**.

Increase and integrate the research and innovation **capacity of stakeholders** across the EU to unlock **bioeconomy potential** even in regions with underdeveloped capacity.

Increase the **research and innovation** capacity and development of sustainable bio-based innovations, by ensuring that sustainability issues and environmental performance are integrated throughout the whole **innovation chain**.



Accelerate **market deployment** of the existing mature and innovative bio-based solutions

Reinforce the integration of **bio-based research** and innovation in EU bio-based industries and increase the involvement of R&I actors, including feedstock providers, in the **bio-based value chains**.

**Reduce the risk** for research and innovation investment in bio-based companies and projects.



Ensure a high level of **environmental performance** of bio-based industrial systems

Ensure that **circularity** and environmental considerations, including contributions to **climate neutrality** and **zero pollution** objectives, are considered in the development and implementation of R&I bio-based projects and facilitate **societal acceptance**.

# Building on the success of BBI JU 2014-2020



**142**  
projects



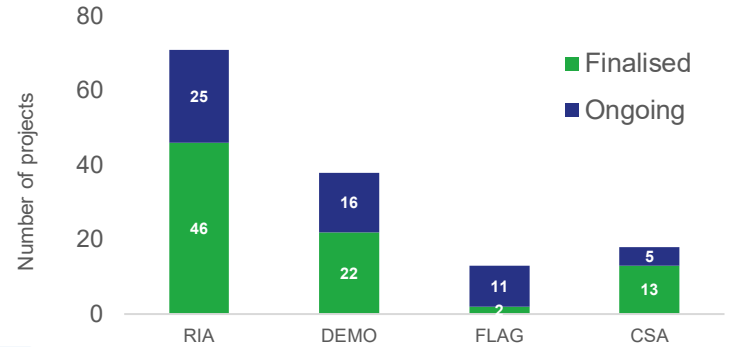
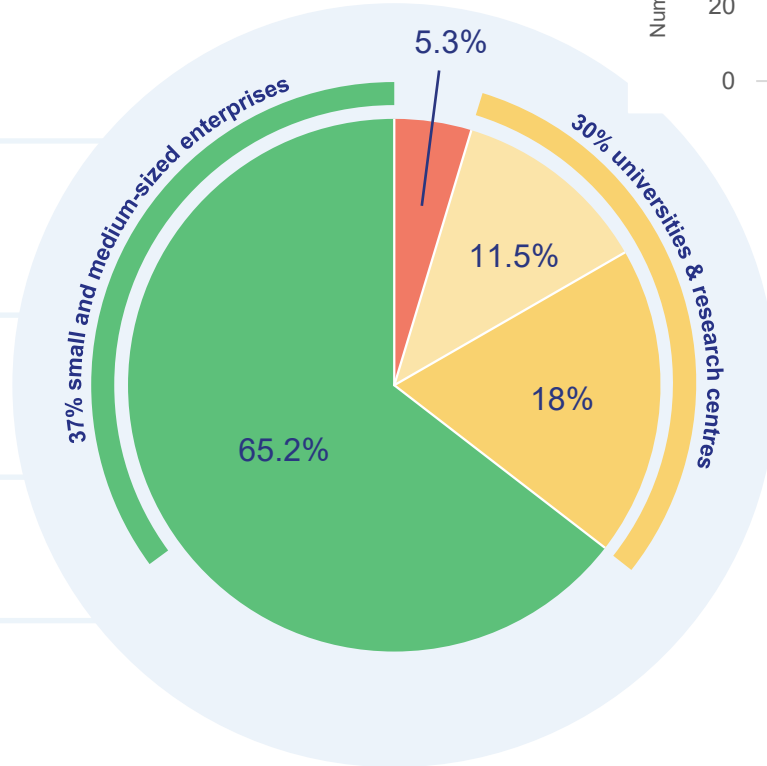
**1,055**  
beneficiaries



**€822 million**  
BBI JU funding



**39**  
countries



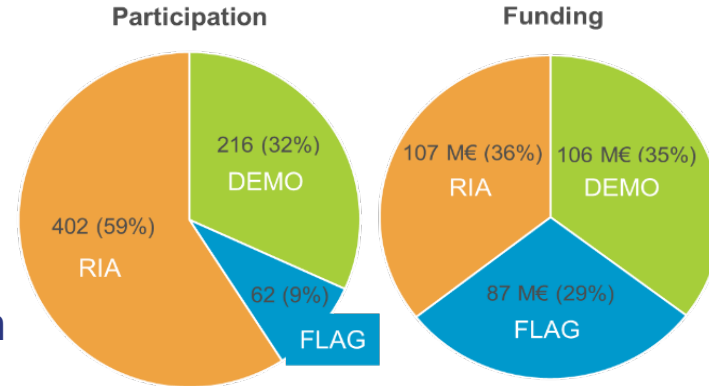
## BBI JU funding per type of beneficiary



Data: CORDA, June 2021

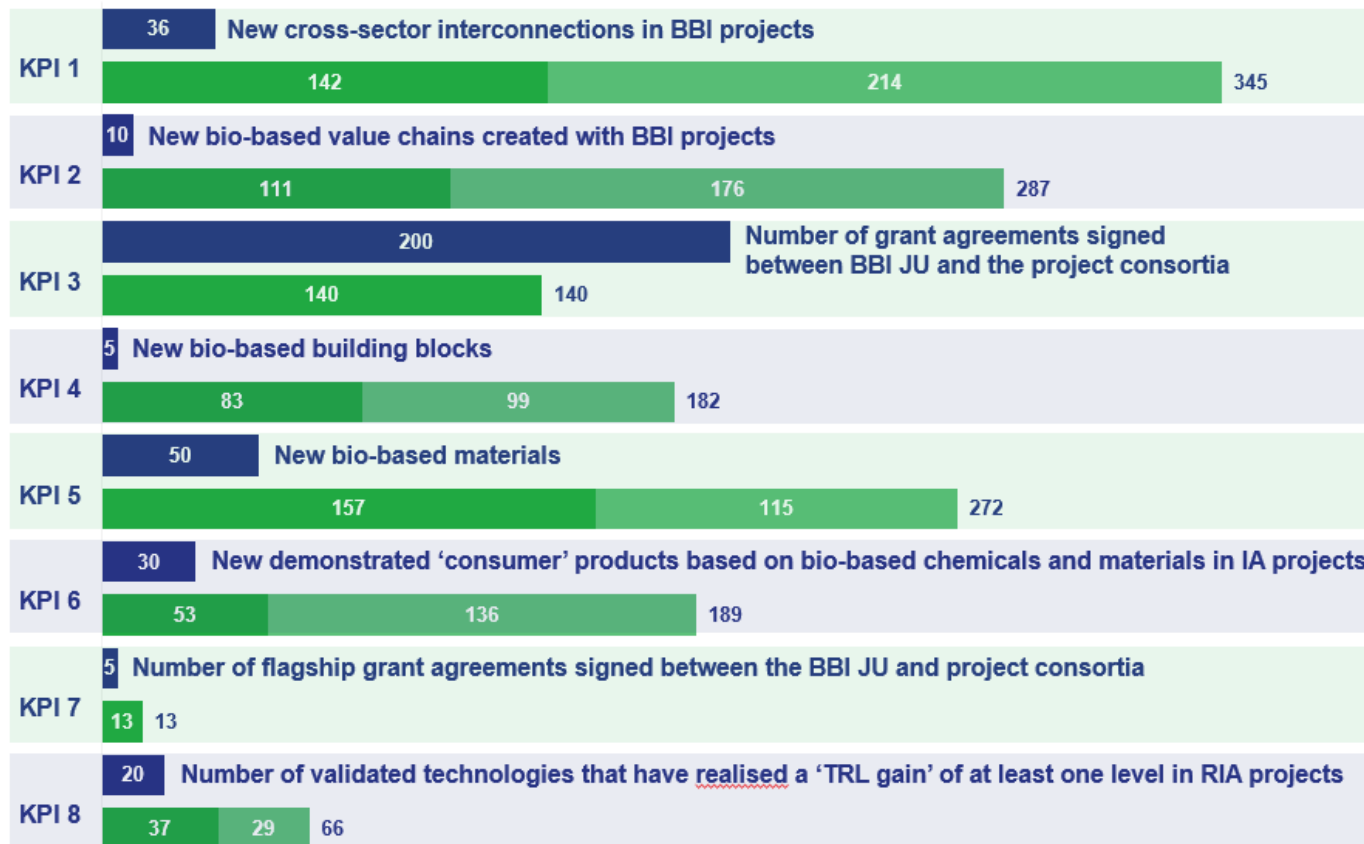
## Strong and evolving SME participation

- SMEs have a prominent and varied role in the bio-based industries, providing specific expertise, innovation and technology development.
- SMEs are in fact enablers for the generation of new products and processes by generating new knowledge, supplying customized technologies and services for testing, data analysis and validation.
- SMEs play a strong role in bio-based innovation: in BBI JU programme they achieve 37% of funding
- 80% of SMEs participate to 1 projects, 13% to 2. SMEs are very specialised in their business area
- Participation was initially focused on DEMO, now also in RIAs and FLAGs (including coordination)

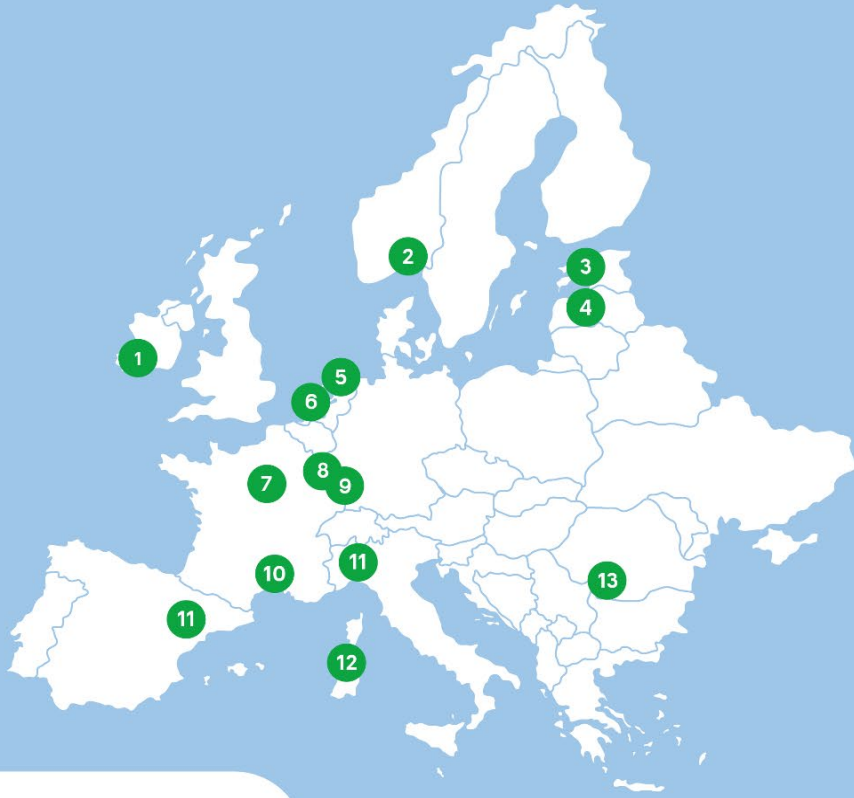


## BBI JU KPIs: 2022 Results vs SIRA targets

■ Target in the SIRA ■ Actual results from finalised projects ■ Expected results from ongoing projects Total



# CBE JU flagship projects



● Flagship biorefinery



1 **Co. Tipperary**  
Ireland



2 **Sarpborg**  
Norway



3 **Imavere**  
Estonia



4 **Riga**  
Latvia



5 **Sas van Gent**  
The Netherlands



6 **Delfzijl**  
The Netherlands



7 **Amiens**  
France



8 **Saint-Avoid**  
France



9 **Saint-Avoid**  
France



10 **Baillargues**  
France



11 **Zaragoza & Sesto San Giovanni**  
Spain & Italy



12 **Porto Torres**  
Italy



13 **Podari**  
Romania



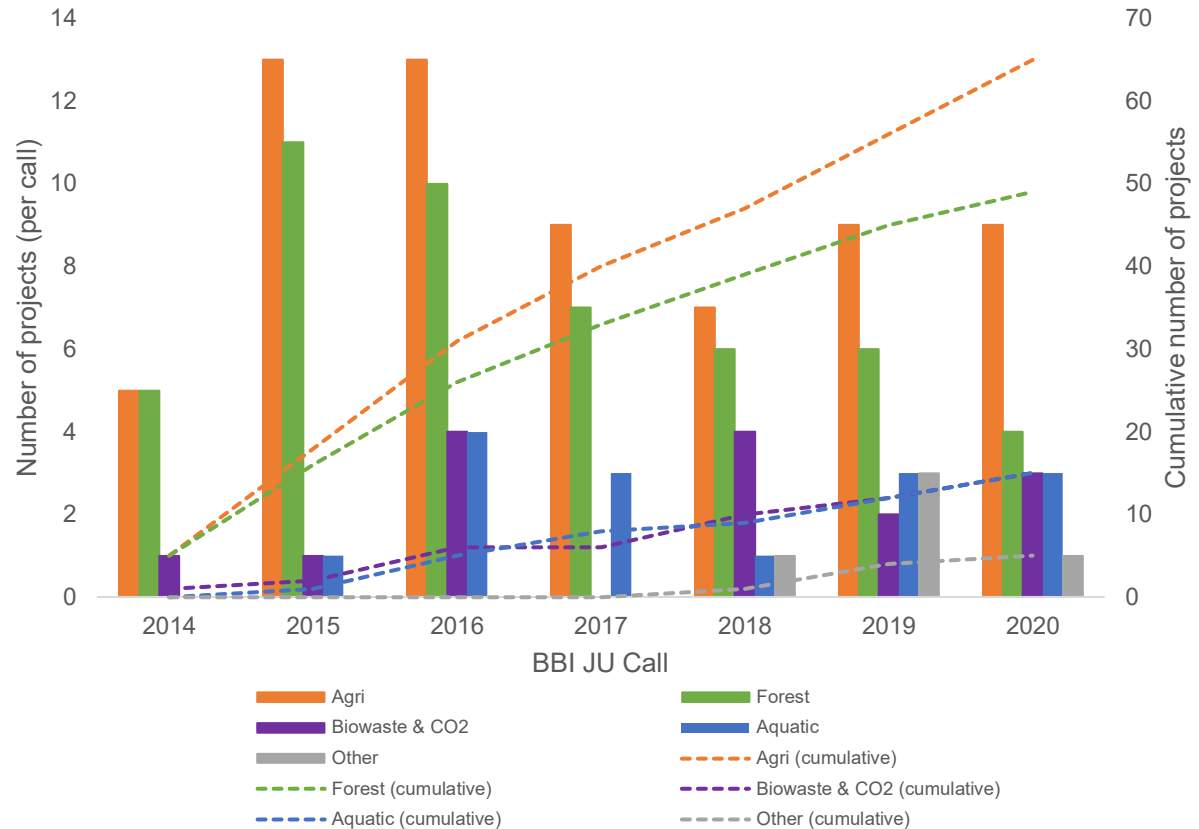
First AWP's focused on agri- and forestry based feedstock

Topics have increasingly introduced new sources, such as from:

- Aquatic origin
- Municipal biowaste
- Wastewater
- Biogenic CO2

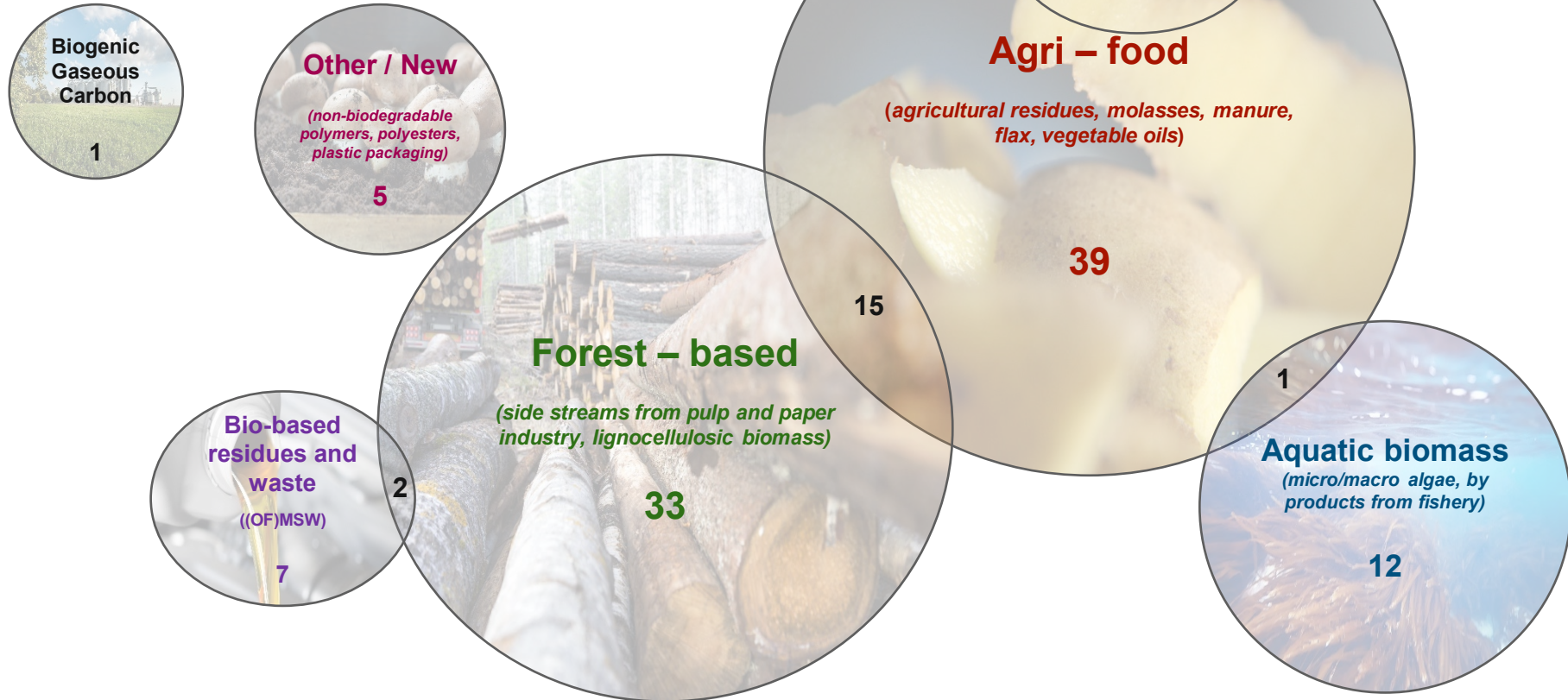
Going Forward: Expand sustainable feedstock sourcing and more efficient use of resources and achieve higher utilisation of unavoidable bio-based residues, waste and side streams from all sectors

## Evolution of feedstock across BBI JU calls 2014-2020





## Feedstock clusters – number of CBE JU projects








## Application Clusters – number of CBE JU projects



## Multi-annual Programming document (MAP) structure

Trajectory 1	Trajectory 2	Trajectory 3	Trajectory 4	Trajectory 5
<b>Sustainable biomass availability, supply, logistics and processability</b>	<b>Circular, clean and climate neutral bio-based process technologies</b>	<b>Transition to safe-and-sustainable-by design bio-based chemicals and materials</b>	<b>Circular-by-design and eco-designed bio-based products and their market uptake</b>	<b>Cross-cutting issues</b>
<ol style="list-style-type: none"> <li>1. Agri-food feedstock</li> <li>2. Forest-based feedstock</li> <li>3. Aquatic biomass</li> <li>4. Industrial and municipal bio-based residues and waste</li> <li>5. Mixed bio-based feedstock (e.g. agro-forestry)</li> <li>6. Horizontal [across multiple classes of feedstock]</li> <li>6. Other</li> </ol>	<ol style="list-style-type: none"> <li>1. Industrial biotech</li> <li>2. Physical, chemical, physicochemical technologies</li> <li>3. Biogenic CCU</li> <li>4. Small scale operations&amp; modularity</li> <li>5. Batch-to-continuous processes</li> <li>6. Feedstock variability tolerant reactors&amp; processes</li> <li>7. Process design&amp; simulation</li> <li>8. Process control &amp; optimization</li> <li>9. Recycling/upcycling processes for bio-based products</li> <li>10. Zero-pollution processes</li> <li>11. Zero waste, process circularity</li> <li>12. Process energy efficiency</li> <li>13. Industrial / industrial-urban symbiosis</li> <li>14. Other</li> </ol>	<ol style="list-style-type: none"> <li>1. Platform chemicals: C2-C4 small molecules</li> <li>2. Platform chemicals: C5&amp; C6 Polymers (for plastics&amp; beyond)</li> <li>3. Composites</li> <li>4. Additives</li> <li>5. Solvents</li> <li>6. Surfactants</li> <li>7. Fibres Food ingredients&amp; nutrients</li> <li>8. Agrochemicals</li> <li>9. Paints, coatings, inks and dyes</li> <li>10. Adhesives</li> <li>11. Chemicals &amp; materials design</li> <li>12. Other</li> </ol>	<ol style="list-style-type: none"> <li>1. Construction &amp; building materials</li> <li>2. Textiles</li> <li>3. Packaging</li> <li>4. Agriculture films&amp; plastics</li> <li>5. Mobility &amp; automotive</li> <li>6. Emerging sectors: e.g. Electronics, renewable energy etc</li> <li>7. Other</li> </ol>	<ol style="list-style-type: none"> <li>1. Environmental sustainability</li> <li>2. Social sustainability</li> <li>3. Digitalisation</li> <li>4. Consumer and market acceptance</li> <li>5. Finance</li> <li>6. Education and skills</li> <li>7. Governance and business models including regional aspects</li> <li>8. Communication, engagement and knowledge exchange</li> <li>9. Other</li> </ol>

## Regulatory Hurdles

-  Survey among CBE JU Flagship and DEMO projects
-  Objective: to identify regulatory hurdles specific to deployment and entry onto the market of bio-based products
-  Creation of a Regulatory Hurdles Dashboard, shared with EC

### ***Main themes include:***

-  Lack of coherent and enabling regulatory framework (including lack of harmonisation, standards, definitions)
-  Regulatory framework not keeping up with R&D developments
-  Lack of incentive for biobased products despite better environmental performance (and in some cases improved properties) compared to fossil-based counterparts

## Access to finance

-  High risk sector, requiring large investments = equity and guarantees problematic
-  Access to finance especially for SMEs to scale up and commercialise projects
-  Complex financial engineering ≠ development of technology
-  Lack of funding synergies at EU, national and regional levels
-  CBE JU only one funding instrument via grants important at early and intermediary stages (TRL 6-7) ≠ Investment gaps for large scale bio-based projects beyond TRL 8
-  Need for complementarity of public and private funding

## Market uptake

-  De-carbonisation vs de-fossilisation
-  Price competition with oil-based products
-  Feedstock sustainable sourcing and supply chain (logistics)
-  Bio-based products insufficient standardisation
-  Insufficient labelling for consumers
-  Facilitate end-of-life options for consumers (recyclable, compostable, bio-degradable)





**Circular  
Bio-based  
Europe**  
Joint Undertaking

Thank you

