



Industry perspective: why Learning Communities matter

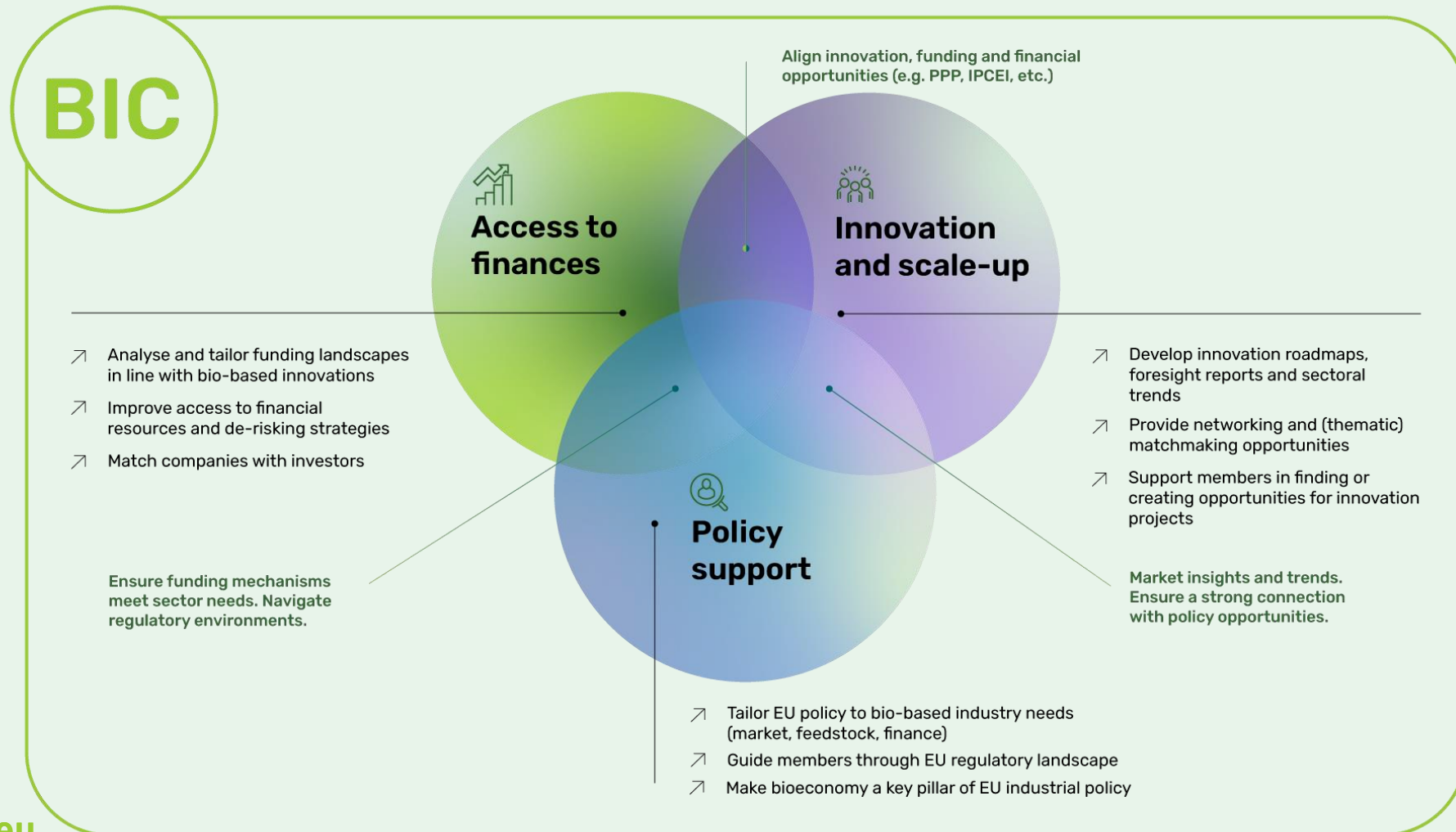
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Key Objectives





A learning community

NOT a training course

IF: Structured forum for quadruple helix

Around a specific challenge for the bioeconomy transition

To agree on a shared vision on stakeholders' collaboration to resolve

Specific action(s) by each stakeholder

THEN: Strategic infrastructure

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A platform for collaborative transformation





A learning community
for the transformation to
the bioeconomy

With the quadruple helix

Industry's challenge for a learning community

BUILDING SKILLS FOR THE BIO- BASED INDUSTRY

A STRATEGIC INFRASTRUCTURE



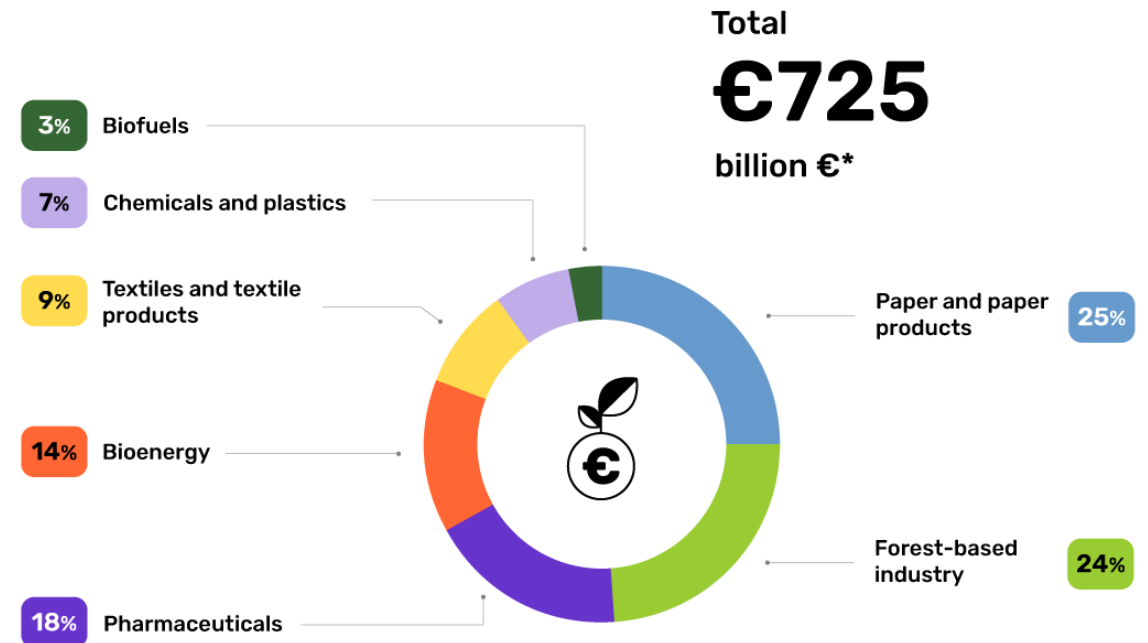


Turnover in the bio-based economy 2021

- Total bioeconomy turnover:
 - € 2.35 trillion (2021)
- Bio-based economy growth:
 - from € 560 billion in 2014 to
 - € 725 billion in 2021

Core part of Europe's green industrial strategy

Turnover in the bio-based economy in the EU-27 (% , 2021)



* excluding agriculture, forestry, fishery, food products, beverages and tobacco products



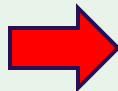
Employment in the bio-based economy, EU-27, 2021

- Total bioeconomy employment:
 - 16 million (2021)
 - 53% in primary sectors
 - 27% in food & beverages
 - 20% in bio-based economy

Education levels only available for primary sectors:

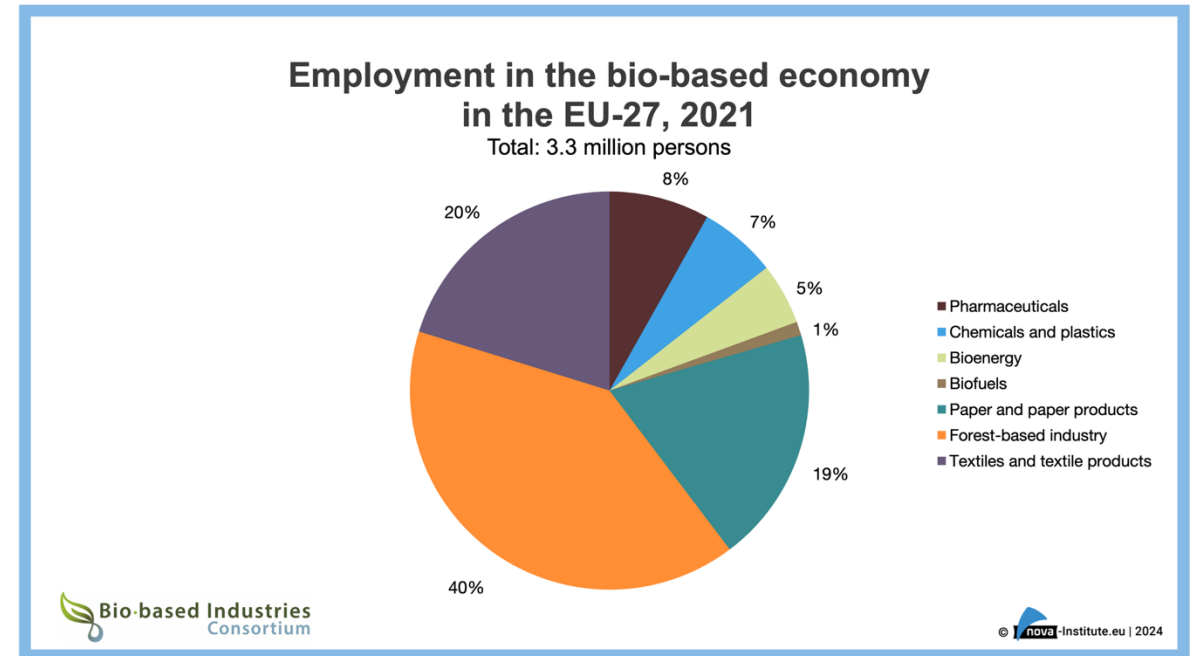
40% primary education (levels 0-2)
46% secondary education (levels 3-4)
14% tertiary education (levels 5-8)

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An uncomfortable truth
In fact: a strategic blind spot

Employment in the industrial sectors (the bio-based economy) (2021, EU-27)



Education levels not collected for these sectors

But many changes and movements taking place!

The transformation challenge

New technologies need new skills

- ❖ New feedstocks
- ❖ New industrial processes
- ❖ Digitalisation and automation
- ❖ Circular business models
- ❖ Rising sustainability expectations

But current workforce education profile is still as it was in traditional separate industry sectors.



Build skills for the bio-based industry: major issues

💡 **Interdisciplinary needs versus disciplinary structures**

Industry needs talent spanning agriculture, biotech, ICT, and policy, but education remains siloed.

💡 **Weak alignment between industry and education**

Limited dialogue and fragmented representation reduce curriculum relevance and co-created solutions.

🚀 **Unclear career pathways and talent attraction**

Lack of clear competencies, weak branding, and few internships hinder talent attraction and retention.

📖 **Inadequate lifelong learning opportunities**

Rapid change demands ongoing upskilling, but structured reskilling pathways are scarce.

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Why industry joins learning communities

Avoid companies tackling skills challenges in isolation



Talent

A stronger, better aligned talent pipeline



Efficiency

More effective upskilling and reskilling pathways



Early access

Early access to emerging knowledge and research



Lower risk

Reduced training and recruitment risks



Partnerships

Trusted partnerships that support scale-up and innovation



What industry needs from learning communities

What makes these communities valuable to industry?



Real challenges

Clear connection to real industrial challenges



Alignment

Curricula & training aligned with emerging job profiles



Support

Targeted upskilling and reskilling pathways for workforce



Share

A pre-competitive environment for sharing knowledge



Better data

Improved skills intelligence and data



What industry must contribute

To make the learning community credible and useful

'Our side of the bargain'



Skills foresight for education

We need to share emerging job profiles, skills needs, and workforce trends to help align education with workforce needs.



Real industrial cases

Scale-up issues, safety considerations, feedstock challenges, circularity trade-offs, quality control challenges



People and time and openness

We must dedicate people, different experts as needed, including engineers, technicians, plant managers, data experts, sustainability experts.

We must also talk about lessons learnt failures to improve success to cross the valleys of death

How to build successful learning communities

To function as strategic infrastructure for skills development

1. Define a concrete challenge
2. Involve industry early
3. Have a neutral broker
4. Create value for all partners
5. Combine quick wins with long-term plans

WHO: nominate specific persons

HOW: local, regional, national, international?

SO WHAT: how act on the outcomes of learning communities?





The role of universities (industry perspective)

- Integrate disciplines
- Provide neutral collaboration spaces
- Translate industrial challenges into teaching and research
- Co-design curricula, microcredentials, and lifelong learning pathways
- Support skills monitoring
- Connect students and researchers with industry

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Making learning communities more effective





People drive transformation






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