

INNOVATING FOR A SUSTAINABLE FUTURE - FIBENOL'S BOLD VISION: Fiber Beyond Oil

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Our demo plant in Estonia, April 2023



Fibinol demo plant commissioning...

**Because launching rockets
seemed too easy**

Fibenol today

+ Annual production capacity:

10 kton C5 sugars

10 kton C6 sugars

6.5 kton Lignova

Specialty cellulose on ton scale

+ Global partnerships **>400**

+ Supported by EU: **18 m EUR**

+ Total investment: **>65 m EUR**



2016-2017
SUNBURST™
technology

2018
SWEETWOODS project

2020
PILOT LINE

2023
COMMISSIONING &
RAMP UP

2027/28
Industrial plant

CELLULOSIC SUGARS

- + 2G sugars: non-food competing
- + Rich in xylose or glucose
- + Highly fermentable
- + Low CO₂ footprint and land-use



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LIGNIN

- + Two lignin grades:
 - + LIGNOVA™ Crude
 - + LIGNOVA™ Pure
- + Sulphur-free
- + Near-native structure



MICROCRYSTALLINE CELLULOSE

- + Three unique MCC grades:
 - + Crude MCC
 - + Blonde MCC
 - + White MCC
- + Various lignin and hemicellulose content
- + CNC/CNF type behaviour





Biosurfactants



Concrete



Furniture



Bioplastics



Paper and packaging



Bitumen



Collaborating to innovate the
road construction industry

Collaborating to innovate the (bio)plastics industry

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Carbon Footprint of **LIGNOVA™**



*IPCC, mass allocation

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For bio-based products carbon footprint is the most important sales argument!

We need unified tools and rules for CO₂ footprint calculations!

Why we agree to play by the rules designed for fossil-based world?



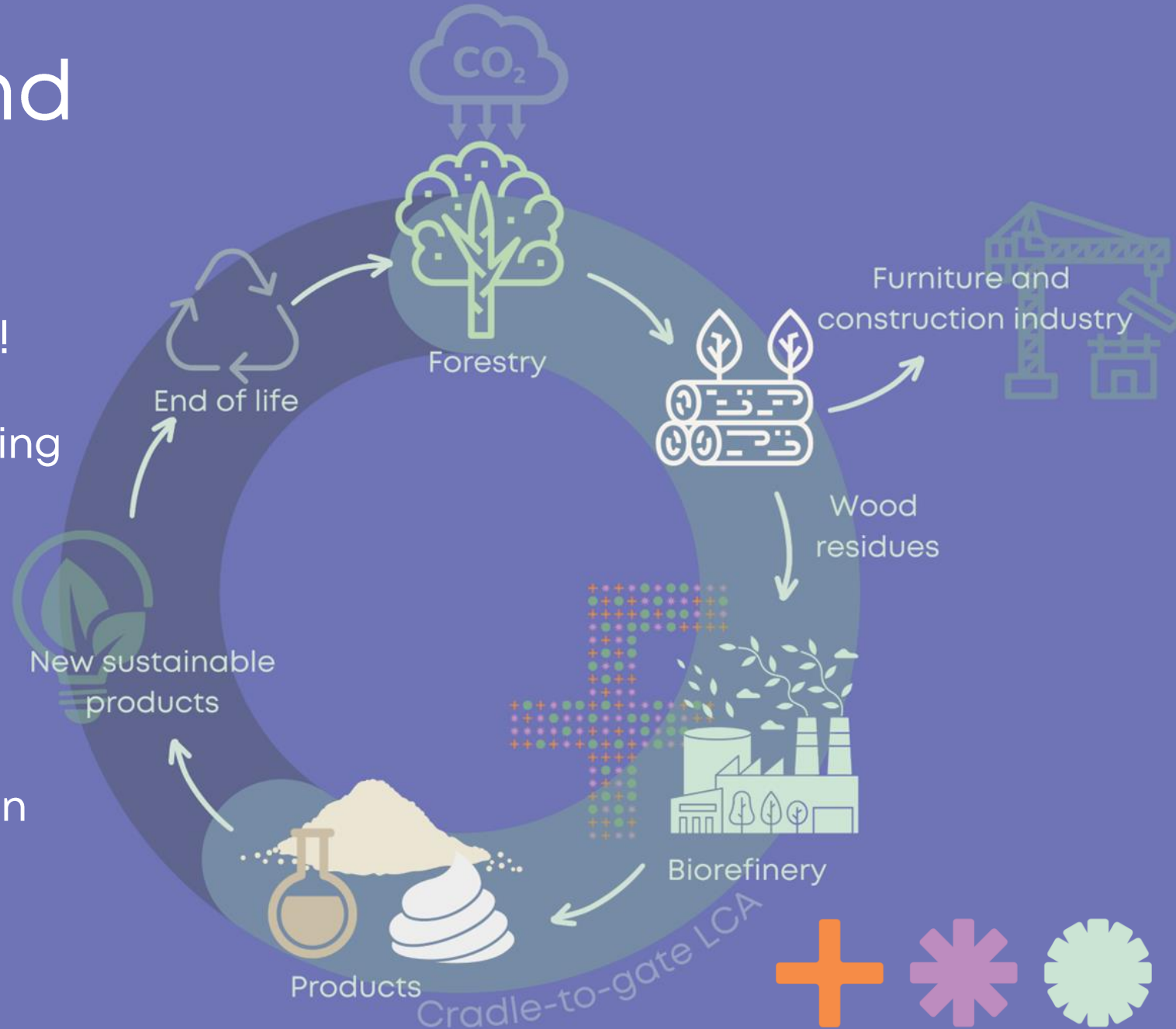
Science based and data driven LCA

High quality primary data is key!

- + We need to move on from using database averages
- + Collaboration

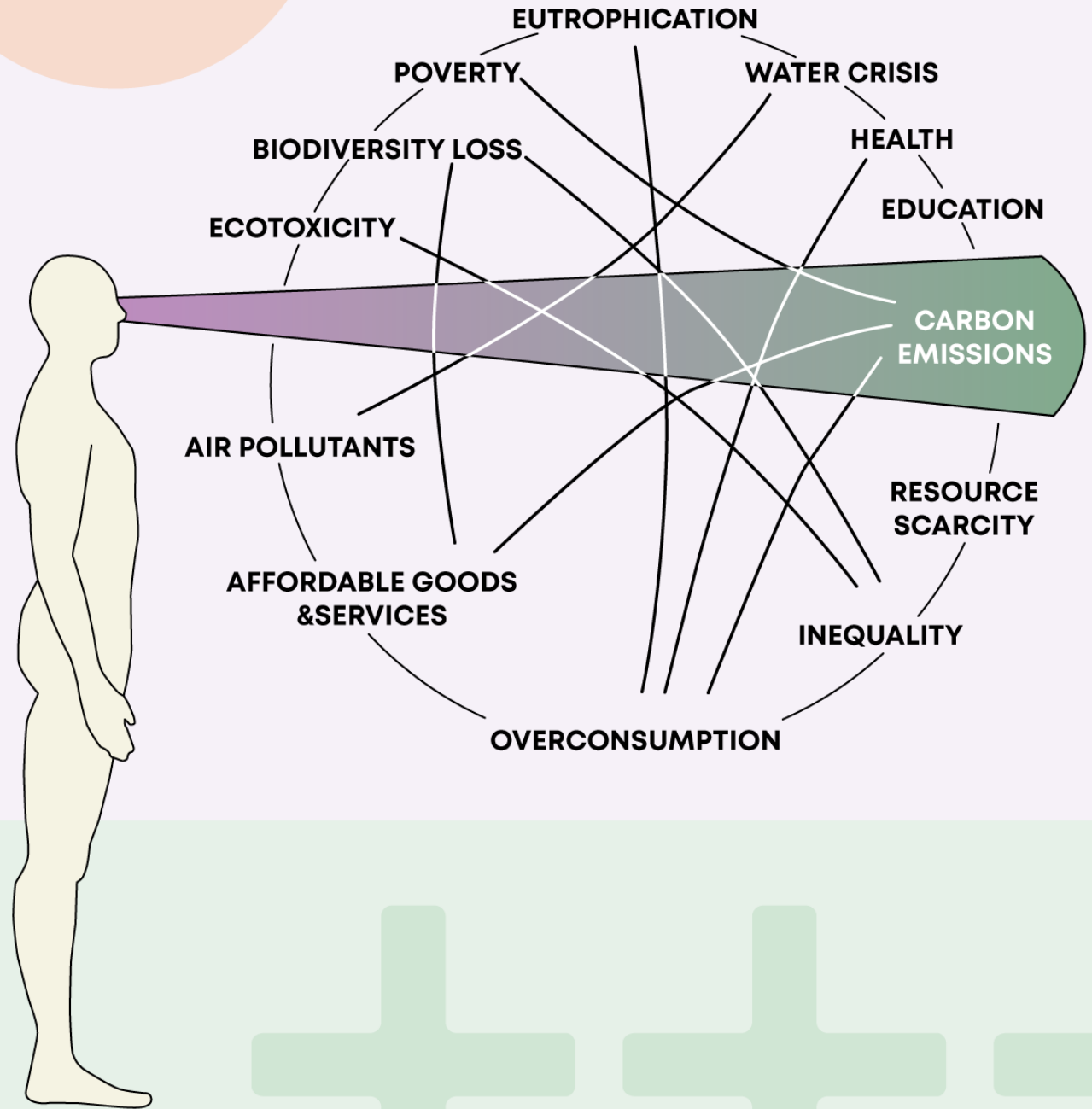
Transparency!

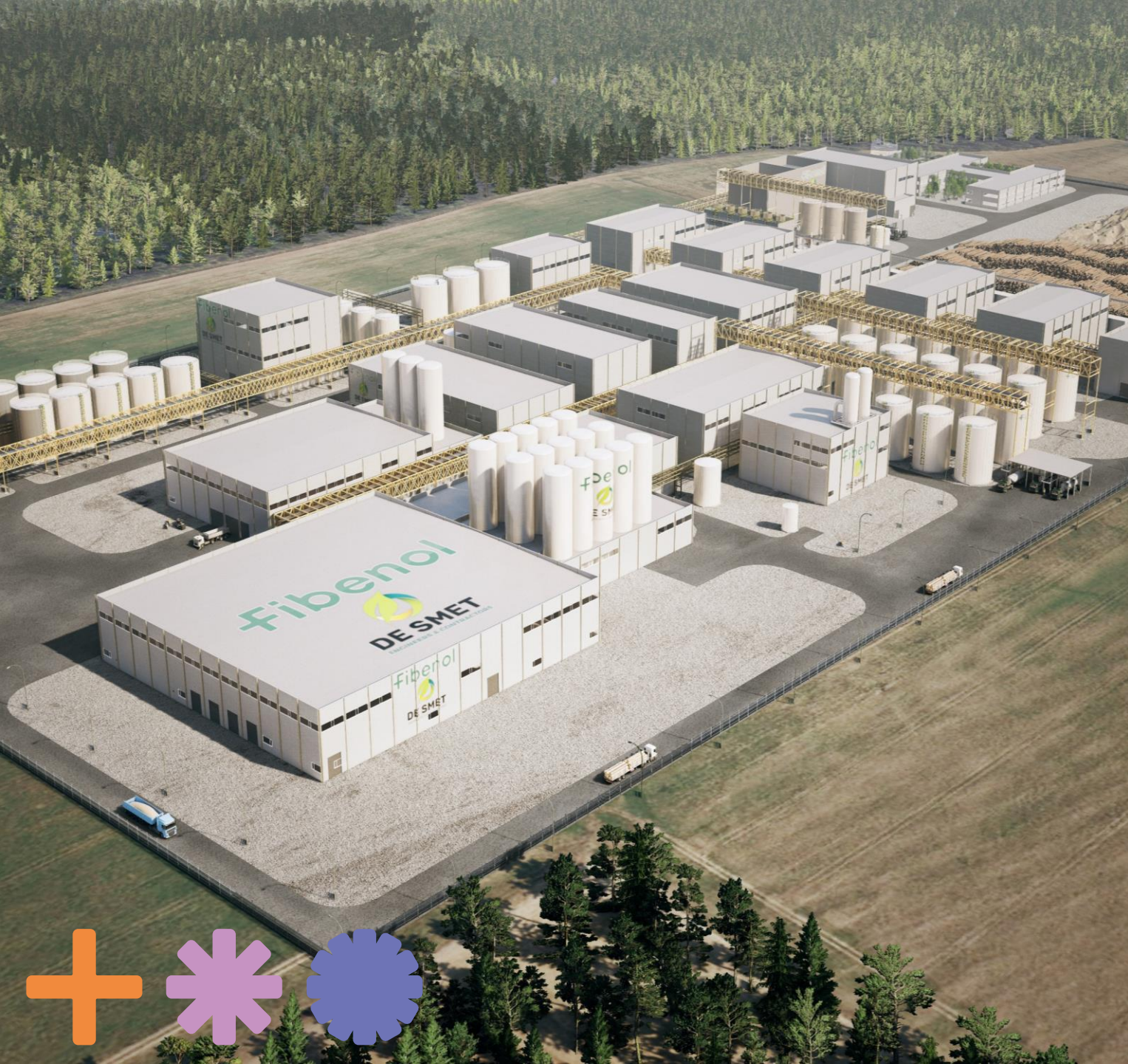
- + NO to selective use of data
- + NO to questionable allocation methods



Carbon tunnel vision

We cannot limit ourselves with talking about CO₂ only!



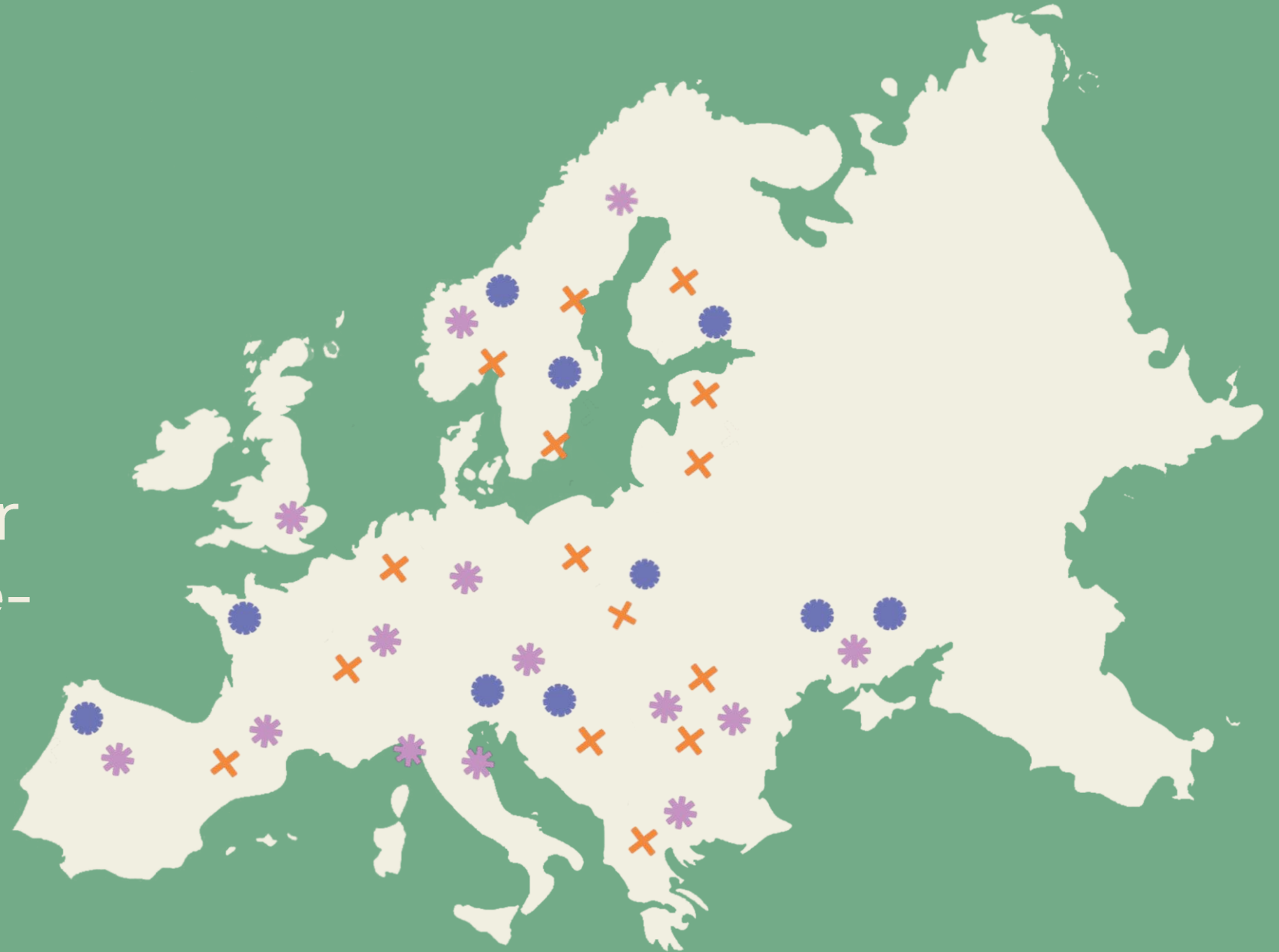


Beyond 2028

From Fibenol to the world: pioneering biomaterials, innovative technology, and expert know-how.

OUR AMBITION

towards circular
bio-based value-
chains



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Are YOU ready to join the
revolution with us?

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