

# Biobased industry for a more circular and regenerative EU Bioeconomy

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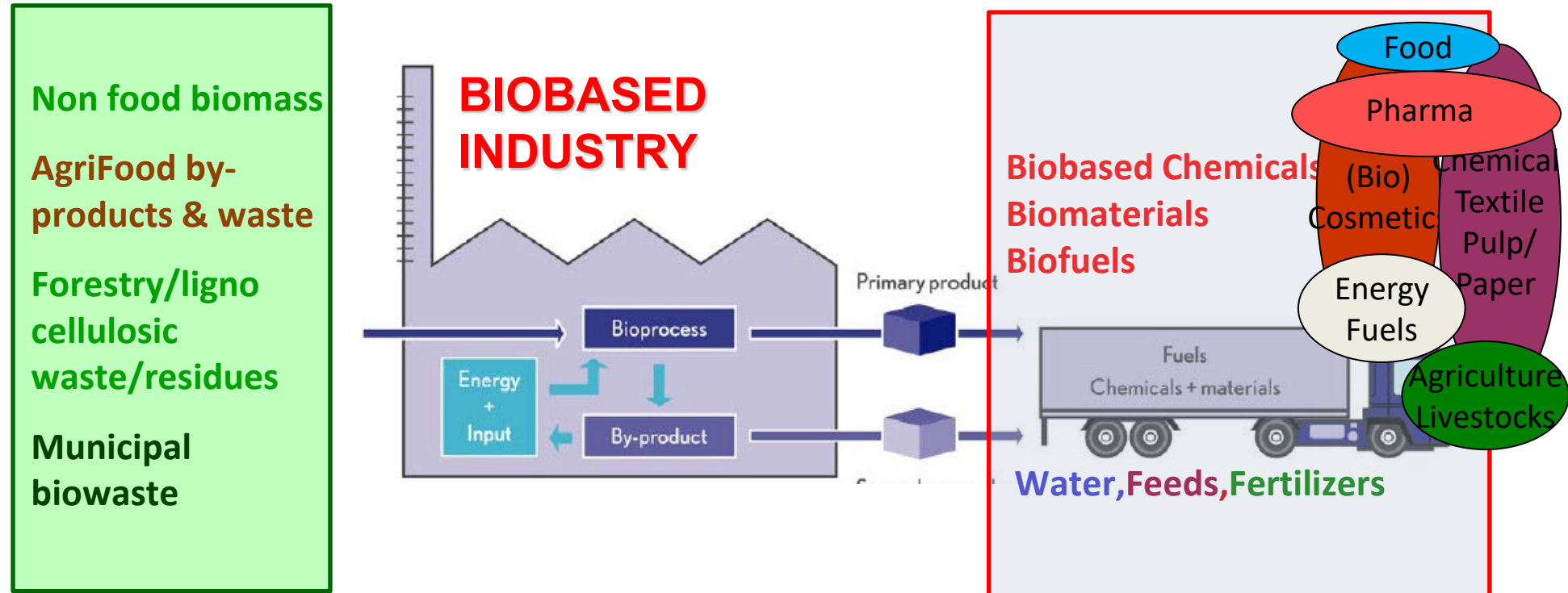
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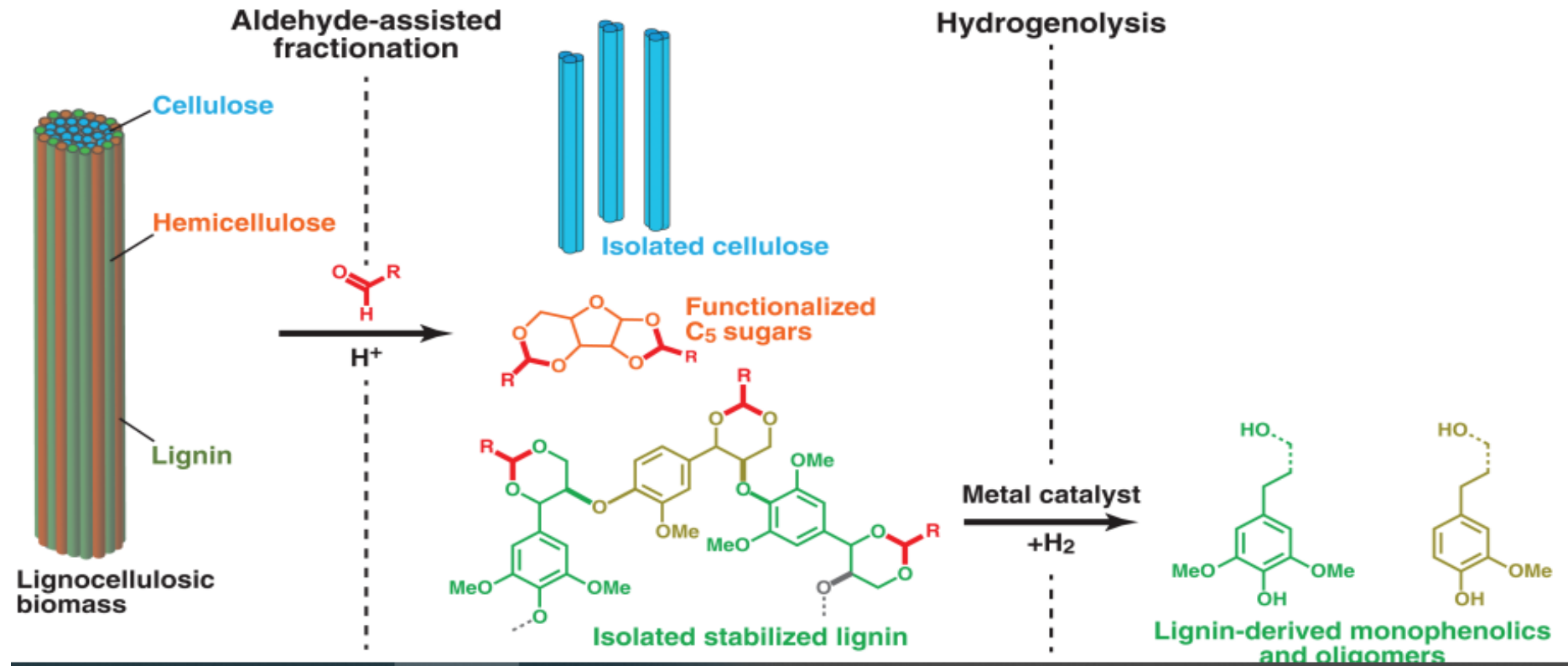


## BioBased Industry & Biorefinery

Towards a bio-based society: an integrated, multipurpose biorefinery



## Biobased industry: integrated multipurpose biorefinery (a)



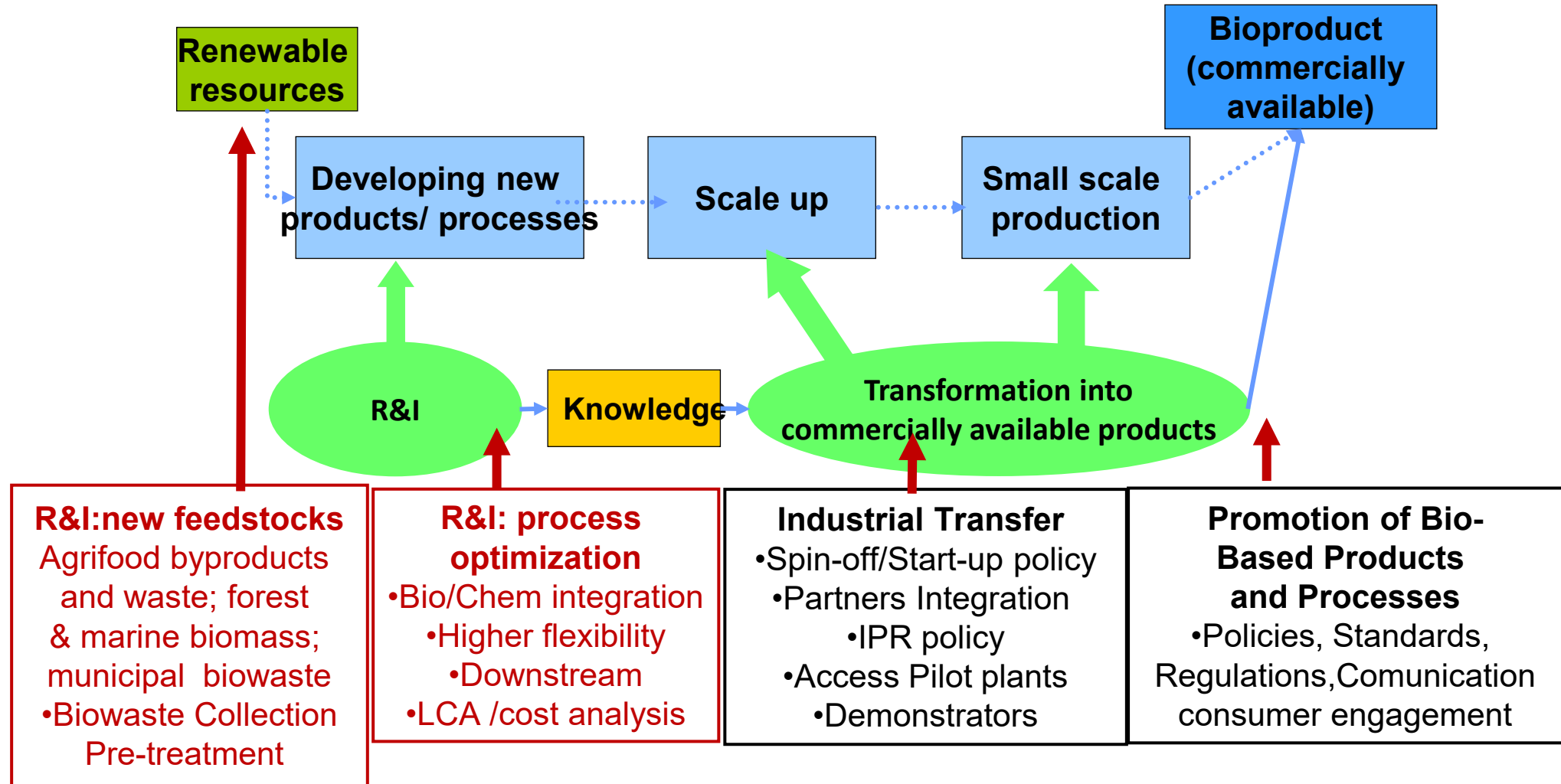
After M. M. Abu-Oma et al. Guidelines for performing lignin-first biorefining *Energy Environ. Sci.*, 2021, 14, 262

## Biobased industry: integrated multipurpose biorefinery (b)

Original platform molecules <sup>[9]</sup>	Revisited platform molecules <sup>[7]</sup>
Succinic, fumaric and malic acids	Ethanol
2,5-Furandicarboxylic acid	Sugars (sorbitol, xylitol)
3-Hydroxypropanoic acid	Furans (furfural, HMF)
Aspartic acid	Glycerol and derivatives and 2,5-furandicarboxylic acid)
Glucaric acid	3-Hydroxypropanoic acid
Glutamic acid	Bio-hydrocarbons
Itaconic acid	Organic acids (lactic acid, succinic acid and levulinic acid)
Levulinic acid	
3-Hydroxybutyrolactone	
Glycerol	
Sugars (sorbitol, xylitol/ arabinitol)	

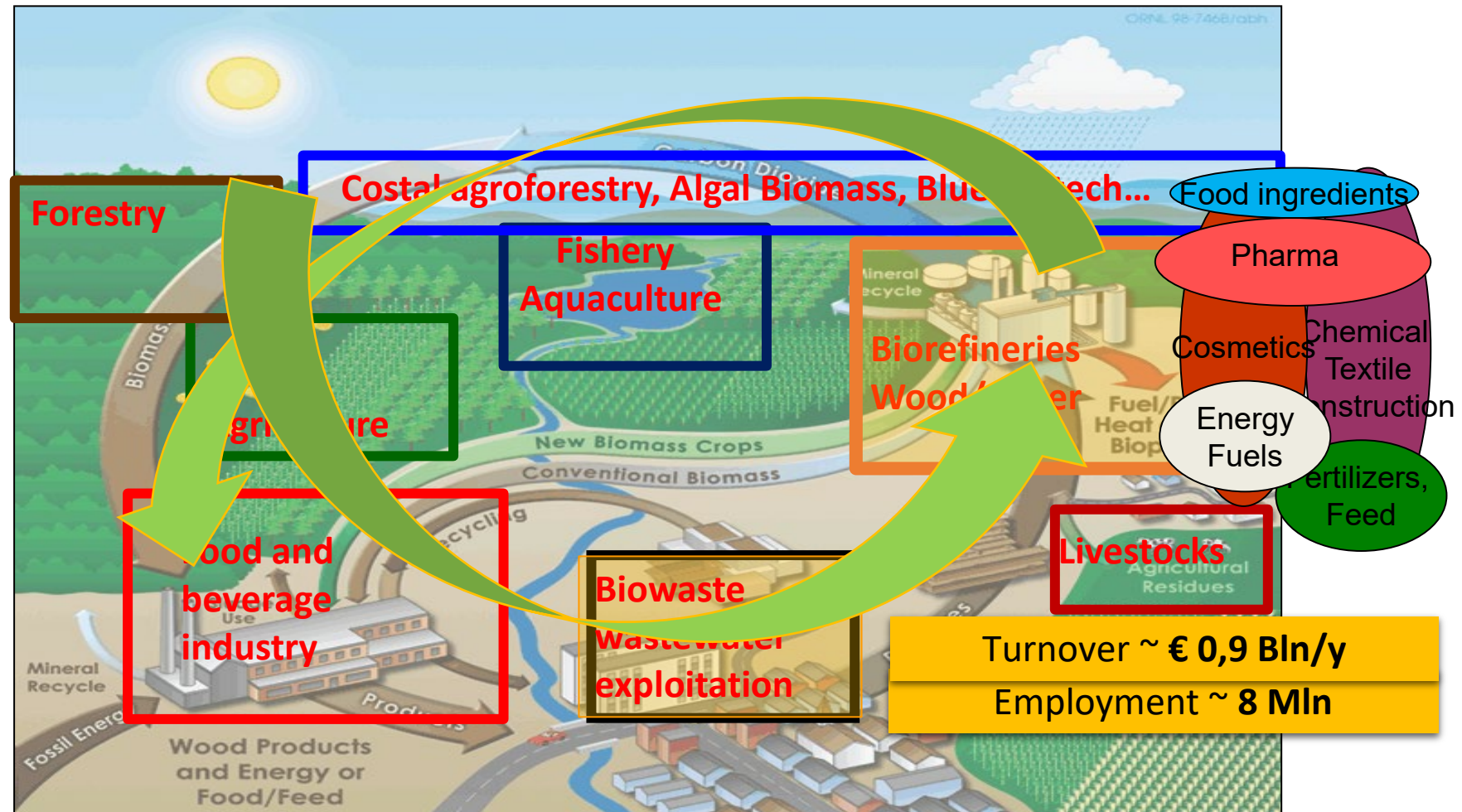
After G. Gómez Millán et al. Recent Advances in the Catalytic Production of Platform Chemicals from Holocellulosic Biomass. ChemCatChem 2019, 11, 2022

## The Biobased industry: needs and opportunities (a)





# The Biobased industry, needs and opportunities (b)



About 2,560 Bln €/y and 18,5 Mln of jobs (2022\*)

Environmental and social benefits, for sustainable/regenerative/inclusive growth

# The Biobased industry, a key priority of EU Bioeconomy strategy



**The EU Bioeconomy Strategy (2012)**

<https://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy&lib=strategy>



**Updated EU Bioeconomy Strategy (2018)**

## **Rapidly deploying bioeconomies across Europe**

- set up an EU Bioeconomy Policy Support Facility for EU countries to develop national/regional agendas;
- launch pilot actions for the development of bioeconomies in rural, coastal and urban areas, interconnecting the sectors.

**Scaling up and strengthening the bio-based sectors** via a €100 million **Circular Bioeconomy** Thematic Investment Platform.

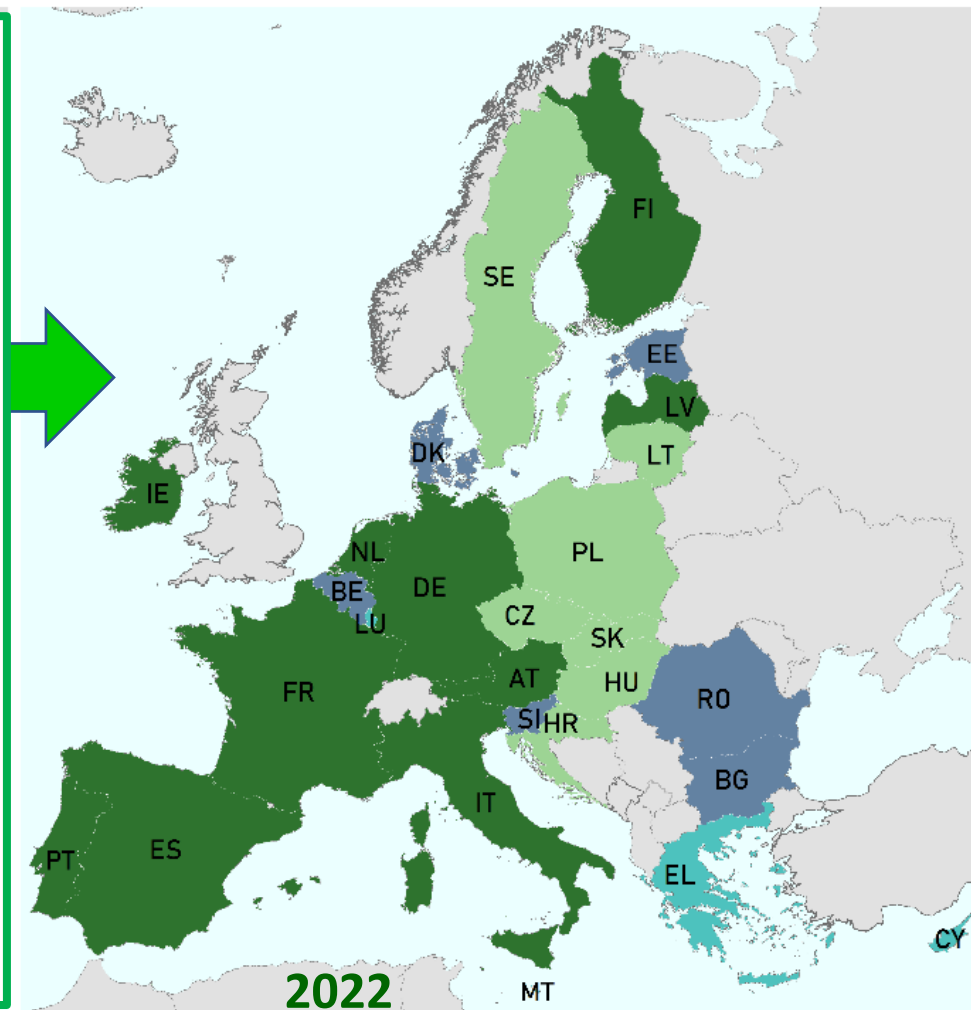
Protecting the ecosystem and understanding the ecological limitations of the bioeconomy

# The Biobased industry, a key priority of EU national Bioeconomy strategies

## Status of the national bioeconomy policies in the EU-27

- 10 Member states with dedicated bioeconomy strategies at national level (AT, DE, ES, FI, FR, IE, IT, LV, NL, PT)
- 6 MS in the process of developing their respective dedicated national strategies (CZ, HR, HU, LT, PL, SK)
- 7 MS are involved in other macro-regional (BG, DK, EE, RO, SI, SE) or sub-national (BE) policy initiatives dedicated to the bioeconomy.
- 4 MS have bioeconomy related strategies (CY, EL, LU, MT)

- Dedicated bioeconomy strategy at national level
- Dedicated bioeconomy strategy at national level under development
- Other policy initiatives dedicated to the bioeconomy
- Other related strategies at national level

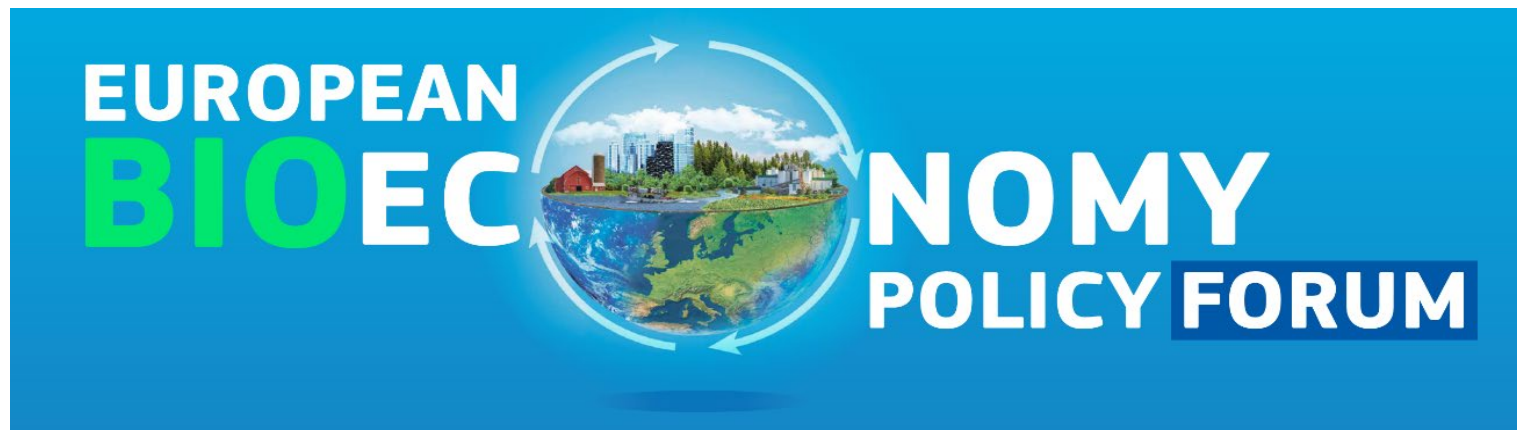


Status before the adoption of the European Bioeconomy Strategy (left side) and in February 2022 (right side)

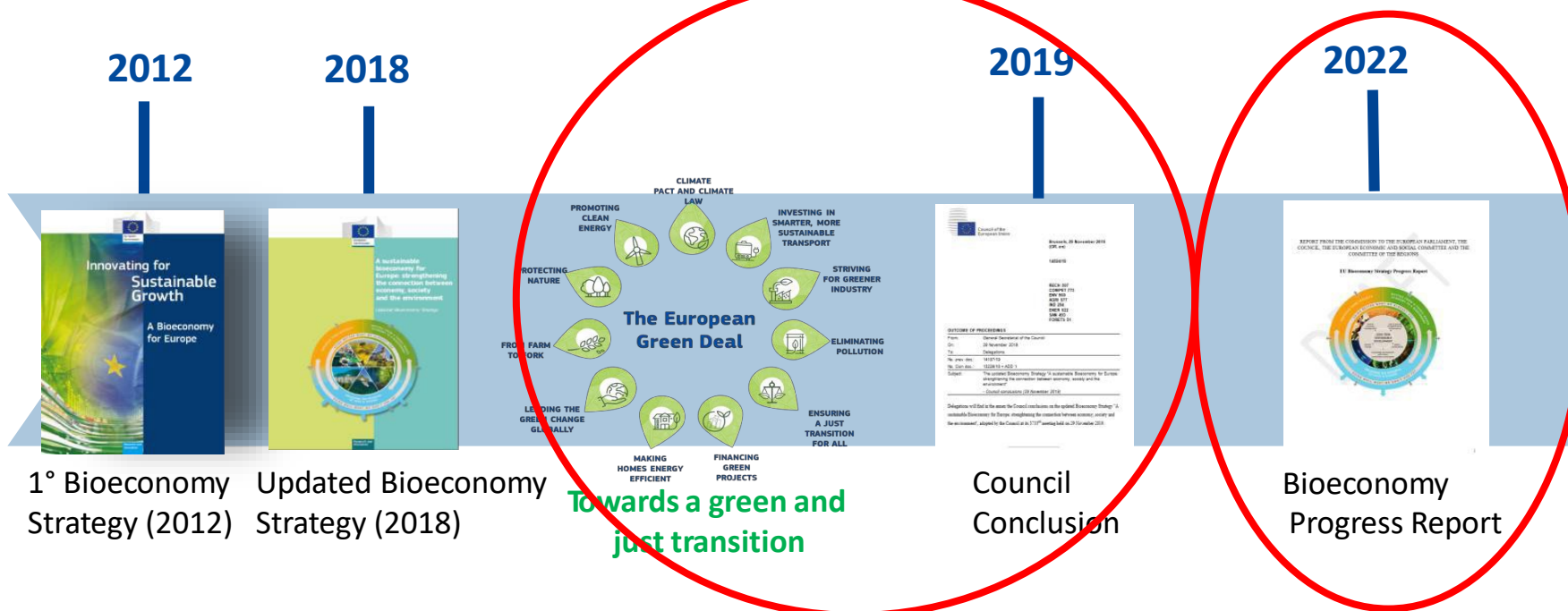
Source: European Commission's Knowledge Centre for Bioeconomy  
Administrative Boundaries: © EuroGeographics © UN-FAO © Turkstat



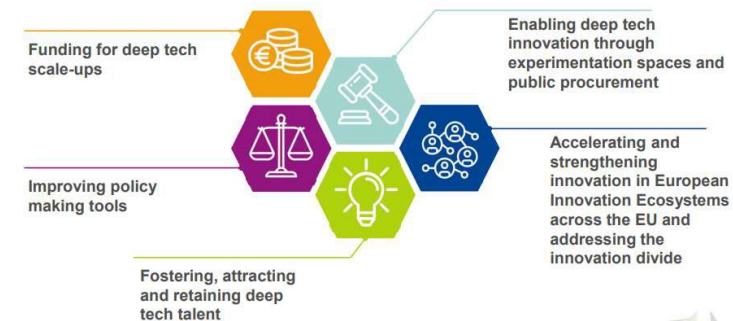
# Biobased industry, a priority of future EU Bioeconomy



All MSs, EC DGs, EP, CoR, EESC (high and expert-level) 2020



## New European Innovation Agenda: five flagships



*Thank You!*



**Circular  
Bio-based  
Europe**  
Joint Undertaking

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