

The bioeconomy in the EU - A driver of the European Green Deal

European Bioeconomy Scientific Forum 2023
Session 1 13:00 – 14:45 :

*Raising awareness for the transformation towards a
sustainable bioeconomy*

Peter Wehrheim, Head of Unit for Bioeconomy and Food Systems
Directorate General for Research & Innovation, European Commission



“The European Green Deal is Europe’s Man on the Moon Moment”

December 2020

“The fossil fuel economy has reached its limits!” *July 2021*

It is a new growth strategy that aims to transform the EU into a **fair and prosperous society**, with a modern, **resource-efficient and competitive** economy, where there are **no net emissions of greenhouse gases in 2050** and where **economic growth is decoupled from resource use.** »

#EUGreenDeal



“ *With its potential to connect and implement transformative policies holistically, the bioeconomy will contribute to all dimensions and objectives of the European Green Deal. Research and innovation will enable Europe to lead the green and digital transition.* ”

Mariya Gabriel, EU Commissioner for Innovation, Research, Culture, Education and Youth

Research and
Innovation

Bioeconomy - a blueprint for green growth :

- Holistically addresses the economic, social and environmental aspects
- Contributes to a climate-neutral future
- Promotes resource efficiency and circularity
- Reduces dependence on non-renewable resources
- Protects nature and safeguards biodiversity and ecosystems
- Provides opportunities for fair and just transition
- Green business opportunities for SMEs

See Factsheet on **How the bioeconomy contributes to the Green Deal** (<https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/66722c8d-2e03-11eb-b27b-01aa75ed71a1>)

The EU's understanding of *the Bioeconomy*

All sectors and associated services and investments that produce, use, process, distribute or consume biological resources (animals, plants, micro-organisms, including organic waste), including nature-based solutions and ecosystem services.

- Primary production systems - agriculture, forestry, aquaculture / fisheries – incl. waste/side streams
- Food, feed, fibre, bio-based industry, fuels and bioenergy
- services on land and sea



Examples of innovative bioeconomy products

- [Woodio](#): combination of wood (80%) and resin based adhesives
- **Up-cycling** of woodchips to make long-lived wood products
- Produced from wood chips usually used for pulp, energy
- **Lower carbon footprint** on the lifecycle than for similar traditional ceramic bathroom fixtures
- Received acceleration funding (7,5 million euros) in 2021 from the [European Innovation Council](#)



Example of bioeconomy generating nature positive solutions



Horizon 2020/ Demonstration Project: “[GRowing Advanced industrial Crops on marginal lands for biorEfineries](#)” ([GRACE – BBI](#); University of Hohenheim)

Goals:

- To avoid competition with food and feed crops, **miscanthus and hemp** were cultivated on abandoned or less favourable area for food production
- To produce sustainable products with a strong market potential
- To guarantee a reliable and affordable supply of sustainably produced biomass
- To better link biomass producers with the processing industry



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Achievements:

- Development of marketable crops while incentivising industry to invest in bio-alternative raw materials;
- New business models for farmers and rural areas and sustainable value chains and bio-based products
- Higher-value applications – including platform chemicals, building materials and natural fibre-reinforced composites
- **Environmental benefits:** Soil protection; Control of nitrate leaching; Maintenance of biodiversity habitats; Soil carbon sequestration; Minimise dependency on unsustainable feedstock sources



EU BIOECONOMY

European Commission's Knowledge Centre for Bioeconomy

EMPLOYMENT
(MILLION JOBS)
17.4

VALUE ADDED
(BILLION EUR)
657

	EMPLOYMENT (MILLION JOBS)	VALUE ADDED (BILLION EUR)	VALUE ADDED (SHARE TOT)
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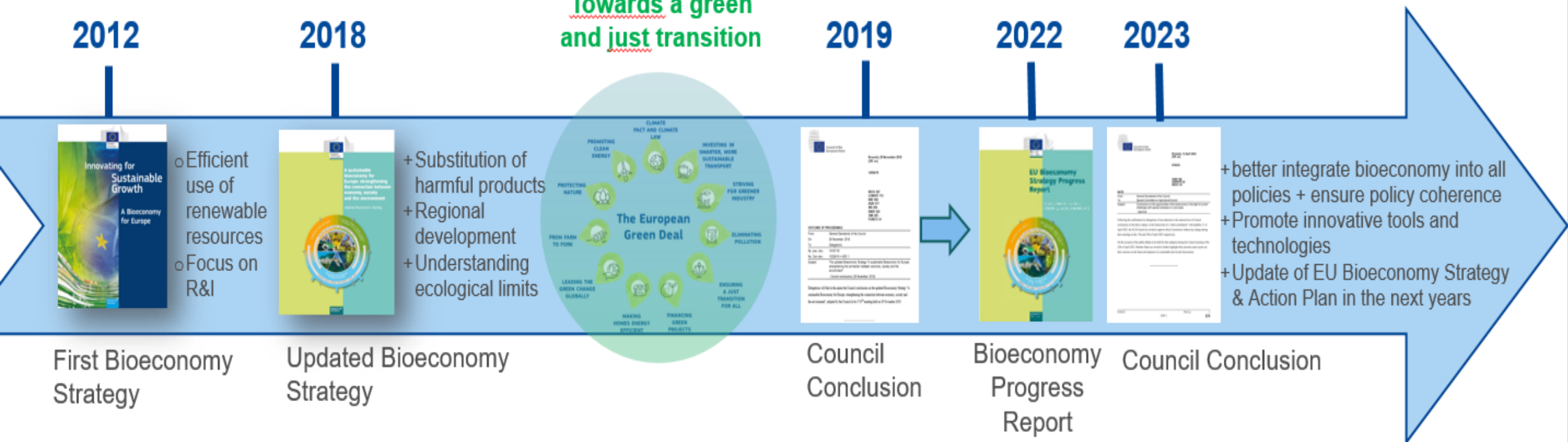
	AGRICULTURE	8.8	193	29%
	FORESTRY	0.5	25	4%



A key sector of the EU's economy

- Based on this definition the **bioeconomy is an important sector in the EU: 8.3%** of the EU's workforce and **4.7%** of GDP; agriculture and the manufacture of food, beverage **65%** of the total value added
- The **bioeconomy's share in GDP is much higher** (10.4% for EU-28 in 2020), when including **bioeconomy services** (Ronzon WUR 2023)
- **High innovation potential** for sustainable / new biobased products through **biomanufacturing** (e.g. textiles, packaging, cosmetics, building material and services e.g. carbon farming)
- **High job creation potential**, in rural and coastal areas, through the growing participation of primary producers and deployment of bio-based solutions

The EU Bioeconomy Strategy



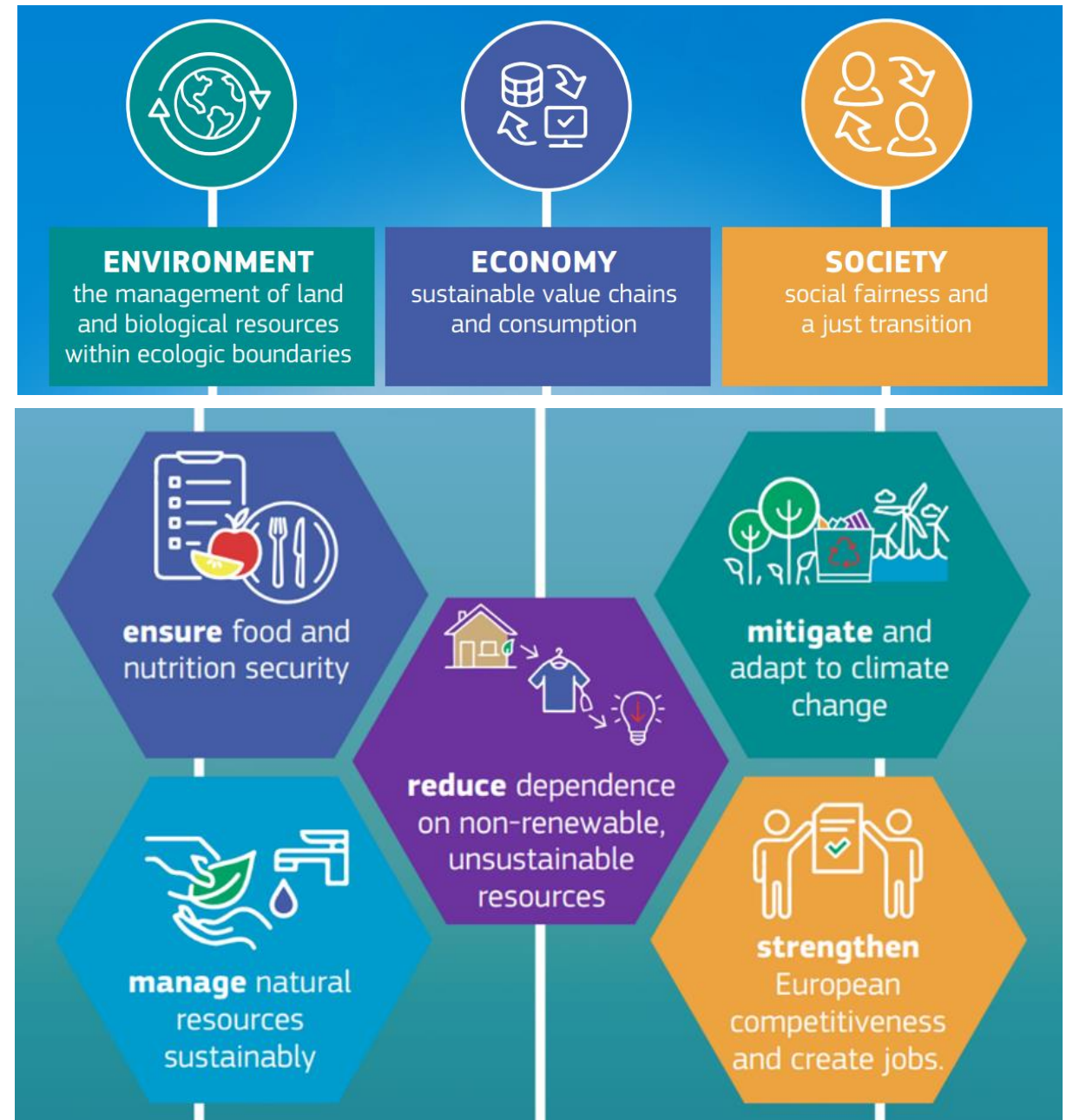
Council Conclusions

On the opportunities of the bioeconomy in the light of current challenges with special emphasis on rural areas

AgriFish Council 25/4/2023

EU Bioeconomy policy...

- addressing all three dimensions of sustainability
- addressing five different objectives, policies across sectors, strategic view on trade-offs (e.g. scarce biomass), co-benefits (e.g. for biodiversity)
- Holistic perspective, identify win-win-win solutions



The updated EU Bioeconomy Strategy (2018)

- **Key principles:**
 - Sustainability, circularity, cross-sectoral/holistic
- **Three priorities:**
 - Strengthening the **biobased sectors**
 - **Deploy local bioeconomies**
 - Understand the **ecological boundaries**/ protect the biosphere
- A set of **14 well-defined actions**

1

STRENGTHEN AND SCALE-UP THE BIO-BASED SECTORS, UNLOCK INVESTMENTS AND MARKETS

-  Mobilise stakeholders in development and deployment of sustainable bio-based solutions
-  Launch the EUR 100 million Circular Bioeconomy Thematic Investment Platform
-  Analyse enablers and bottlenecks for the deployment of bio-based innovations
-  Promote and develop standards, labels and market uptake of bio-based products
-  Facilitate the development of new sustainable biorefineries
-  Develop new biodegradable products, including bio-based plastic substitutes


2

DEPLOY LOCAL BIOECONOMIES RAPIDLY ACROSS EUROPE

-  Launch a Strategic Deployment Agenda for sustainable food and farming systems, forestry and bio-based products
-  Launch pilot actions for the development of bioeconomies in rural, coastal and urban areas
-  Support regions and Member States to develop Bioeconomy Strategies
-  Promote education, training and skills across the bioeconomy

3

UNDERSTAND THE ECOLOGICAL BOUNDARIES OF THE BIOECONOMY

-  Enhance knowledge on biodiversity and ecosystems
-  Monitor progress towards a sustainable bioeconomy
-  Promote good practices to operate the bioeconomy within safe ecological limits
-  Enhance the benefits of biodiversity in primary production

Priority 1: Strengthening the **biobased sectors e.g.**

Support for biobased innovation in the EU:

Circular Biobased Europe (CBE)



- **Horizon Europe** (the EU's framework program for Research and Innovation) supports the **Circular Biobased Europe CBE** (public-private)
- CBE is a **€2 billion** partnership between the EU and the **Bio-based Industries Consortium (BIC)**: funding projects that advance competitive **circular bio-based industries in Europe** (e.g. [Carlsberg makes bio-based and fully recyclable bottles ..](#))

General objectives of CBE:

- Accelerate the **innovation** process and development of bio-based innovative solutions
- Ensure a high level of **environmental performance** of bio-based industrial systems
- Accelerate **market deployment** of the existing mature bio-based innovative solutions

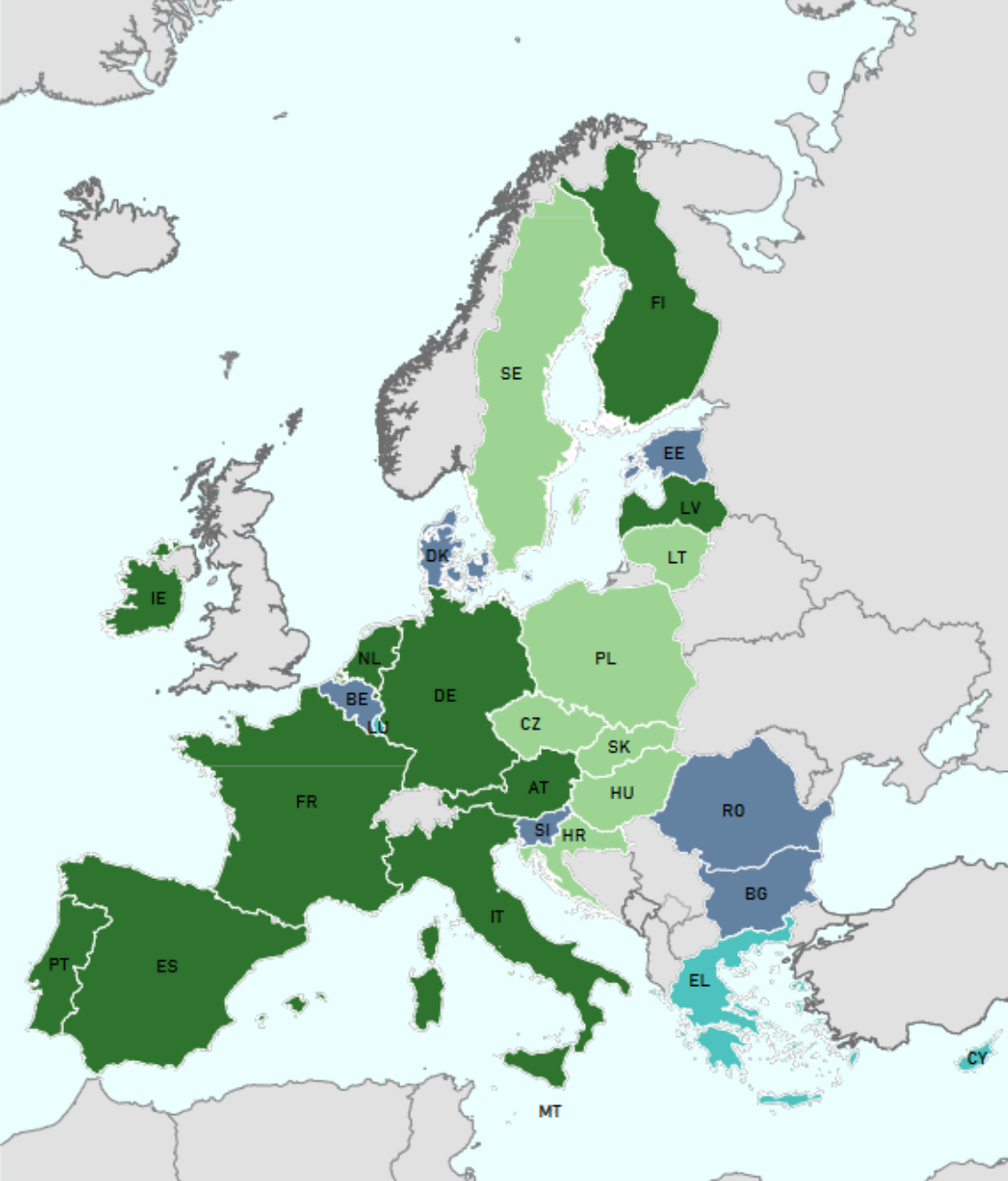
Open calls:

- Two 2023 calls are currently open: [Home | Circular Bio-based Europe Joint Undertaking \(CBE JU\) \(europa.eu\)](#)”

Priority 2: Deploy local bioeconomies e.g. Status of the national bioeconomy policies in the EU-27

(as of Dec 2022)

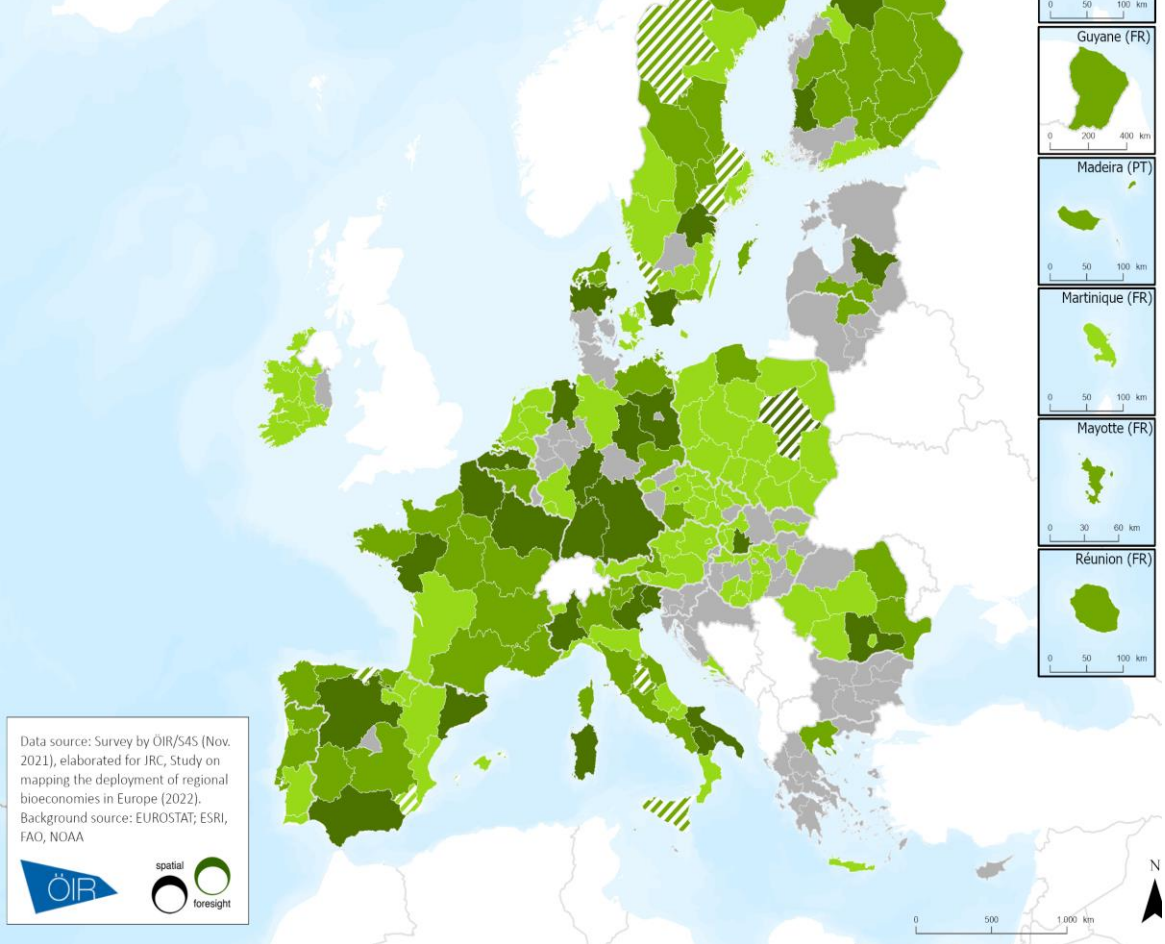
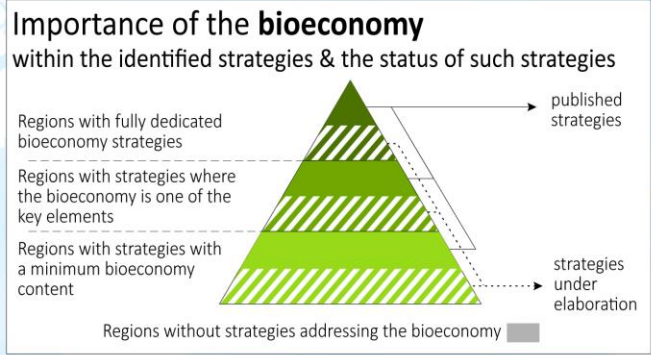
- **10 Member** states with **dedicated bioeconomy strategies** at national level (AT, DE, ES, FI, FR, IE, IT, LV, NL, PT)
- **7 MS** in the process of **developing their respective dedicated national strategies** (CZ, **HR**, HU, LT, PL, **SE**, SK)
- **6 MS** are involved in other **macro-regional**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



Status of national bioeconomy strategies:

- 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

Source: EC's Knowledge Centre for Bioeconomy
Administrative Boundaries:
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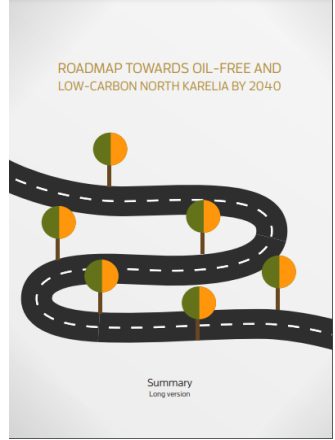
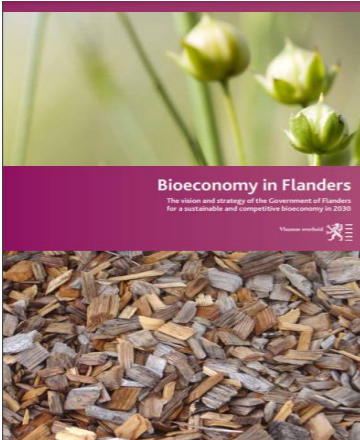
- Açores (PT)
- Canarias (ES)
- Guadeloupe (FR)
- Guyane (FR)
- Madeira (PT)
- Martinique (FR)
- Mayotte (FR)
- Réunion (FR)

Data source: Survey by ÖIR/S4S (Nov. 2021), elaborated for JRC, Study on mapping the deployment of regional bioeconomies in Europe (2022).
Background source: EUROSTAT; ESRI, FAO, NOAA

Status of the regional bioeconomy policies in the EU-27

(as of Nov 2021)

- **28 EU** regions have dedicated strategies



- **68 EU** regions have adopted policies where bioeconomy is a key element while in **7 additional regions** such strategy is under development.

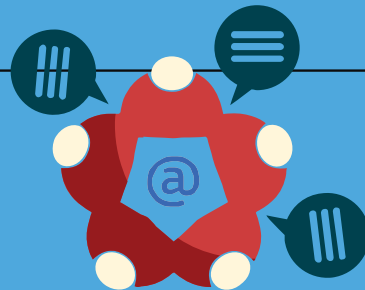
Knowledge Centre for Bioeconomy Joint Research Centre



Identifying and **filtering** relevant information and making it accessible:



Bringing together researchers, policymakers and other experts in the field.



Analysing, synthesising and communicating available evidence.



Enhancing the **knowledge** base for policymaking.



- https://knowledge4policy.ec.europa.eu/bioeconomy_en



The EU's Bioeconomy Strategy

A policy framework for sustainability

Findings of the Progress Report

<https://op.europa.eu/s/wmT4>

Bioeconomy continues to be a **crucial policy** for the EC

- Contributes to the European Green Deal objectives
- Enables sustainable and just transition pathways to a climate-neutral & nature-positive Europe 2050.

Mainstreaming and **up-scaling** of sustainable bioeconomy ever more important in view of the current food and energy price crisis

- Transition to resilient and sustainable food systems & clean energy within ecosystem boundaries
- Managing potential trade-offs from a holistic perspective



Additional focus needed: risks and opportunities



Biosphere stewardship strategy

Focus on resolving multiple pressures on land and sea



Consumption-based framework

Focus on the overall consumption of biological resources

Bioeconomy Council conclusions (position of Member States, Ministers for Agriculture and Fisheries) - April 2023

- EMPHASISES the **central role of a sustainable and circular bioeconomy** for the climate and the environment, and **for achieving the objectives of the European Green Deal and its strategies.**
- Invites EC to provide an overview and follow-up on **how the bioeconomy has been addressed in national plans for the Common Agricultural Policy.**
- Calls on the EC to **better integrate bioeconomy in all EU policies** and support the development of the bioeconomy across the whole value chain while addressing regulatory barriers.
- Calls on the Commission to present an updated Bioeconomy Strategy and Action Plan

Bioeconomy in G20 Statements



G 20 India's Presidency June 2023: The world's leading nations have recognised the potential of the circular and sustainable bioeconomy in their latest G20 Research Ministerial Meeting Declaration. More work to be done to promote the circular and sustainable bioeconomy in all parts of our globe.

Circular Bio-Economy

10. We recognize the important role science, technology and research play in supporting nature-based solutions and in transitioning to a more circular and sustainable bio-economy and the need for innovation across all industrial supply chains, from raw materials to finished products, while meeting food security needs.

11. We further recognize global efforts underway to review the current regulatory frameworks that reinforce linear production models in view of supporting capacity building and updating production and consumption models to achieve a more circular and sustainable bio-economy, with an integrated approach to land, water, energy and biomass use.

https://www.g20.org/content/dam/gtwenty/gtwenty_new/document/G20_Research_Ministerial_ODCS.pdf

Bioeconomy in the USA

Executive Order of President Biden on Biomanufacturing and Bioeconomy, Sept 2023

“It is the policy of my Administration to

- coordinate a whole-of-government approach to advance ... biomanufacturing towards innovative solutions in health, climate change, energy, food security, agriculture, supply chain resilience, and national and economic security.
- harnesses the power of biology to create new services and products, which provide opportunities to grow the United States economy and workforce and improve the quality of our lives and the environment. ”

Bold Goals for U.S. Biomanufacturing Harnessing Research and Development to Further Societal Goals, March 2023



The Bioeconomy – Youth Ambassadors and next steps

- **The EU Bioeconomy Youth Ambassadors**
- **March 2024:** Bioeconomy Youth & Innovation Festival, Brussels
- **October 13th 2023:** Conference at the Agricultural University of Plovdiv, Bulgaria on Innovation Valleys for Bioeconomy and Food Systems
- **European elections in May 2024** a new Commission expected to take office towards end of 2024



Conclusions – The **EU Bioeconomy** is a

- **thriving sector in the EU** with growing number of national and regional strategies
- a **problem solver** to meet the ambition of the European Green Deal (e.g. through its contribution to climate mitigation) and a **complement to the circular economy** e.g. by offering solutions for biomanufacturing/”defossilisation”
- **Horizon Europe supports research and innovation related to the bioeconomy** including through the Circular Biobased Europe (CBE) partnership
- **Collaboration with Universities** like the **European Bioeconomy Universities Alliance** is essential to progress on the research and the education agenda related to the bioeconomy

Europe's
bioeconomy
weaving it all together

Thank you



Links to EU Bioeconomy:

[**EU Bioeconomy Progress Report.** European Bioeconomy Policy: Stocktaking and future developments](#)

Bioeconomy Council Conclusions April 2023:

https://www.linkedin.com/posts/peter-wehrheim-9b87b334_bioeconomy-bioeast-activity-7057293414286913536-lllec?utm_source=share&utm_medium=member_desktop

[**13th October Bioeconomy Conference at Agricultural University of Plovdiv**](#)  https://lnkd.in/e2f_XVPS