

# Κυκλική οικονομία και έρευνα

Εθνική ημερίδα ενημέρωσης για τον Ορίζοντα Ευρώπη: Digital, Industry, Space

21/02/2023

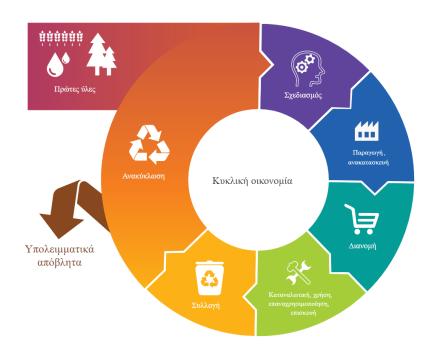


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# Κυκλικότητα



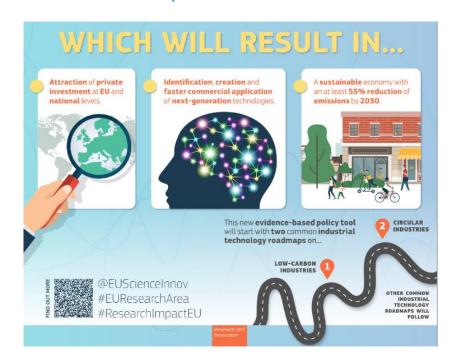
Η κυκλική οικονομία είναι ένα παραγωγικό και καταναλωτικό μοντέλο που αποσκοπεί στην αύξηση της αποδοτικότητας των πρώτων υλών, μέσω της χρήσης των υλικών για μεγαλύτερο χρονικό διάστημα, με παράλληλη ελαχιστοποίηση της χρήσης φυσικών πόρων.

# Προς τη διττή μετάβαση – Σύνδεση Ψηφιακών τεχνολογιών και κυκλικότητας

- √ Βελτιστοποίηση της **αξιοποίησης των πόρων** & μετατροπή των αποβλήτων ή υποπροϊόντων σε **δευτερογενή πρώτη ύλη**
- ✓ Διαχείριση της θερμότητας που παράγεται από κατεργασίες της βιομηχανίας
- ✓ Αξιοποίηση των βιομηχανικών λυμάτων (από την τοπική κοινωνία, γεωργία)
- √ Τεχνολογίες και πλατφόρμες που επιτρέπουν την ολοκληρωμένη διαχείριση των υδάτινων πόρων
- ✓ Τεχνολογίες χαμηλών εκπομπών διοξειδίου του άνθρακα στην παραγωγική διαδικασία
- ✓ Βελτιστοποίηση της **λειτουργίας των παραγωγικών μονάδων** (Machine Learning & Al)
- ✓ Εφαρμογές ανάλυσης των δεδομένων για τη λήψη αποφάσεων (Big Data Analytics)
- ✓ Αυτοδιάγνωση τεχνικών θεμάτων / αυτοεπισκευή (τεχνολογίες και έξυπνα υλικά)
- ✓ Ευφυή εργαλεία παρακολούθησης / monitoring Περιβαλλοντικής, Κοινωνικής και Εταιρικής Διακυβέρνησης/ ESG, Στόχων Βιώσιμης Ανάπτυξης/SDGs
- **/** ....

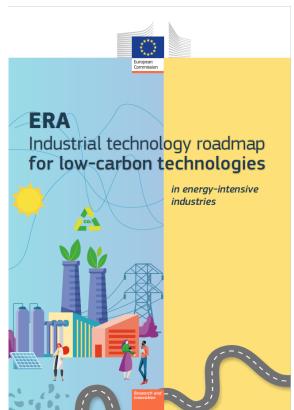
# ΕΝΗΜΕΡΩΣΗ - Ευρωπαικός Χώρος Έρευνας (ΕΧΕ) | Χάρτες πορείας





https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/era-industrial-technologies-roadmaps\_en

# Ευρωπαικός Χώρος Έρευνας (ΕΧΕ) Χάρτης πορείας



Απρίλιος 2022



#### Industrial Technology Roadmap #1 | Low-carbon technologies for energy intensive industries

Energy-intensive industries, such as steel, cement and chemicals account for more than two thirds of all industrial CO2 in the EU. Between 1990 and 2018, these industries decreased their emissions by almost 30%: However, existing technologies will not be able to deliver the full emissions reduction required to achieve the green transition, and new technologies need to be commercialised by 2030. Energy-intensive industries require significant investments into R&I, demonstration, and rollout of new technologies.



The Low-Carbon Industrial Technologies Roadmap will link EU Strategic Research and Innovation Agendas, developed together with industry through the dedicated Horizon Europe partnerships, with the main EU and national support programmes to support low-carbon technologies.

It will provide R&I evidence and guidance to strengthen the EU energy-intensive industries ecosystem and facilitate scoping and development of potential industrial alliances and Important Projects for Common European Interests.

#### **Horizon Europe Partnerships**

#### Clean Steel - Low Carbon Steelmaking

- The Clean Steel Partnership will focus on accelerating and deploying the most promising solutions, with an investment
  of €1,700 million (€700 million from the EU & €1,000 million from industry).
- Synergies with the Research Fund for Coal and Steel will provide an additional budget of £700 million through Horizon Europe and the assets of the European Steel and Coal Community. The investments, under a common governance structure, will translate results into the economy to ensure market uptake of research outputs and make EU steel industry is fer mover in industries/scale decarbonisation.

Project | Use of recycling, waste and biomass materials in electric arc furnaces. GREENEAF2 demonstrated a reduction in CO2 emissions without drastic modification of the production cycle and realised collaboration among local institutions and other industrial sectors.

#### Processes for Planet (P4P)

- P4P aims to develop and foster the deployment of climate neutral solutions for the European process industries, designed to close the energy and feedstock loops.
- With a budget of £2,800 million, P4P will bring together process industry, focused on sustainable processes through resource & energy efficiency (coment, ceramics, chemicals, engineering, minerals and ores, non-ferous metals, steel & water sectors), SMEs, the public sector, research & cacdemia. The partnership will develop Hubs-4Circularity, first-of-a-kind lichirbuse demonstrater loalists of fineral commercial size across the EU.

Project | Transforming industrial emissions into building insulation and coatings. The Carbon4PUR project sought to turn CO2 in a raw material for increased sustainability & a more circular economy.

#### Made in Europe

- Europe's industry is strong in advanced manufacturing technologies, with the highest share of world patent applications and the highest number of venture capitalist backed firms'. It generates 22% of the world's manufacturing output for EU27, with a trade surplus in manufactured goods of 6421 billion annually.
- The partnership's budget of €900 million will seek to increase the number and attractiveness of jobs, while securing the environmental, economic and social sustainability for future generations in Europe. Key areas of action refer to establishing efficient, responsive and smart factories and supply chains.

Project | Innovative energy efficient industrial production system. The <a href="ECOFACT">ECOFACT</a> project aims to support manufacturing industries in optimising the energy performance of their production systems with regard to restrictions such as time and resources.

#### EIT Climate KIC & EIT Raw Materials

- EIT Climate-KIC runs holistic, transformative, citizen-driven and systemic innovation initiatives to support the EU climate goals, circular economy, digitization and the use of satellite data. It attracted more than €550- million investment to start-ups.
- Raw materials are essential to the transition to a carbon-neutral circular economy. With a budget up to £800 million, including contribution from includinty, ET Raw Materials connects mere than 120 care and associate partners and over 190 project partners of leading businesses, universities and research & technology organisations from over 20 EU countries:

Project | Recycling of carbon fibres. The RELICARIO project develops a new technology to recycle Carbon Fibre Reinforced Plastics using thermosolvolysis allowing the substitution of metals used in the automotive or sport industry by recycled carbon fibres while offering easier use by industry, lower process cost and lower carbon fotoprint

<sup>&</sup>lt;sup>2</sup> de Bruyn et al. S, Energy-intensive industries - Challenges and opportunities in energy transition, study for the committee on industry, Research and Energy (ITRE), Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2020.

3 SWO(201138), Annual Single Market Report 2021.

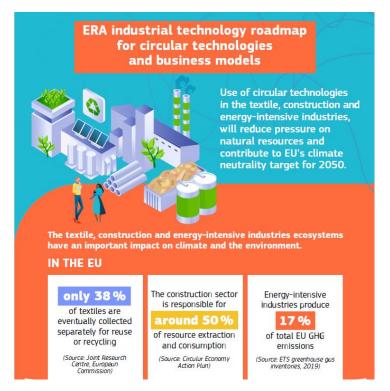
<sup>&</sup>lt;sup>4</sup> Joint Research Centre, estimated figures based on data from International Energy Agency, Material Economics, Agora Energiewende and Wuppertal Institut \* COM(2021)350, Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery.

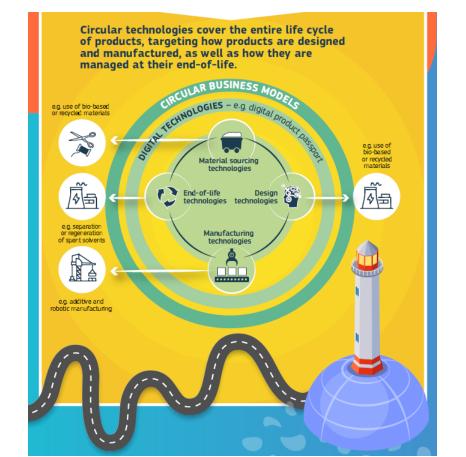
European Commission, Report on technology trends, technology uptake, investment and skills in advanced technologies, 2020.

https://ati.ec.europa.eu/reports/reports/report-tachnology-trende-technology-uptake-investment-and-skills-advanced

Eurostat, https://ec.europa.eu/eurostat/statistics-explained/index.php/Manufacturing\_statistics\_\_NACE\_Rev\_2#Structural\_profile

# Ευρωπαικός Χώρος Έρευνας (ΕΧΕ) | Χάρτης πορείας (2a)





# Ευρωπαικός Χώρος Έρευνας (ΕΧΕ) | Χάρτης πορείας (2b)

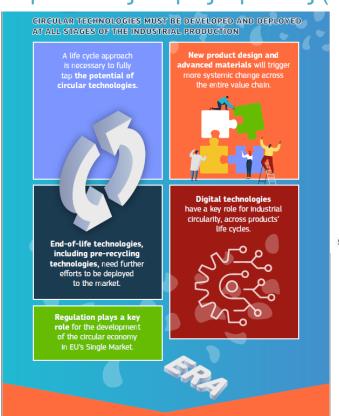


Figure 2.1: Overview of main technology groups relevant for the circularity of the textile industrial ecosystem

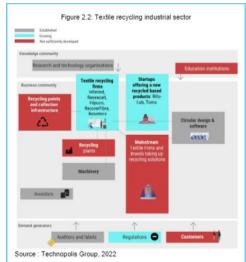


high TRL

medium TRL

Source: Technopolis Group, 2022.

low TRI



Ιανουάριος 2023

# Ευρωπαικός Χώρος Έρευνας (ΕΧΕ) Χάρτης πορείας (2c)

Table 2.4: Summary of assessment results and technology pathways for circular technologies for the textiles industry – digital technologies

Technology pathways of R&I activities	TRL	Circularity potential	Economic	Contribution to zero-pollution	Possible negative effects
Digital technologies					
Collaborative consumption business models	TRL7-9	**	***	*	likely
Artificial intelligence used for optimisation and analysis	TRL1-3	***	**	**	none
Digital authentication/passport for textile products/materials	TRL4-6	***	**	**	likely
Augmented/virtual reality (tailored fabric/textile selection)	TRL7-8	**	**	*	none

Source: Technopolis Group, 2022.

#### Box 2.3 | Zoom on the chemical circular value chain

Key technology developers and owners in the chemical industry circular value chains are the chemical and petro-chemical industries. Further stakeholders are businesses specialising in recycling activities, which include waste management companies (common for consumer plastics), but also increasingly SMEs and start-ups that innovate plastic recycling, bio-based polymers, compostable polymers, products out of these new polymer materials. Recycling and revalorisation of chemical waste is often done by chemical companies themselves, or in collaboration with specialised hazardous waste management and recycling companies.

Figure 2.6: Stakeholders involved in circular chemical value chains Established Growing Not sufficiently developed Knowledge community Research and Technology Organisations Academic institutes Industrial research labs **Business community** Mainstream Chemical and Startups Agriculture and forestry offering new materials, petro-chemical industries businesses engaging in adoption of circular technologies, products bio-based industries technologies Industrial Symbiosis Intermediaries Bio-based industries and Hazardous waste Household waste biorefineries. disposal companies management companies Digital technology providers: Plastics recycling and companies, startups Hazardous chemical recycling and upcycling companies, Product as Service business operators Investors (chemical leasing, etc) Demand generation Auditor and labels/ B@B Customers Individual consumers Regulations Certification agents Source: Technopolis Group, 2022





Events \*

Contacts

## NCP4Industry supports via different services:





Small and medium enterprises (SMEs) Large enterprises

Our services are free of charge:

Academia



Research

organisations

Non-profit organisations

**Public** administrations, and consultancies



**NCPs' Hosting Organisations** 

https://ncp4industry.eu



**Guidance on choosing** relevant Horizon Europe topics and types of action



Advices on administrative procedures and contractual issues



**Trainings, Mutual Learning** Modules and assistance on proposal writing



**Pre-proposal Checks** events

## ΕΝΗΜΕΡΩΣΗ

Εκδηλώσεις

EuroNanoForum 2023 11-13 Ιουνίου, Σουηδία

https://ncp4industry.eu





About NCP4Industry Y

Events Y



European Commission NCP Networks NCP4Industry

(L) February 6, 2023

The EuroNanoForum is a conference held in the country currently holding the presidency of the Council of the European Union. This conference provides a forum for representatives from academia, industry and policy to engage in comprehensive discussions.

In 2023, the EuroNanoForum will be held in Sweden (Lund), from the 11th to the 13thof June, and the ambition is to organize a high-level, international conference and networking arena in nanoscience and nanotechnology. EuroNanoForum 2023 will be a strategic conference focused on identifying policy options and priorities, and on planning future actions regarding European activities on nanoscience and nanotechnology. Advanced materials, innovation, sustainability, circular economy and fossil-free energy will also be topics of strategic focus.

#### NANOTECHNOLOGY AND NANOSCIENCE FOR A SUSTAINABLE EUROPE

- · Green Energy European sustainable energy harvesting, storage, and use
- · Nanomedicine Nanomaterials to achieve innovation in healthcare
- Semiconductors and new materials for future chips
- Safe and Sustainable by Design & Environmental Nanosafety
- European Flagships for an innovative Europe
- · Quantum Technologies Europe's major role
- · Advanced Materials and Manufacturing for a sustainable and resilient Europe
- European Infrastructures From fundamental science to industrial applications

For more information and updates visit: link

Some practical detail:

Date: 11-13 June 2023

Location: Lund University, Faculty of Engineering Campus, Lund, Sweden

Structure: 2+ days, plenary and parallel sessions, workshops, exhibition and poster session, matchmaking for B2B meetings

## ΕΝΗΜΕΡΩΣΗ

Εκδηλώσεις

The future of Energy Materials 13-14 Μαρτίου 2023

https://ncp4industry.eu



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Events v

■ News

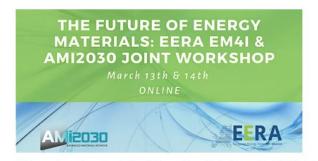
Tools v

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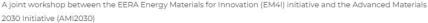


From 13 March 2023 to 14 January 2023

Partnership events







## PROPOSAL IDEA CHECK

Λάβετε feedback για την ιδέα σας στον τομέα της Βιομηχανίας!

Προθεσμία: 13 Μαρτίου 2023 The NCP4Industry Network is coordinated by APRE Join the intranet



About NCP4Industry \*

Events \*

#### Second Round of the Proposal Idea Check now open for submission!

Home > News > NCP Networks > Second Round of the Proposal Idea Check now open for submission!

NCP Networks NCP4Industry

(L) February 3, 2023

The NCP4Industry network will organise a second round of the Proposal Idea Check in February and March 2023. The network invites researchers, entrepreneurs and other stakeholders to submit their Proposal Ideas addressing one of the industry topics under Destinations 1 & 2 from the Cluster 4: Digital, Industry and Space Work Programme 2023-2024.

Proposal Idea Check is an opportunity to get feedback and insight on a project idea from the international network of Horizon Europe Cluster 4 Industry National Contact Points (NCPs). Proposal Idea refers to the first steps, the phase before the full proposal takes form, at which time proposers may contact the NCPs to assess the quality and relevance to the topic.

This Proposal Idea Check arranged by the NCP4Industry network will be offered as an online service and the feedback will be provided by organising individual online meetings with the NCPs.

#### **Guidelines for participation:**

Please fill the template on the NCP4Industry network's website and submit your project idea by 13 March 2023. The NCP4Industry network will be in contact with all the participants and the feedback meetings will be organised after the submission deadline.

Please note that the NCP4Industry network can provide feedback only to a limited number of proposal ideas. In addition, proposal ideas failing to follow the template and the instructions therein, may not be included to the Proposal Idea Check service without further consideration of their content or quality.

If you have any questions regarding the Proposal Idea Check or the information included into the form, please be in contact with the organizers of this service by sending an email to proposalcheck-ncp4industry@apre.it.

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## ΕΝΗΜΕΡΩΣΗ

https://www.ideal-ist.eu

## Δίκτυο ΕΣΕ για τις Ψηφιακές Τεχνολογίες





Have your proposal for a Cluster 4 Digital topic quality checked!

Location:

Date: 27/02/2023 - 02/03/2023

Add to Calendar

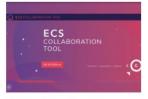


Photonics Partnership Annual Meeting 2023

Location: Belgium

Date: 26/04/2023 - 27/04/2023

Add to Calendar



#### **ECS Collaboration Tool**

Location: Hotel Le Plaza Brussels Adolphe Maxlaan 118/126 1000, Brussels, Belgium Date: 07/02/2023 - 08/02/2023

Add to Calendar



European Conference on

Networks and

Communications & 6G summit

2023

Location: 400 10, Sweden Date: 06/06/2023 - 09/06/2023 Add to Calendar



ADRA - Info Day and brokerage event

Location:

Date: 03/02/2023, 09:30 - 13:00

Add to Calendar



European Robotics Forum 2023

Location: Denmark Date: 14/03/2023 - 08:00 (All day)

Add to Calendar



## FULL PROPOSAL CHECK

Λάβετε feedback για την **πρότασή** σας!

Η υποβολή έληξε 17 Φεβρουαρίου 2023

Συνδεθείτε για μελλοντικές υποβολές.

https://idealist.proposalcheck.eu/?utm\_campaign=fpc2022&utm\_source=ncpcontact

# Have your proposal for a Cluster 4 Digital topic quality checked!



Receive in-depth feedback from experienced Horizon evaluators on your advanced proposal drafts.



WHAT TO EXPECT \

RISK FREE: If you cannot make the deadline, you can cancel.



## Selection of participants

The selection of the proposals is made case-by-case and based on the **completeness** of your draft. Indeed, the added-value of the FPC is greater the more complete your proposal is. Therefore we are really inviting interested coordinator to retro-plan the writing of your proposal in order to have an advanced draft (almost completed) by the 17th of February.

- By the 17th of February, end of business day: you must have submitted your advanced draft.
- · Between the 20th and the 22nd of February: the proposals' completeness are reviewed and ranked accordingly.
- On the 23rd, by midday, the proposals retained for a FPC session are allocated to external experts, and communicated to proposers.
- Between the 23rd and 27th of February, the expert evaluators review your proposal.
- · Between 27th of February and 2nd of March, the FPC sessions will be taking place.



You need an account to receive event updates, contact the organisers and/or to submit your proposal.

## ΔΙΚΤΥΩΣΗ

Horizon Europe Digital -Face2Face Brokerage, ...-29 Μαρτίου 2023

Horizon Europe - Industry 2023 Brokerage event, ...- 31 Μαρτίου 2023

Horizon Europe - Brokerage Event for Cluster 4 – Space calls 2023,...- 28 Μαρτίου 2023



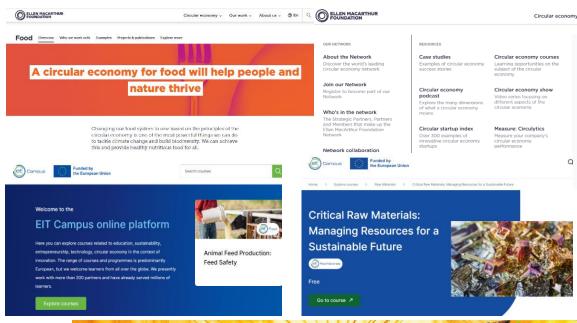






# #ενημέρωση, δικτύωση Capacity building





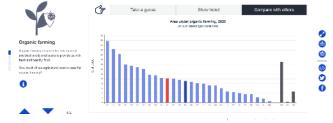




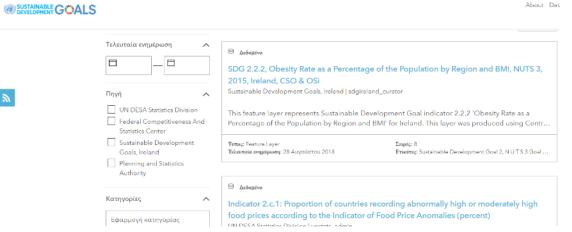
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## ΔΙΑΒΟΥΛΕΥΣΗ

Μπορείτε να κάνετε τη φωνή σας να ακουστεί!

"I am glad to launch this public consultation: it is an unprecedented opportunity for all interested parties to make their voices heard. Its outcomes will help us evaluate Horizon's results up until now and contribute shaping its future. I warmly invite all those with an interest in EU research and innovation to participate. We will make a difference together".

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





<b>I</b> English
<b>English</b>

#### **NEWSROOM**

Directorate-General for Informatics (DIGIT)

opics v Arc

#### OVERVIEW > NEWS

# Last days to participate: public consultation on the EU's Horizon Research and Innovation Programmes 2014-2027

The Commission Services are currently running the largest ever public consultation held on the past, present and future of the EU's Horizon research and innovation programmes 2014-2027.

date: 15/02/2023

Through this consultation, you are able to share your views on:

- The ex-post evaluation of Horizon 2020
- The mid-term evaluation of Horizon Europe
- The Horizon Europe Strategic Plan 2025-2027

This is an excellent opportunity to share your views and make your voice heard - please do not hesitate to re-share the news within your network of stakeholders, inviting them to reply to the questionnaire and/or share position papers. The consultation is open until 23 February 2023.

- Respond to the consultation on EU Survey
- See the news alert for the consultation

For any questions related to the consultation, please contact <u>RTD-PUBLIC-CONSULTATION-HORIZON@ec.europa.eu</u>

Thank you in advance.



EΘΝΙΚΟ ΚΕΝΤΡΟ ΤΕΚΜΗΡΙΩΣΗΣ & ΗΛΕΚΤΡΟΝΙΚΟΥ ΠΕΡΙΕΧΟΜΕΝΟΥ Ι www.ekt.gr

Σας ευχαριστώ | horizoneu@ekt.gr