

Raw materials in Horizon Europe

PLATIRUS exploitation workshop 21 April 2021

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HaDEA: Health and Digital Executive Agency



HaDEA - European Health and Digital Executive Agency

- HaDEA has been established on 1 April 2021 by the European Commision
- HaDEA manages European programmes and initiatives on behalf of the European Commission.
- It works closely together with its partner DGs CNECT, DEFIS, GROW, RTD and SANTE, which is in the lead – all of them focusing on legislative and strategic tasks in policymaking.
- HaDEA addresses the European Commission's ambition to help rebuild a post-COVID-19 Europe at its heart, which will be greener, more digital, more resilient and better fit for the current and forthcoming challenges.

https://hadea.ec.europa.eu/index_en



HaDEA - European Health and Digital Executive Agency

HaDEA will implement the following programmes (with indicative budgets):

- EU4Health programme: €51 billion
- Horizon Europe: Pillar II, Cluster 1: Health: €4.8 billion
- **Single Market Programme**: Food safety: health for humans, animals and plants along the food chain and better training for safer food: €1.3 billion
- **Digital Europe Programme**: €0.8 billion
- Connecting Europe Facility: Digital: €1.7 billion
- Horizon Europe: Pillar II, cluster 4: Digital, Industry and Space: €5.5 billion
- + Legacy: financial commitments and projects from the predecessor programmes



HaDEA's role

- Managing EU programmes
- Feeding into the policy-making process the project's outcome & success stories
- > In charge of the whole project life:
 - Evaluation of Proposals
 - Grant Agreement Preparation
 - Scientific/Technical and Financial monitoring of projects
 - Supporting exploitation and dissemination of project results (policy feedback)



Raw Materials and EU R&I



Raw Materials in Horizon 2020

• The **Raw Materials Initiative**'s 3 pillars:



- Work programme based on the Strategic Implementation Plan, established by the EIP on Raw Materials.
- Critical Raw Materials (CRM) list regularly updated (last version: September 2020)
- Research and innovation along the **whole value chain**, from extraction to recycling: policy support, R&I and demonstration



RAW MATERIALS

HORIZON 2020



Raw Materials in Horizon 2020

1471 participations by 928 organisations





Project participations in Horizon 2020





Research and Innovation



THE EU RESEARCH & INNOVATION PROGRAMME 2021 – 27

This presentation is based on the political agreement of 11 December 2020 on the Horizon Europe. Information on some parts is pending revision.

19 March 2021

Raw Materials in Horizon Europe



Pillar 2 - Global Challenges & European Industrial Competitiveness Cluster 4 – Digital, Industry and Space: Key strategic orientations for R&I

Key Strategic Orientations	IMPACT AREAS	EXPECTED IMPACTS
Promoting an open strategic autonomy by leading the development of key digital,	 Competitive and secure data- economy Industrial loadership in key and 	 Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials.
enabling and emerging technologies, sectors and value chains.	 Industrial leadership in key and emerging technologies that work for people 	 Globally attractive, secure and dynamic data-agile economy.
	 Secure and cybersecure digital technology 	 Sovereignty in digital technologies and in future emerging enabling technologies.
		 Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data.
		 A human-centred and ethical development of digital and industrial technologies.
Making Europe the first digitally enabled circular, climate neutral	 Climate change mitigation and adaptation 	 Clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and inferent meetings
and sustainable economy.	 Circular and clean economy 	infrastructures.



CL4, destination 1: Climate neutral, circular and digitised production

Expected impact Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures .

A twin green and digital transition

Hubs for circularity, a stepping stone towards climate neutrality and circularity in industry

• Reducing environmental footprint, improving circularity in extractive and processing value chains (IA) - increasing access to primary raw materials and secondary raw materials, in particular critical raw materials for EU industrial value chains and strategic sectors. Develop demonstrators and **pilot plants** with a lower environmental impact.



CL4, destination 2:

Increased autonomy in key strategic value chains for resilient industry (1/2)

Expected impact: Industrial leadership and increased autonomy in key strategic value chains with security of supply in **raw materials**

A digitised, resource-efficient and resilient industry

Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy

- Identifying future availability of secondary raw materials (RIA) Improve knowledge base of EU and third country secondary raw materials (potential, resource estimation, production and refining), developing the EU raw materials intelligence, strategic planning and foresight capacity
- Developing climate-neutral and circular raw materials (IA) Advanced solutions for resource efficiency, effective reuse and recycling of secondary raw materials, for EU industrial value chains and strategic sectors. Pilot demonstration.
- Building EU-Africa partnerships on sustainable raw materials value chains (CSA) Increase access to primary and secondary
 raw materials, in particular CRMs for EU industrial value chains and strategic sectors, while promoting responsible mining practices
 through the EU's international cooperation programmes.



CL4, destination 2:

Increased autonomy in key strategic value chains for resilient industry (2/2)

Expected impact: Industrial leadership and increased autonomy in key strategic value chains with security of supply in **raw materials**

A digitised, resource-efficient and resilient industry

Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy

- Innovation for responsible EU sourcing of primary raw materials, the foundation of the Green Deal (RIA) Increase access to
 primary and secondary raw materials, in particular critical raw materials for EU industrial value chains and strategic sectors, by
 deploying innovative geological, geophysical, geochemical, and data analysis approaches to elucidate the geological history and
 structure
- Building innovative value chains from raw materials to sustainable products (IA) increasing access to primary raw materials, in particular critical raw materials for EU industrial value chains and strategic sectors. Resilient critical raw materials supply chains for the e-mobility and renewable energy ecosystems and strategic sectors



Action plan on Critical Raw Materials

Ten actions to make Europe's raw materials supply more secure and sustainable

1. 2.	Launch an industry-driven European Raw Materials Alliance. Develop sustainable financing criteria for the mining and extractive sectors.	Resilient value chains
3. 4.	substitution of critical raw materials.	Circularity, sustainable products and innovation
5. 6. 7. 8.	Identify priority mining and processing projects for critical raw materials in the EU. Develop expertise and skills in mining, extraction and processing in regions in transition. Deploy Earth-observation programs and remote sensing for resource exploration, operations and post-closure environmental management. Develop research and innovation projects to reduce environmental impacts of raw materials extraction and processing.	Sourcing from the EU
9. 10	Develop strategic international partnerships to secure a diversified supply of sustainable critical raw materials, starting with pilot partnerships with Canada, interested countries in Africa and the EU's neighbourhood in 2021. Promote responsible mining practices for critical raw materials.	Diversified sourcing from third countries



Action plan on Critical Raw Materials



The green and digital transitions will lead to a drastic increase in European demand for certain critical raw materials by 2050.

Additional material consumption for batteries, fuel cells, wind turbines and photovoltaics in 2050 compared to current EU consumption of the material in all applications

12 16 20 24 28 32 36

8



x times more

40 44 48 52 56 60

Action plan on Critical Raw Materials

	Aerospace/ defence	Textiles	Electronics	Mobility/ Automotive	Energy- intensive industries	Renewable energy	Agri- food	Health	Digital	Construction
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Phosphorus	1				1		100			
Scandium	1			1		1				
Silicon metal	1	1 - C	×.	11 A	1	1		1		1
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Tungsten	1		al an	<i>¥</i>	1			1		
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HREE	1		al an	1	1	1		1		1
LREE	1		4	1	1	1		1		100



Raw Materials in Horizon Europe

- Raw materials are at the core of the EU's industrial strategy, and key to the twin (digital and green) transition.
- Critical raw materials (CRMs) and other high-tech metals are crucial for strategic value chains (e-mobility, batteries, renewables, digital, etc)
- EU raw materials policy will continue, aiming to ensure a secure, sustainable and responsible supply of raw materials, especially CRMs, tackling vulnerabilities in the whole value chain.
- CRM list has been updated (Sept.2020)
- The European Raw Materials Alliance has been established; 10-point action plan on CRMs



Thank you



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- CRM Action Plan 2020 | European Commission (europa.eu)
- Raw Materials | Horizon 2020 (europa.eu)
- Horizon Europe | European Commission (europa.eu)
- Horizon Europe Strategic Plan 2021-2024
- <u>Cluster 4: Digital, industry and space | European Commission</u> (europa.eu)
- Digital, Industry and Space (europa.eu)
- EU Policy European Raw Materials Alliance (ERMA)





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