



Raw Materials in Horizon Europe

19 November 2021

ERA-MIN 2 Final Conference

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*GROW i1 – Energy Intensive Industries
and Raw Materials*

EU Action Plan on Critical Raw Materials

- 1 Launch the European Raw Materials Alliance
- 2 Develop sustainable financing criteria for mining
- 3 Develop R&I on waste processing, advanced materials and substitution
- 4 Map the potential supply of secondary CRM from EU stocks and wastes
- 5 Identify investment needs for mining projects that can be operational in 2025
- 6 Develop expertise and skills in mining
- 7 Deploy Earth observation programmes for exploration, operation and post-closure environmental management
- 8 Develop R&I projects on exploitation and processing of CRMs
- 9 Promote responsible mining practices for CRMs
- 10 Develop strategic international partnerships to secure CRMs supply

Raw Materials in Cluster 4

Three **policy objectives**

will be pursued across the cluster, in synergy with other EU instruments and initiatives:

1

Ensuring the competitive edge and autonomy of EU industry

2

Fostering climate-neutral, circular and clean industry

3

A major contribution to inclusiveness

10 Key R&I Orientations

9

Circular Industries

10

Low-carbon and Clean Industries

EU Action Plan on Critical Raw Materials

Action 3

Launch critical raw materials research and innovation in 2021 on **waste processing, advanced materials** and **substitution**

Action 4

Map the potential **supply of secondary** critical raw materials from EU stocks and wastes and identify viable recovery projects by 2022

Action 7

Deploy **Earth-observation** programmes and **remote sensing** for resource exploration, operations and post-closure environmental management

Action 8

Develop Horizon Europe R&I projects on processes for **exploitation** and **processing** of critical raw materials to **reduce environmental impacts** starting in 2021

Action 9

Develop strategic **international partnerships** to secure a diversified and sustainable supply of critical raw materials

Action 10

Promote **responsible mining** practices for critical raw materials

Raw Materials in Horizon Europe (2021-2027)

~ EUR 300 mln budget, 2021-2022

6 topics in 2021

**Opening: 22 Jun 2021
Deadline: 23 Sep 2021**

7 topics in 2022

**Opening: 12 Oct 2021
Deadline: 30 Mar 2022**

**Work Program of Cluster 4,
Digital, Industry and Space:**

Funding portal:

[wp-7-digital-industry-and-space_horizon-2021-2022_en.pdf \(europa.eu\)](#)

[Funding & tenders \(europa.eu\)](#)

Raw Materials topics in Horizon Europe

~ EUR 300 million, 2021-2022

Opening: 22 Jun 2021
Deadline: 23 Sep 2021

Opening: 12 Oct 2021
Deadline: **30 Mar 2022**

Innovation for responsible EU sourcing of primary raw materials

Monitoring and supervising system for exploration and future exploitation activities in the deep sea

Building innovative value chains from raw materials to sustainable products

Technological solutions for tracking raw materials flows in complex supply chains

Reducing environmental footprint, improving circularity in extractive and processing value chains

Earth observation technologies for the mining life cycle

Building EU-Africa partnerships on sustainable raw materials value chains

Developing digital platforms for the small scale extractive industry

Identifying future availability of secondary raw materials

Streamlining cross-sectoral policy framework throughout the extractive life-cycle environmentally protected areas

Developing climate neutral and circular raw materials

Innovative solutions for efficient use and enhanced recovery of mineral and metal by-products from processing of raw materials

Support to the activities of the European Geological Services. Deadline: **5 Jan 2022**

Sustainable and innovative mine of the future

➤ **Horizon Raw Materials Info Day and Brokerage Event on 16 Nov 2021**

Raw Materials topics in 2022

1

HORIZON-CL4-2022-RESILIENCE-01-02

Monitoring and supervising system for exploration and future exploitation activities in the deep sea

2

HORIZON-CL4-2022-RESILIENCE-01-03

Streamlining cross-sectoral policy framework throughout the extractive life-cycle in environmentally protected areas

3

HORIZON-CL4-2022-RESILIENCE-01-04

Developing digital platforms for the small scale extractive industry

4

HORIZON-CL4-2022-RESILIENCE-01-05

Technological solutions for tracking raw materials flows in complex supply chains

5

HORIZON-CL4-2022-RESILIENCE-01-06

Sustainable and innovative mine of the future

6

HORIZON-CL4-2022-RESILIENCE-01-07

Innovative solutions for efficient use and enhanced recovery of mineral and metal by-products from processing of raw materials

7

HORIZON-CL4-2022-RESILIENCE-01-08

Earth observation technologies for the mining life cycle in support of EU autonomy and transition to a climate neutral economy

1

HORIZON-CL4-2022-RESILIENCE-01-02:

Monitoring and supervising system for exploration and future exploitation activities in the deep sea **(RIA)**

Expected outcome:

Projects are expected to contribute to at least one of the following outcomes:

- Develop technologies and systems to continuously monitor environmental impacts and mitigation methods of deep sea exploration and future mining;
- Develop multi-scale systems to identify gaps on the relevant available environmental data needed to develop statistically robust baselines that take into account the three-dimensional and temporal natural variability of the marine environment;
- Provide technological and systemic solutions for forecasting potential environmental impacts of using the developed monitoring and mitigation methods.

EU contribution per project: EUR 14.00 million

Indicative budget of the call: EUR 14.00 million

Type of Action: Research and Innovation Action

TRL: Achieve 3-5 at the end of the project

Eligible countries: General rules apply

HORIZON-CL4-2022-RESILIENCE-01-03:

Streamlining cross-sectoral policy framework throughout the extractive life-cycle in environmentally protected areas **(CSA)**

Expected outcome:

Projects are expected to contribute to at least one of the following outcomes:

- Exchange of good practices in permitting procedures related to extractive activities that may have an impact in environmentally protected areas;
- Dissemination and exploitation of projects outputs is tailored for competent EU, national and regional authorities, industry and civil society in EU Member States.

EU contribution per project: EUR 2.40 million

Indicative budget of the call: EUR 2.40 million

Type of Action: Coordination and Support Action

TRL: -

Eligible countries: EU Member States, associated countries, OECD countries, African Union Countries, and MERCOSUR, CARIFORUM, and Andean Community

3

HORIZON-CL4-2022-RESILIENCE-01-04:

Developing digital platforms for the small scale extractive industry **(IA)**

Expected outcome:

Projects are expected to contribute to at least one of the following outcomes:

- Develop digital platforms (applications) addressing needs of small-scale operations, mining clusters and SMEs, to enable a transformative change in EU extractive industries ensuring EU raw materials autonomy, while protecting and restoring biodiversity, boost our resilience, fight climate change and recover from the COVID-19 crisis;
- Develop business models and operation models.
- Contribute to the digitalisation of the extractive industry.

EU contribution per project: EUR 5.00 million

Indicative budget of the call: EUR 15.00 million

Type of Action: Innovation Action

TRL: Achieve TRL 6-7 at the end of the project

Eligible countries: EU Member States, associated countries, OECD countries, African Union Countries, and MERCOSUR, CARIFORUM, and Andean Community

4

HORIZON-CL4-2022-RESILIENCE-01-05 :

Technological solutions for tracking raw materials flows in complex supply chains **(RIA)**

Expected outcome:

- Improve supply chain data transparency and traceability;
- Set up technological solutions for tracking raw material flows (material passports);
- Identify and address gaps in due diligence;
- Develop comparable criteria, reporting and audit approaches;
- Sustainable sourcing of raw materials.

EU contribution per project: EUR 13.50 million

Indicative budget of the call: EUR 13.50 million

Type of Action: Research and Innovation Action

TRL: Achieve 3-5 at the end of the project

Eligible countries: EU Member States, associated countries, OECD countries, African Union Countries, and MERCOSUR, CARIFORUM, and Andean Community

5

HORIZON-CL4-2022-RESILIENCE-01-06:

Sustainable and innovative mine of the future (IA)

Expected outcome:

- Reduce environmental impact of extractive and processing value chains;
- Develop demonstrators and pilot plants with a lower environmental impact;
- Develop sustainable and smart mining technologies for exploitation of EU mineral resources;
- Contribute to a more safe and environmentally friendly, resource- and production efficient sustainable mining;
- Develop methods, technologies and processes aiming for digitisation and automation of raw materials production.

EU contribution per project: EUR 12.00 million

Indicative budget of the call: EUR 36.00 million

Type of Action: Innovation Action

TRL: Achieve TRL 6-7 at the end of the project

Eligible countries: EU Member States, associated countries, OECD countries, African Union Countries, and MERCOSUR, CARIFORUM, and Andean Community

HORIZON-CL4-2022-RESILIENCE-01-07:

Innovative solutions for efficient use and enhanced recovery of mineral and metal by-products from processing of raw materials **(IA)**

Expected outcome:

- Increase process selectivity, broader range and higher recovery rates of valuable raw materials, particularly critical raw materials;
- Unlocking substantial reserves of new or currently unexploited/underexploited resources within the EU;
- Significantly increase economic performance in terms of higher material-, water-, energy- and cost-efficiency and flexibility in minerals processing, metallurgical or recycling processes;
- Significantly improve the health, safety and environmental performance of the operations throughout the whole life cycle which is considered, including a reduction in waste, wastewater and emissions generation and a better recovery of resources from generated waste;

EU contribution per project: EUR 12.00 million

Indicative budget of the call: EUR 36.00 million

Type of Action: Innovation Action

TRL: Achieve TRL 6-7 at the end of the project

Eligible countries: EU Member States, associated countries, OECD countries, African Union Countries, and MERCOSUR, CARIFORUM, and Andean Community

7

HORIZON-CL4-2022-RESILIENCE-01-08:

Earth observation technologies for the mining life cycle in support of EU autonomy and transition to a climate neutral economy **(RIA)**

Expected outcome:

Projects are expected to contribute to at least one of the following outcomes:

- Unlock the potential of Earth Observation technologies, including Copernicus, through the development of downstream products and services for the whole mining life cycle;
- Strength EU autonomy in the area of raw materials, while enabling a successful transition to a climate-neutral, circular and digital EU economy.

EU contribution per project: EUR 4.50 million

Indicative budget of the call: EUR 13.50 million

Type of Action: Research and Innovation Action

TRL: Achieve 3-5 at the end of the project

Eligible countries: EU Member States, associated countries, OECD countries, African Union Countries, and MERCOSUR, CARIFORUM, and Andean Community

Thank you



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