CRM Alliance
Critical Raw Materials

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205 – 1000 Brussels - Belgium
Tel.nr : +32 471.06.47.86 – www.criticalrawmaterials.org – info@crmalliance.com

Dear CRM-A Members,

Welcome to the May 2021 edition of the CRM-A's newsletter reporting on EU projects concerning CRMs and informing about developments under the EU's new research and innovation program, Horizon Europe. Besides this, we will also keep you updated on other funding opportunities and our CRM-A member, Beta Technology, will provide guidance on the first opportunities for CRMs in Horizon Europe projects.

Wishing you a pleasant reading!

European Parliament adopts Horizon Europe

On 27 April, during the Plenary, the European Parliament's ITRE Committee adopted the agreement with Council on the Horizon Europe regulation (Establishing Horizon Europe – laying down its rules for participation and dissemination (A9-0122/2021)), adding a political declaration with 677 votes to 5 and 17 abstentions.

They adopted the agreement with Council on the Horizon Europe specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation (A9-0118) with 661 votes to 5 and 33 abstentions.

vote on the Report on the proposal for a decision of the European Parliament and of the Council on establishing the specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation (A9-0118).

The European Commission has again delayed the launch of the work programmes at least until the end of May.

In the meantime, the Commission launched calls for proposals for the European Research Council and the European Innovation Council, taking advantage of the clause that allowed researchers to apply for funding before the Parliament vote.

Column: First Opportunities for CRM Related Horizon Europe Project

With publication of the work programmes eagerly awaited, the drafts* that are available offer detail on what to expect. Looking specifically at Pillar 2, Cluster 4 'Digital, Industry and Space', two calls are very relevant to CRMs.

The tables below summarise the key points but note detail could be subject to change when the work programme is published.

Topic	HORIZON-CL4-2021-RESILIENCE-01-06: **Innovation for responsible EU sourcing of primary raw materials, the foundation of the Green Deal (RIA)**
Type of action	Research and Innovation Action (RIA)
Indicative budget for the topic	EUR 30 million
Expected EU contribution per project	EUR 7.5 million
Number of projects expected to be funded	4
Special conditions	Some exceptions on participating countries, see work programme text for details
Deadline	23rd September 2021

* Source: https://ec.europa.eu/transparency/expert-groups-register/screen/meetings/consult?do=groupDetail.groupMeeting&meetingId=24499

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205 – 1000 Brussels - Belgium
Tel.nr : +32 471.06.47.86 – www.criticalrawmaterials.org – info@crmalliance.com

Topic	HORIZON-CL4-2021-TWIN-TRANSITION-01-20: **Reducing environmental footprint, improving circularity in extractive and processing value chains**
Type of action	Innovation Action (IA)
Indicative budget for the topic	EUR 34.10 million
Expected EU contribution per project	EUR 12 million
Number of projects expected to be funded	3
Special conditions	Some exceptions on participating countries, see work programme text for details
Deadline	23rd September 2021

* Source: https://ec.europa.eu/transparency/expert-groups-register/screen/meetings/consult?do=groupDetail.groupMeeting&meetingId=24499

In addition to Cluster 4, it is worth looking at the other clusters in Pillar 2, as there may be additional opportunities relevant to CRMs. For example, in Cluster 5 'Climate, Energy and Mobility', HORIZON-CL5-2021-D2-01-01: Sustainable processing, refining and recycling of raw materials (Batteries Partnership).

In addition to the summary information provided above, the draft work programmes also provide you details on the expected outcomes and scope of each topic. With this information and publication of the work programmes imminent it is feasible to start developing your proposals now.

If you would like to find out more about how Beta can support your project proposals, contact Richard Wrigley: richard.wrigley@betatechnology.co.uk

Updates on CRM related projects

The following projects' recent developments have been identified as particularly interesting for Members:

- **CEWASTE** published their final report on CRM recycling
- **Battery 2030** will participate in a joint workshop on 8 June
- **LISA** hosted an online innovation workshop on 30 April
- **TARANTULA** participated in an online event on 27 April
- **E-MAGIC** shared an article sharing on the project's success
- **MIREU** published an article on the intensified collaboration of partner regions
- **NEMO** hosted an event on 27 April

As always, in case of interest concerning a specific project not included in the present newsletter or not funded under Horizon 2020, members are more than welcome to submit their requests to the Secretariat.

Index

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205 – 1000 Brussels - Belgium
Tel.nr : +32 471.06.47.86 – www.criticalrawmaterials.org – info@crmalliance.com

1. CEWASTE

Start date: 01/11/2018 End date: 31/10/2022

The CEWASTE project "Voluntary Certification Scheme for Waste Treatment" aims to develop and validate a voluntary certification scheme for collection, transport and treatment facilities of waste electric and electronic equipment (WEEE) and waste batteries, containing significant amounts of valuable CRMs.

CEWASTE will address:
(i) Specific challenges to secure the sustainable access to CRMs for the EU economy and objectives set by the EU action plan for the Circular Economy;
(ii) Issue of illegal trade of wastes within the EU and to non-EU countries;
(iii) Need to support the development of environmentally and socially sound recycling systems globally.

The first round of public consultations on the draft of the voluntary certification scheme was concluded. However, the pilot phase, which is a crucial phase where audits provide a practical examination of the scheme, is postponed due to the COVID-19 outbreak. Normally, a second round of public consultations would take place during June-July with the aim to have a final draft of the voluntary certification scheme ready by September-October. However, now that the pilot phase is postponed, it is unsure that this deadline will be attained.

The project is well ongoing and has already entered its pilot audit phase in facilities in Italy, Switzerland, Portugal and Spain.

CEWASTE shared the recording and slides of its last event. 200 stakeholders learned about the work and results of the project and discussed the future of critical raw material CRM recycling. You can watch the event here and access the slides here.

Website: http://www.cewaste.eu

Important update **CEWASTE published their final report. Within the report, CEWASTE argues that the EU should make recycling mandatory for several electrical and electronic products that contain critical raw materials. You can find the report here.**

2. FineFuture

Start date: 01/06/2019 End Date: 31/05/2022

FineFuture is an EU funded project aiming at creating new scientific knowledge to enable the development of ground breaking technologies to exploit the fine particle fractions. Separating very fine particles is important for the valorisation of multiple mineral resources (e.g. nickel, kaolin, feldspar, talc and magnesite) and will help securing both global sales by European companies and the production of Critical Raw Materials (CRMs) within Europe.

FineFuture's new developed technologies recovering fine particle systems would not be restricted to a special deposit class but the research will pave the way towards applicability for all classified CRMs. The FineFuture network is convinced from their experience, expertise and stakeholder knowledge that hetero-coagulation separation technologies, in particular froth flotation, will remain the key technologies for mineral particle processing. Yet, flotation needs to be entirely re-engineered for the separation of very fine particles of the aforementioned resources at large scale through cutting-edge technological investigations guided by industrial partners. Unique aspects of the research work are a parallel dialog with the wider public and professional stakeholders not only to inform but also to receive feedback for a better applicability and societal trust.

The expected results will lead to drastically reduced loss of resources, the utilization of new resources and more competitiveness through much higher energy efficiencies.

FineFuture attended the largest global mining convention Prospector Developer Association (PDAC) in Canada. You can find more information here.

Website: https://finefuture-h2020.eu

3. Battery 2030

Start date: 01/03/2019 End date: 29/02/2022

The BATTERY 2030+ initiative will be based on a multi-disciplinary and cross-sectorial approach to bring in all the necessary skills for developing future European battery roadmap while addressing a wide range of strategic applications. To achieve this goal, a team of 17 partners, leaders in their fields, from 9 EU member states will join efforts.

Three specific objectives have been defined: 1) BATTERY 2030+ roadmap establishment 2) Propose R&D actions and 3) Secure official stakeholder commitments. Related WPs, tasks, milestones and risks are considered to achieve these objectives.

The BATTERY 2030+ initiative will act as a cornerstone in the construction of a long-term research road on batteries, as the long-term initiative mentioned in the EBA strategic action plan. This new initiative will supply the European battery eco-system with completely new disruptive technologies (Low TRL). BATTERY 2030+ aims to invent the sustainable batteries of the future, to enable Europe to reach the goals of climate neutrality envisioned in the EU Green Deal.

The BATTERY 2030+ long-term research roadmap outlines the actions needed to invent the sustainable batteries of the future and identifies three major research themes:

1. Accelerated discovery of battery interfaces and materials
2. Integration of smart functionalities
3. Manufacturability and recyclability as cross-cutting areas

Download the manifesto here.
Download BATTERY 2030+ initiative's flyer & poster.
Access their explanatory video here.
More recent updates are available here.

Website: https://battery2030.eu

Important update **Battery 2030 will participate in the "Online Joint Workshop: Digital approach in Battery development". The workshop will take place on June 8th, 2021 from 13:30 – 16:00. You can find the program here and register here.**

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205– 1040 Brussels - Belgium
Tel.nr : +32 (0)2 21 374 21 – www.crmalliance.eu – info@crmalliance.eu

4. e.THROUGH

Start date: 01/01/2018 End date: 31/12/2021

Objective: e.THROUGH aims at transforming the EU's dependence on CRMs into a strategic strength for Europe, contributing towards declassifying some CRMs, as tungsten, indium and gallium by:

- Promoting new trends in the characterization and exploration of mineral deposits
- Mapping CRMs between EU mining regions
- Gaining knowledge on innovative processes for the secondary recovery of CRMs
- Redesigning construction materials, closing loops, strongly supporting waste minimization
- Developing Life Cycle Assessment (LCA) for the evaluation of global environmental impacts
- Transferring newly generated knowledge to stakeholders, both for policy development and standardization, and for shaping responsible behaviours

e.THROUGH is an intersectoral and interdisciplinary consortium of EU & Third Country partners of leading institutions that see waste as a resource to recover CRMs, influencing the whole value chain.

Website: https://ethrough.wordpress.com/

5. Tech4win

Start date: 01/01/2019 End date: 30/06/2022

Objective: Tech4win proposes a very innovative transparent photovoltaic (PV) window concept that is based on the adoption of a tandem inspired structure combining an inorganic UV selective multifunctional coating (including UV filtering and UV selective PV functionalities), with an organic IR selective PV device.

This will allow fully exploiting the IR efficiency and transparency potential of organic based solutions together with the robustness and stability of inorganic thin film concepts, combining sustainable and industrial compatible technologies with demonstrated potential for cost reduction, and avoiding the use of critical raw materials to ensure sustainable mass deployment.

Tech4Win has published its list of deliverables.

Website: http://www.tech4win.eu

6. LISA

Start date: 01/01/2019 End date: 31/07/2022

Objective: Li-ion batteries are still the limiting factor for mass scale adoption of electrified vehicles and there is a need for new batteries that enable EVs with higher driving range, higher safety and faster charging at lower cost. LiS is a promising alternative to Li-ion free of critical raw material (CRM) and non-limited in capacity and energy by material of intercalation.

LISA proposes the development of high energy and safe LiS battery cells with hybrid solid state non-flammable electrolytes validated at 20Ah cell level according to EUCAR industrial standards for automotive integration.

LISA will solve specific LiS bottlenecks on metallic lithium protection, power rate, and volumetric energy density; together with cost the main selection criteria for EV batteries. The sustainability of the technology will be assessed from an environmental and economic perspective.

Moreover, the outcome of the project in terms of new materials, components, cells, and manufacturability will be transferable to other lithium-anode based technologies such as Li-ion and solid state lithium technologies. As

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205– 1040 Brussels - Belgium
Tel.nr : +32 (0)2 21 374 21 – www.crmalliance.eu – info@crmalliance.eu

such, LISA will have a large impact on existing and next-generation EV batteries, delivering technology with higher energy density beyond the theoretical capacities of chemistries using CRM – i.e. natural graphite and cobalt - or silicon-based chemistries inherently limited by their manufacturability.

The LISA roll-up has been published. Download it here.
LISA leaflet is also available here.
Their first newsletter is available here.

Website: https://www.lisaproject.eu

Important update **LISA hosted an online innovation workshop about "Common Challenges of Lithium-Based Batteries" on April 30. You can watch the webinar here.**

7. TARANTULA – Recovery of Tungsten, Niobium and Tantalum occurring as by-products in mining and processing streams

Start date: 01/06/2019 End date: 31/05/2023

Objective: The extraordinary properties of refractory metals, the unlikeliness of their future substitution and their use in booming industries will sustain a high EU demand for tungsten (W), niobium (Nb) and tantalum (Ta). All three are classified as Critical Raw Materials (CRM) by the European Commission (EC) and fractions of these indispensable metals are dissipated as by-products in mining waste streams as well as process scrap.

To stimulate their recovery from such complex, low-grade resources, TARANTULA will develop a suite of cost-effective, scalable and eco-friendly – bio-, hydro-, iono-, solvo-, pyro- and electro-metallurgical – processes with high selectivity and recovery rates. These novel technologies, each representing an alternative for one or more process steps of state-of-the-art (SoA) processing lines, will form new routes towards market-ready metals, metal oxides and metal carbides.

Finally, TARANTULA will blueprint tailored Communication, Dissemination and Civil Society Engagement strategies with respect to obtaining and maintaining the "Social License to Operate" for future heavy-duty metallurgical processing.

In contribution to the 5th International Symposium on Enhanced Landfill Mining, Dr. Peter Tom Jones shared a video entitled The Dark Side of the Circular Economy. The video focusses on a major blind spot of the Circular Economy Action Plan: landfilled waste of the past. To access the video and information about the event, please click here.

TARANTULA published a short video called "Recycling the strongest metals" which serves as a short presentation of the project and its objectives. You can watch it here.

You can find more recent updates here.

Website: https://h2020-tarantula.eu

Important update **TARANTULA participated in the on-line event "Can the recycling of mining waste become a new business?" on 27 April. You can read the report here.**

8. BIORECOVER

Start date: 01/06/2019 End date: 31/05/2023

Objective: The aim of BIORECOVER is the R&D of a new sustainable & safe process, essentially based on biotechnology, for selective extraction of a range of Critical Raw Materials, from relevant unexploited secondary

& primary sources:
(i) Rare Earths from Bauxite Residue from Greece (MYTILINEOS)
(ii) Magnesium from Mg wastes of low grade minerals and calcination by-products- from Spain (MAGNA)
(iii) Platinum Group Metals from flotation tailings from South Africa (UWITS) & PGM slags, dusts and press cake from United Kingdom (JM)

The awareness, trust & acceptance of the society about the importance of raw materials will be addressed by an awareness campaign and public perception studies. The project results will contribute to EU bio-mining knowledge (RMIS) and a communication with other key project will be also set up.

More recent updates are available here.

Website: https://biorecover.eu/

9. SecREEts

Start date: 01/06/2018 End date: 31/05/2022

Objective: Rare Earth Elements (REEs) are critical and non-substitutable raw materials with high economic importance for European industry, as they are crucial components for a broad range of advanced products. The main goal of the SecREEts project is to establish a stable and secure supply of critical REEs based on sustainable extraction from European apatite sources used in fertiliser production. The main objective of the project is to demonstrate a new integrated value chain for the optimal extraction, refining and production of REEs in Europe.

SecREEts held its 24M Consortium meeting. They discussed the overall progress of the project and announced a 2-3 month delay due to COVID-19. More information is available here.

Recent updates on the project are available here.

Website: http://reetec.no/secreets/

10. ION4RAW

Start date: 01/06/2019 End date: 31/05/2023

Objective: The Ion4Raw project proposes an energy-, material- and cost-efficient new mineral processing technology to recover by-products from primary sources by means of innovative Deep Eutectic Solvent (DES) ionic liquids and advanced electrorecovery as an only step.

A joint recovery of by-products from primary sources which belong to the Cu-Ag-Au group is proposed. Most of the targeted by-products elements are Critical Raw Materials as bismuth (Bi), germanium (Ge), indium (In), cobalt (Co), platinum (Pt) and antimony (Sb). Accompanying major product metals, e.g. copper (Cu), silver (Ag) and gold (Au), may also be recovered by this process.

Ion4Raw project has a very promising business potential since it will allow mining and mineral processing companies to fully exploit by-product potential by recovering them at their own facilities. This will contribute to unlocking the full potential of Europe's inner wealth by converting new and currently unexploited resources into reserves.

Website: http://www.ion4raw.eu

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205– 1040 Brussels - Belgium
Tel.nr : +32 (0)2 21 374 21 – www.crmalliance.eu – info@crmalliance.eu

11. BioFlot – Critical metal recovery from industrial wastewater by bioflotation using surface active soderphores

Start date: 01/10/2019 End date: 30/09/2021

Objective: BioFlot aims to explore the use of amphiphilic siderophores (marinobactins) from Marinobacter sp. as highly specific extractants for recovery of CRMs (In, and Ga) from secondary sources (industrial wastewater) by means of bio-flotation technique.

The project proposes to employ the marinobactins as green flotation extractants in bioflotation technique for metal recovery and subsequent extraction and optimization of process parameters for maximum selective binding of metals and marinobactins so as to increase the flotation yield, and further optimization for separation of marinobactin from metals in flotation product to regenerate marinobactin and recover target metal.

The next phase of the project would involve semi-continuous and continuous experiments to scale-up the best possible configuration selected during the batch study. Finally, an economic evaluation will be carried out to support the commercialization of the developed technology.

This project will develop a novel and eco-friendly recycling process which will increase the recycling rates, reduce the waste and proliferate the circular economy in EU and also contribute in reducing its CRM dependency on non-EU countries. It will also train the experienced researcher in developing green technology and soft skills and make the host eminent in innovative biotechnology.

Website: Initial phase

12. E-MAGIC – European Magnesium Interactive Battery Community

Start date: 01/01/2019 End date: 31/12/2022

Objective: The European Magnesium Interactive Battery Community (e-magic) is developing new energy storage technologies that involve magnesium. Though this project, e-magic promotes the potential use of magnesium in battery technologies and highlights it as an emerging energy storage unit.

Main objectives:

1. Develop a disruptive scientific and technical approach for new generation high energy density and environmentally friendly rechargeable Mg batteries (RMB)
2. Reinforce an European community around magnesium-based battery technologies as emerging electrochemical energy storage system establishing an active scientific relationship of the community with the rest of the world

Work packages:
WP1 → Project management
WP2 → Anode and Electrolyte System
WP3 → Insertion Materials
WP4 → Conversion Materials
WP5 → Technology validation
WP6 → Environmental analysis and LCA
WP7 → Dissemination, Exploitation and Community building

More information on the work packages is available here.

Website: www.e-magic.eu

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205– 1040 Brussels - Belgium
Tel.nr : +32 (0)2 21 374 21 – www.crmalliance.eu – info@crmalliance.eu

Important update **E-MAGIC shared an article on the project's feasibility of rechargeable magnesium batteries at pouch cell level. You can read the article here.**

13. SCRREEN2 – Solutions for Critical Raw Materials – a European Expert Network

SCRREEN, the project aiming at gathering European initiatives, associations, clusters, and projects working on CRMs into a long-lasting Expert Network on Critical Raw Materials, including the stakeholders, public authorities and civil society representatives, has received a second mandate! SCRREEN2 will kick-off in autumn of this year**.**

SCRREEN1 aimed to improve the CRM strategy in Europe by (i) mapping primary and secondary resources as well as substitutes of CRMs, (ii) estimating the expected demand of various CRMs in the future and identifying major trends, (iii) providing policy and technology recommendations for actions improving the production and the potential substitution of CRM, (iv) addressing specifically WEEE and other EoL products issues related to their mapping and treatment standardization and (v) identifying the knowledge gained over the last years and easing the access to these data beyond the project.

More information will follow soon!

Website: http://scrreen.eu/

14. SEA4VALUE – Development of radical innovations to recover minerals and metals from seawater desalination brines

Start date: 01/06/2020 End date: 31 May 2024

SEA4VALUE aims to deliver a Multi-mineral Modular Brine Mining Process (MMBP) for the recovery of critical metals and minerals from brines in sea-water desalination plants. They will try to recover magnesium, scandium, vanadium, gallium, indium, boron and other minerals and metals from seawater.

SEA4VALUE is gathering stakeholders that represent the whole value chain, from water infrastructure operators to the processing industry. They will work together to proof that the measures presented by the SEA4VALUE project are competitive, technically feasible, and sustainable and that they contribute to the circular economy.

More information on the project is available here.

Website: www.sea4value.eu

15. MIREU – Mining and Metallurgy Regions of EU

Start date: 01/06/2018 End date: 31/05/2022

Objective: The MIREU project aims to establish a network of mining and metallurgy regions across Europe with a view to ensure the sustained and sustainable supply of mineral raw materials to the EU. The network will help the regions to share knowledge and experiences when facing the challenge to establish and maintain an extractive industry.

The project will develop a shared knowledge base, which will consider the region-specific geographic and economic features, cultural, societal and language diversity, and their historical developments.

Further, MIREU will facilitate an exchange between all interested stakeholders in the regions, namely regulatory authorities, political and administrative bodies, development agencies, mining companies, non-government

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205– 1040 Brussels - Belgium
Tel.nr : +32 (0)2 21 374 21 – www.crmalliance.eu – info@crmalliance.eu

organisations, as well as the public. Guidelines and recommendations for actions to be taken to foster a sustained and sustainable development of the extractive industries will be developed in close co-operation with a range of selected regions from the European Union.

View MIREU work packages and relevant updates here.

Website: https://www.mireu.eu

Important update **MIREU published an article on the collaboration in East and North Finland through MIREU & REMIX. You can read the article here.**

16. ERA-MIN 2 – ERA-NET Cofund on Raw Materials

Start date: 01/12/2016 End date: 30/11/2021

Objective: ERA-MIN 2 is public-public partnerships based on the ERA-NET Cofund scheme under Horizon 2020. ERA-MIN 2 aims to implement a European-wide coordination of research and innovation programs on raw materials to strengthen the industry, competitiveness and the shift to a circular economy.

The objective of the ERA-MIN 2 is to strengthen the coordination of national and regional research programs in the field of non-energy non-agricultural raw materials by implementing several activities.

All recent updates on ERA-MIN 2 are available here.

Website: https://www.era-min.eu

17. ERA-MIN 3

Objective: ERA-MIN 3 builds upon ERA-MIN 2 and aims to continue strengthening the mineral raw materials community through the coordination of research and innovation (R&I) programmes on non-energy, non-agricultural raw materials (metallic, construction, and industrial minerals).

The project will contribute, thus, to the objectives of the EIP on Raw Material's Strategic Implementation Plan and the EU Circular Economy Action Plan, in support of the EU Raw Materials Initiative, the UN sustainable development goals and the European Green Deal.

The main activities of ERA-MIN 3 will be the organisation and funding the EU Co-funded ERA-MIN Joint Call 2021, to be launched on 15th January 2021 and which will count with an indicative budget of €19 Million.

Website: https://www.era-min.eu

18. NEMO

Start date: 01/05/2018 End date: 31/10/2022

Objective: NEMO aims to develop, demonstrate and exploit new ways to valorise sulphidic mining waste. Sulphidic mining waste from the production of Cu, Pb, Zn and Ni represent the largest volume of extractive waste in Europe. When these "tailings" are poorly managed, they may cause severe environmental problems such as acid mine drainage. The NEMO project aims to transform the "extractive-waste problem" into a "resource-recovery opportunity" as 'tailings" still contain CRMs.

CRM Alliance c/o Ridens Public Affairs – Rue Belliard 205– 1040 Brussels - Belgium
Tel.nr : +32 (0)2 21 374 21 – www.crmalliance.eu – info@crmalliance.eu

NEMO conducts two case studies in Finland and their research is composed out of four core science and technology work packages in which four pilots are developed to demonstrate the various aspects of the conversion of sulfidic residues to metals, minerals, cement and building products.

Core work packages:
WP1 → Innovative bioleaching
WP2 → Tank bioleaching
WP3 → Metal and mineral recovery
WP4 → Cleaned mineral residue upcycling

These four core work packages are supported by five additional work packages:
WP5 → Aims the integration of the four into a near-zero waste pilot for processing of sulphidic mining residues
WP6 → Performs a sustainability analysis of the two case studies using life-cycle analysis, life-cost analysis and social life assessment
WP7 → Supports clustering activities with related projects
WP8 → Studies the NEMO stakeholder engagement and supports in communication dissemination and exploitation of NEMO results
WP9 → Provides the management support of the projects

You can watch the presentation of EU NEMO project in this short video.

Website: www.h2020-nemo.eu

Important update **NEMO hosted the event "Can the recycling of mining waste become a new business?" on 27 April. You can find the summary here.**

19. Dig_IT – Platform for the Sustainable Digital Mine of the Future

Start date: 01/05/2020 End date: 30/04/2024

Objective: The mining industry has proven its efficiency and its essentiality to develop economies in the past. Now, the sourcing of raw materials will need the support of technologies to continue. Dig_IT is a project that aims at helping the mining industry embrace the digital transformation. To do so, Dig_IT will develop a smart industrial online platform. The data will be collected from sensors at three levels: human, assets, and environment.

Website: Initial phase

20. AlSiCal - Towards a greener mineral and metal industry in Europe

Start date: 01/09/2019 End date: 31/08/2023

Objective: Make the minerals and metals industry more sustainable and more environmentally friendly. The project will research, develop and eliminate the risks of an essential concept which is the patented Aranda-Mastin (AM) technology. This technology allows the co-production of three essential raw materials (alumina, silica and precipitated calcium carbonate), using new resources - eg. anorthosite, available in abundance worldwide - while generating ZERO Bauxite Residue and ZERO CO2. The current production of these raw materials is far from environmentally friendly. They are obtained through traditional processes generating significant CO2 emissions, and bauxite residues in the case of the production of alumina from bauxite by the Bayer process.

Website: www.alsical.eu