# German Federal Ministry of Education and Research (BMBF)

## Announcement to fund international junior research groups that help meeting skill requirements in the exploration, extraction and processing of primary raw materials – EGARoh_Junior

### 1 Funding aim and purpose

#### 1.1 Funding aim

The supply of raw materials, in particular critical raw materials such as lithium, nickel, cobalt or rare earths, is gaining in importance in the face of geopolitical crises and strong dependence on imports. The European Union adopted the Critical Raw Materials Act[1] in 2024 to secure its raw materials supply over the long term. The Act sets out objectives for the entire value chain of strategic raw materials and its diversification. For example, no more than 65% of EU raw material imports should come from a single country. This is to reduce dependencies and to increase supply security. To support this, the EU enters into strategic raw materials partnerships with selected partner countries worldwide.

In order to actively shape international raw materials policy, the BMBF intends to provide greater support for excellent young researchers and in this way broaden the skills base in the field of mining and raw materials research. At the same time, the BMBF wants to make a visible contribution to intensifying and deepening international cooperation in a joint effort with strategic partner countries worldwide. The aim is to establish international junior research groups at public and state-recognized higher education institutions, non-university research institutions, executive agencies and the geological services of the States (*Bundesländer)* in Germany. The junior research groups must cooperate with research institutions in one or more strategic partner countries in the field of raw materials and involve young researchers from these countries. The countries to be considered are those with which the EU and/or Germany have concluded a strategic raw materials partnership, particularly in Africa and South America.[2] Exceptions are possible in justified individual cases.

Funding will be provided for individual projects of international junior research groups which address topics along the primary raw materials value chain ranging from exploration to extraction to processing.

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[1] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/critical-raw-materials-act_en#overview-of-the-critical-raw-materials-act

[2] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

**Funding priority 1: Development and testing of innovative low-impact technological approaches for the exploration of deposits:**

- Development of exploration-relevant models to enable the understanding and interpretation of the genesis of mineral deposits.
- Drawing-up of exploration schemes to map hitherto unknown raw materials deposits.
- Development of new, low-impact technologies for local, regional and deep exploration of raw materials potential (including satellite- and air-based remote sensing methods).
- Development of partially and fully autonomous exploration techniques (e.g. robotic vehicles, unmanned aerial vehicles (UAV)) which enable the non-invasive ground- and/or air-based exploration of unexploited deposits while guaranteeing utmost safety even under extreme circumstances (depth, climatic conditions, etc.). This also includes the monitoring of safety-relevant parameters (e.g. the monitoring of radioactivity in the context of rare earth element deposits, deposit water, seismic activity).

**Funding priority 2: Development of innovative technological approaches for resource-efficient and climate-neutral raw materials mining:**

- Development and use of intelligent and eco-efficient smart mining technologies (e.g. teleoperated robotic systems, autonomous mining technologies) for surface and underground raw materials mining.
- Automation and digitalization of mining processes for greater efficiency and safety in mineral raw materials mining.
- Development of methods for real-time materials recognition.
- Reduction of carbon emissions and utilization of renewable energy.

**Funding priority 3: Development of new technological approaches for sustainable primary ore processing:**

- Increasing resource efficiency in mining with the aim of zero-waste mining through optimal use of secondary resources from mining residues and waste following a circular approach.
- Development of optimized processing techniques to increase yield while at the same time reducing the use of energy and chemicals.
- Optimization and automation of existing processes and processing methods.
- Processing/metallurgy interface optimization.

1.2 Funding purpose

In order to achieve these objectives, the funding line "International junior research groups to help meet the skills requirements in the exploration, extraction and processing of primary raw materials – EGARoh_Junior" focuses on the funding instrument of junior research groups.

Funding will be provided to support outstanding early-career researchers in these groups for a period of up to five years, thus enabling them to independently develop and implement a longer-term research project on issues of primary raw materials exploration, extraction and processing. Junior research group leaders will be able to build their own profile, develop leadership skills and qualify for a subsequent career in both science and industry.

The junior research groups must cooperate with research partners and ideally also with industry partners from strategic partner countries in the field of raw materials (see above). Doctoral students from these countries should collaborate in the junior research groups.

Furthermore, it is expected that the foreign partners from science and industry participate in the work of the junior research groups with their own funds. The contribution of the foreign partner/s and the clear added value of cooperation must be described in the funding application, and in addition suitable evidence (in the form of a Letter of Intent of the foreign partner institution) must be provided and a binding cooperation agreement concluded after the project has started.

## 2 Object of funding

The BMBF intends to fund international junior research groups working on issues along the primary raw materials chain (see section 1.1 Funding aim). These must be set up under the responsibility of highly qualified early-career postdocs (see section 4, information on group leaders). Three to five PhD students should work on the group led by the postdoc. The junior research groups with international membership must be established in Germany at research institutions, executive agencies or the geological services of the *States (Bundesländer)*. The junior research groups must address shared issues in close cooperation with research institutions from countries rich in raw materials.

Funding is provided for project posts to enable the recruitment of junior research staff as group members; in exceptional cases, their employment can also be financed via a fellowship (see section 4). Students without a Master's degree can be employed as academic assistants and be involved in networking activities such as summer schools.

If, in individual cases, it proves impossible for a foreign young researcher to be employed by a German university, the possibility of awarding a research fellowship may be considered as an alternative.

The junior research groups are funded for a period of five years.

Funding is provided to cover R&D expenditure under individual application-oriented, precompetitive projects which focus on technology development and innovation by international junior research groups for the exploration, extraction and processing of primary raw materials.

## 3 Funding recipients

Public and state-recognized higher education institutions, non-university research institutions, executive agencies and the geological services of the *States (Bundesländer)* with headquarters or a branch in Germany are eligible for funding.

The research projects must be carried out as non-commercial activities of universities or non-university research institutions or the above-mentioned institutions.

Under these funding regulations, the international partners can also receive federal funding as secondary recipients. In this case, the German project coordinator and funding recipient (primary recipient) will receive funding including the grant that has to be transferred to the secondary recipient. The foreign partners (secondary recipients) must conclude a contract under private law with the German project coordinator.

## 4 Special prerequisites for funding

The following applies to this funding format:

The junior research group and its research project proposed for funding must be established at a university, non-university research institution, executive agency or one of the geological services of the States (*Bundesländer)* with headquarters or a branch in Germany. The hosting institution must provide the group with the working facilities required for carrying out the project (including the necessary premises, research literature and infrastructure as well as further support measures such as advanced training) as basic resources and support the group leader in all project-related matters.

Further aspects:

In justified exceptional cases and where this cannot be done by the foreign partner institution, the BMBF is willing to allow transfer of the grant to the foreign institution[3] to enable a local researcher at the partner institution to become firmly involved in the international junior research group as principal cooperation partner, thereby strengthening scientific exchange even further. Events or research stays with the partner institutions can also be financed in this way if so required. The necessity must be explained. For relevant provisions see section 3 Funding recipients.

The funding recipients undertake to conclude a cooperation agreement with their foreign partner institution(s) after the project has started.

**Special prerequisites for funding of a junior research group**

Group leader:

Junior research group leaders must have proven their ability to conduct independent research through the completion of a doctoral degree and must demonstrate their aptitude to lead a working group. They should have passed their last doctoral examination not more than four years prior to submission of the project outline.

Supervision of doctoral students:

– It is expected that the group leader will be explicitly allowed to supervise doctoral students and actively contribute to teaching. This must be set out in the application.

[3] See information leaflet for project funding https://www.bva.bund.de/SharedDocs/Downloads/DE/Aufgaben/ZMV/Zuwendungen_national/merkblatt_weiterleitung.pdf?__blob=publicationFile&v=6

– Should it not be possible to assign the task of independent supervision of the doctoral students to the group leader (including the evaluation of doctoral theses), the application must provide details about how such supervision will be guaranteed.

## 5 Type, scope and rates of funding

Funding will be awarded in the form of non-repayable project grants.

The basis for calculating the grants for universities, non-university research institutions, executive agencies and the geological services of the States (*Bundesländer)* which do not fall into the category of economic activities.

The project-specific additional funding requirement can be met in whole or in part where it is clearly distinguishable from the basic resources of the applicant institution. Expenditure on human resources needed by the junior research group to carry out the research project is eligible for funding:

– One research post for group leader (postdoc)

– Up to five posts for doctoral students

– Up to five student or academic assistants.

Travel expenses:

– Project-related travel to working meetings, workshops, summer schools, conferences in Germany and the above-mentioned cross-cutting meetings (see section 4).

– Conferences abroad with evidence provided of the active contribution made (a maximum of one conference per group member and year is eligible for funding).

Funds for equipment and investments as required:

– Participation of guest researchers

Funds for contracts with third parties:

– Project-related awarding of contracts in justified cases

## 6 Submission and selection of project outlines

In the first phase, the prospective junior research group leaders must submit a project outline to PtJ Project Management Jülich in German.

by 31 August 2025

The project outline must be self-explanatory and allow evaluation without further enquiry. The project outline of a maximum 12 pages including cover sheet (A4, Arial 11, 1.5-spaced, margin 2 cm minimum, no annexes permitted) must be structured as follows:

Individual R&D projects

Cover sheet: Topic of the envisaged project; name of the junior research group leader (including phone number and email); information regarding total budget, requested funding and project period; tabular overview of the envisaged collaboration partners (name and type of institution)

I. Goals
   a) Motivation and overall objective of the project
   b) Relevance of the project to the funding goals of the funding measure
   c) Cooperation with partner institutions/companies in countries rich in raw materials (see above)
   d) Identification of measurable targets

II. Approach
   a) Description of problem relevance and current situation, comparison with the latest scientific and technological developments as well as previous own work
   b) Description of the planned research activities, communication approach if applicable
   c) Rough work and time schedule (overview)

III. Utilization of results/utilization plan
   a) Prospects of economic and scientific-technical success (market and job potential or contribution to skilled labour market)
   b) Potential for scientific and commercial follow-up (utilization of results including time horizon)

IV. Impact
   a) Expected impact of primary raw materials exploration and mining for securing raw materials supplies
   b) Expected impact on value creation in Germany
   c) Expected added value and impact of international cooperation

V. Project structure
   a) Brief description of the participating (associated) partners and their expertise
   b) Cooperation (description of the interdisciplinary and transdisciplinary cooperation of the participating (associated) partners that are of relevance for project implementation and/or the application of the results)

VI. Resource planning
   a) Specification of the planned expenditure/costs and contribution of own or third-party funds
   b) Provision of information as well as evidence (written declaration, LoI) regarding the contribution of resources by foreign research and industry partners
   c) Necessity of funding; possibility to obtain funding from the European Union

The BMBF will be advised by external experts in the evaluation of the outlines and applications.

The project outlines received will be evaluated on the basis of the following criteria:

Evaluation criteria for individual R&D projects

a) Contribution to the objectives of the funding announcement: Compatibility with the thematic area of the call, relevance of the problem
b) Expected impact of the junior research group on the development of expertise and the establishment of links with international partner institution/companies
c) Level of innovation: Originality and quality of the approach and/or technology, novelty of the problem and potential solution, research risk, feasibility of improving links with the partner institution and industrial companies
d) Scientific and technical quality of the solution: Quality and efficiency of methodology, interdisciplinarity, knowledge gain
e) Coherence and consistency of the utilization plan: Expected results, application potential and implementation plan, dissemination and transfer of results
f) Qualification of the consortium: Profile and performance of the international partners involved, interdisciplinary and transdisciplinary cooperation, level of involvement of companies in Germany and abroad
g) Quality and appropriateness of work, time and resource planning.

Suitable project ideas will be selected for funding on the basis of the above criteria and evaluation. Applicants will be informed in writing of the result of the selection.

The project outlines and any other documents submitted in this phase of the procedure will not be returned.

**Submission of formal applications for funding and decision-making procedure**

In the second phase of the procedure, the applicants whose project outlines have been given a positive evaluation will be invited to submit formal applications.

The easy-Online electronic application system must be used for drafting formal funding applications (taking into account the requirements set out in the Annex). This portal enables the electronic submission of the application using the TAN procedure or a qualified electronic signature. Submission of an application in paper form is also possible.

Formal applications must be submitted by each junior research group. At the same time, a detailed project description must be submitted which builds on and specifies the project outline. In particular, the objectives and research issues must be stated clearly, and the work programme, cooperation with international partners as well as the resource, time, milestone and utilization planning must be specified. The financial plan must be itemized and explained with comments in the project description. Partner descriptions of a maximum one page per partner must be annexed to the project description. It is expected that any requirements and suggestions issuing from the evaluation will be addressed in this context. The project management organization involved will provide applicants with further details and information concerning the application documents when inviting them to submit formal applications.

The applications received will be reviewed and evaluated according to the following criteria:

- Fulfilment of any suggestions and requirements issuing from the expert evaluation of the project outlines
- Quality of utilization plans, and result and sustainability of international cooperation
- Project management (effectiveness and efficiency of the planned organization of project activities)

After final consideration of the application, a funding decision will be taken on the basis of the above criteria and evaluation.