

NordMin call on Sustainable raw materials sector

2013

CALL TEXT AND CALL PROCEDURES

1. INTRODUCTION

Within the Nordic countries, the mining industry and its related industries are important drivers for the development of national, regional and local economy. The mining industry in the Nordic region forms the largest metal producing region and is the technology leader in Europe, but is not yet very coordinated.

Europe's dependence on metals and minerals for sustainable growth is high. The European Commission is working to address the security of supply of metals and minerals for the European industry. In the Nordic region the question about security of supply and the development of a more sustainable mining and mineral industry is also high on the agenda. Finland published in 2010 a national mineral strategy that has the vision for Finland in 2050: "to be a global leader in the sustainable use of minerals", and that "the mineral area is one of the mainstays of the economy".

In light of the situation in Europe, the excellent geological potential of the Nordic region and a joint concern for sustainability there is a great opportunity for joint Nordic efforts in the area of mining and mineral industry at present. It is assessed that there is a large potential for collaboration on the Nordic level.

2. BACKGROUND

NordMin is a Nordic network of expertise and research focusing on sustainable non-energy raw materials, and is funded by the Nordic Council of Ministers (NCM) with its management at Luleå University of Technology. NordMin will support research, development, innovation and education initiatives in the raw materials sector in all Nordic countries and Greenland. The strength and synergy from the complementary capacities of the Nordic countries will give NordMin the competitive edge on a global basis.

The network will serve as a platform for existing and future Nordic co-operation in the mining and mineral sector, and has been designed through dialogue with the stakeholders in the Nordic countries. The aim is to increase sustainability in the Nordic mining and mineral sector in terms of resource efficiency, impact on the environment and impact on society. The problems of attracting a skilled workforce to the sector, involving both genders and at all levels will also be addressed.

The network is funded by the Nordic Council of Ministers for four years (2013-2016). From 2017 onwards, the network should be financially self-sufficient through financing from other sources. The aim is to create long-term Nordic cooperation in the mining and mineral sector.

The NordMin project is based on the SusMin proposal of 12 October 2011 to the Barents Council. This proposal was developed in dialogue with stakeholders from research and industry in the Nordic region. The proposal addressed the needs that were identified in Europe 2020, in the European Raw Materials Initiative, in various policies and strategies relating to minerals in the High North adopted nationally in the Nordic countries, and in strategic research programs in the mining and mineral sector.

Non-energy raw materials are essential to the global economy and our quality of life. They are vital for Nordic Economy and for the development of environmentally friendly technologies essential to

downstream Nordic industry. To fully meet future societal needs, metals and mineral products from both primary and secondary resources are required. Advanced research and innovation is essential to improve the Nordic knowledge base along the entire raw materials value chain to improve best available technology and reducing the environmental footprints. Advanced research and innovation is also essential to develop even more social sustainable, acceptable and attractive mining industry and regions.

Research in the raw materials value chain has to go beyond the present-day economic and technological constraints, and should be closely integrated with training and education, to enhance and ensure desired skills developments. It also has to share the most recent advances with other Nordic research institutions and the industrial sectors. This requires input of different scientific and technical skills and competences which should all be utilized in NordMin, such as; earth sciences, material sciences and technology, chemistry, physics, engineering, biology, environmental sciences, economy, social and human sciences.

The vision for NordMin is to create a world leading network for RDI in the raw materials sector.

The purpose of the NordMin network is to increase the global competitiveness and sustainability of the mining and mineral industry in the Nordic region.

The goals of NordMin are to:

- Develop a collaborative platform for the Nordic mining and minerals industry, universities, research institutes and innovation instruments
- Establish a "Nordic Mining School" for coordination and cooperation of Master's and PhD programs
- In dialogue with industry, national research and innovation financiers, regional authority and other stakeholders develop Nordic cooperation in research, innovation and demonstration that can promote a sustainable mining and mineral industry.
- Create a platform for exchange of experience on Nordic countries' mineral strategies as well as other policy areas that affect the mining and mineral industry. Examine the need for a platform for exchange of national authorities' lessons learned of working with the extracting industry.
- Attract external funding to a degree that makes it possible for the network to live beyond the three years of Nordic funding and work to attract further investment in the network through EU funds, national funds and private investors, so the network can achieve long- term volume as described below, e.g. budget of approx. 100 million. DKK per year.
- Address issues of mutual importance for the extractive industry and society for a sustainable mining and mineral industry in the Nordic region such as CSR, gender equality etc.
- Increase the global visibility of the mining and mineral industry in the Nordic region
- Invite to dialogue on the future challenges of the mining and mineral industry

3. SCOPE OF NORDMIN CALL AND RTD TOPICS FOR FUNDING

The research and technological development (RTD) topics to be funded under the NordMin call address all aspects of the **mineral resources value chain**, grouped into the following core themes:

- CT1: Exploration
- CT2: Mining
- CT3: Mineral processing
- CT4: Metallurgy
- CT5: Mine closure and rehabilitation
- CT6: Social sustainable, acceptable and attractive mining industry and regions

The scope of the Call is needs-driven research on sustainable and responsible mineral supply. Both basic and applied research projects will be funded, provided that the proposed research clearly demonstrates potential to contribute to innovation and to secure a sustainable supply of mineral resources for the Nordic industries. The proposed research must also demonstrate the Nordic added value.

Target groups: consortia involving academic, research institutes and industrial organizations are *particularly* encouraged to apply. Industrial participation in the projects is mandatory. Projects integrating social aspects are welcome. Proposals can be submitted in any of the areas above or they can cover aspects relevant to more than one sub-topic area. More detailed information can be found in the Strategic Research and Innovation Agenda of NordMin (www.nordmin-network.org). Proposals should address one or more of the following topics:

CT1 Exploration

RDI topics

- Minerals system mapping; 2/3/4D modelling, ore deposit models, spatial data mining
- In-situ chemical, petrophysical and mineralogical analysis in drill holes
- Development of techniques integrated drilling, geological and geophysical techniques for assessment of hidden mineral resources, deep, sea floor
- Assessment of far-field geochemical characteristics of mineral deposits

CT2 Mining/Quarrying

RDI topics

- Eco-efficient onshore and offshore mining technologies
- Eco-efficient technology for mine development
- Logistics concepts adapted to upcoming new mining environments (e.g. going deeper)
- Integrated processes, system approach
- Innovative waste management
- Safe and attractive workplaces

CT3 Mineral Processing

RDI topics

- Energy efficiency in mineral processing
- Recovery of fine particles
- Resource efficiency in mineral processing
- Sustainable water usage in mineral processing
- Biotechnological processing
- Geometallurgy, should be a horizontal issue, should cover the value chain

CT4 Metallurgy

RDI topics

- Processing of low grade and complex materials in the most efficient and sustainable way
Treatment of metallurgical by-products and waste with a maximum recovery of bulk and accompanying minor metals
- New technologies for recovery of accompanying and critical metals for better utilization of natural resources
- Design of large integrated multi-technology products and processes by flexible and concurrent design methodologies and tools as well as modelling and simulation
- Tackle the recurrent existing metallurgical challenges focusing on sustainable and technological overlaps in the field which include recovery energy from slags, neutralization of iron in hydrometallurgy, liquid solid separation, elimination of metals in effluents.

CT 5 Mine closure and rehabilitation

RDI topics

- Waste management
- Drainage and mine water treatment
- New technologies for rehabilitation of mines and tailings
- Long term monitoring system

CT 6 Social sustainable, acceptable and attractive Mining industry and regions

RDI Topics

- Indigenous people and mining
- Multiple land use and rural economic development in an attractive mining environment
- Land conflict management
- Breaking gender patterns
- Secure, lean and innovative mining and attractive workplaces
- Formal and informal institutions and government culture
- Acceptable mining by CSR and best practice on corporate responsibility

4. FUNDING AND ELIGIBLE COSTS

A total amount of 18 million DKK is available to fund the selected projects during the period 2014-2016.

It is recommended that each project started includes minimum 1 post-graduate student (funding from NordMin maximum 500 000 Dkr/year). Funding for post-doc and senior researchers can cover salary (incl. OH). Industry involvement should be a minimum 20% of total project budget, but 50% is to be aimed for, by cash or in-kind (should be specified in a detailed project budget). NordMin contribution to total project cost can be maximum 70% and will be maximum 5 MDkr/project.

- Industrial partners are not eligible for reimbursement and are hence required to participate with own funding, and bear their own costs for participation.
- Industry involvement should be a minimum 20% of total project budget, but 50% is to be aimed for, by cash or in-kind
- Industry involvement should be specified in a detailed project budget, and by a statement of commitment of the industry partner
- scientific and technical staff salaries and expenses are eligible for reimbursement
- travel costs are eligible for reimbursement
- equipment and subcontracting are eligible for reimbursement (duly justified, subcontracting the core work of the project is not allowed)
- Indirect costs (overheads) and VAT shall be handled according to national rules
- All partners eligible for NordMin funding must provide a declaration of own funding, see annex 2
- The funds will be paid according to a periodized payment plan established beforehand the project starts. The terms will be regulated in the contract between the Coordinator and NordMin Management.

5. ELIGIBILITY CRITERIA

This NordMin Call is issued by the Nordic Council of Ministers. and the rules for participation and funding set by the NordMin call, follows that of the Nordic Council of Ministers. The proposals have to meet the following eligibility criteria, as defined by NordMin steering committee :

- The proposals must be submitted, only via e-mail to: call@nordmin-network.org , by the coordinator of the project no later than **December 13th, 2013, at 17.00 CET**
- Application forms available on NordMin website: www.nordmin-network.org should be used Each proposal must involve organizations from a minimum of three Nordic countries including Greenland. Cooperation between two or more regions of one single country is not considered to be transnational
- The coordinator of the consortium applying for funding must be established in one Nordic country
- The language of the project applications is English

- All fields of the project description are filled in and their respective length does not exceed a maximum of 10 pages, excluding the annexes
- The project duration shall not exceed 30 months
- All applicants of a proposal eligible for funding must provide in annex a statement of commitment dully signed by the head of the organization and the lead researcher/principal investigator of the project description
- Applicants coming from non Nordic countries can be part of the project consortia, on the condition that they make proof of covering their own costs by providing a signed declaration
- Each applicant institution must comply with the national funding criteria and regulations to ensure the eligibility of the transnational proposal
- Each proposal must involve at least one Nordic industry organization in terms of a private company or an industry association representing private companies
- Each proposal must be supported by industrial funding (cash or in kind) at a minimum level of 20%, but 50% is to be aimed for, by cash or in-kind. All proposal eligible for funding must provide statement of commitments signed by the organizations (FORM C). All partners eligible for funding must provide declaration of own funding if the industry contribution is below 30% (FORM D).
- The funded consortia will be requested to conclude a Consortium Agreement.
- The total NordMin budget for individual project proposals is restricted to maximum 5 MDKr. NordMin contribution to total project cost can be maximum 70%. The project budget must be reasonable against the project goals
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6. EVALUATION, SCORING AND SELECTION PROCEDURES _

The evaluation procedures are designed to identify the best proposals in terms of scientific excellence, innovation potential, judged impact on promoting competitiveness in the Nordic mining- and mineral sector and Nordic cooperation and added value. The evaluation of the scientific content is made by an international review panel. Nordic added value is evaluated by the steering committee. Final decision will be made by the steering committee.

There will be a peer review evaluation process by the international panel of experts (three independent reviewers for the same proposal, out of which one is appointed as the *rapporteur* and consolidates the evaluation report on behalf of all the evaluators of that respective proposal).

The proposals will be assessed according to the following criteria:

No.	Evaluation criterion
0	<p><i>Is the proposal within the scope of the call?</i> (yes/no question)</p> <p>If the proposal was considered not to be within the scope of the call, an explanation of why the proposal is out of scope will be required from the evaluators, to be provided as feedback to the applicant. If considered outside the scope of the Call, the proposal will not be further evaluated.</p> <p>The same rating (0) will be awarded if the proposal does not contain sufficient information to enable a proper assessment of the criteria 1, 2 and 3.</p>
1	<p><i>Scientific and/or technological excellence</i></p> <ul style="list-style-type: none"> • Soundness of concept and quality of the objectives • Progress beyond the current state of the art • Quality of the S/T methodology • Inter- or transdisciplinary character
2	<p><i>Quality and effectiveness of management and implementation</i></p> <ul style="list-style-type: none"> • Soundness of management structures and procedures • Effectiveness of the associated work plan • Quality and relevant experience of the individual participants • Quality of the consortium as a whole (including complementarity, balance) • Appropriateness of the allocation and justification of the resources to be committed (staff, equipment)
3	<ul style="list-style-type: none"> • <i>Potential impact of the</i> project regarding innovation potential and in promoting competitiveness in the Nordic mining- and mineral sector and contribution to Sustainability • Addressing industrially relevant aspects of the mining- and minerals value chain • Appropriateness of measures for the implementation of results in industrial processes • Nordic dimension of the research and the proposed solutions, necessity for transnational approach
4	<p><i>The Steering committee will evaluate:</i></p> <ul style="list-style-type: none"> • Added Value on the Nordic countries • Strengthening the Competitiveness of Nordic Mining industry • Level of Cooperation among the Nordic countries • Gender aspects (NordMin strives for gender equality and encourage applicants of both sexes to apply. A good balance in any proposal is a merit)

Scoring:

The quality of the proposal will firstly be assessed independently by each of the three evaluators appointed for the proposal. Each of the three criteria (from 1 to 3) will be scored between 0 and 5. Half marks can be given. The scores indicate the following with respect to the criterion under examination:

- 0** - The proposal is outside the scope of the call or cannot be judged further due to missing or incomplete information.
- 1 - Poor.** The criterion is addressed in an inadequate manner, or there are serious inherent weaknesses.
- 2 - Fair.** While the proposal broadly addresses the criterion, there are significant weaknesses.
- 3 - Good.** The proposal addresses the criterion well, although improvements would be necessary.
- 4 - Very good.** The proposal addresses the criterion very well, although certain improvements are still possible.
- 5 - Excellent.** The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.

The threshold for the individual criteria will be 3. The **overall threshold**, applying **to the sum of the three individual scores**, will be **10**. In case of equal scores, the prevailing score will be that obtained in the evaluation criteria 4 (Nordic relevance). The numerical scoring of the above criteria is the basic assessment of the proposal, and helps to assign the rank of a project (recommendation for funding). The International expert panel will have to identify strengths and weaknesses for each criterion and should provide context for their comments based on the application. The overall rating of each application should reflect the evaluators own judgment of the merit of the overall application. The overall rating will also be expressed as a numerical score from **0 to 15**. The *rapporteur* should provide a paragraph summarizing the factors that informed their overall rating. Based on the overall ratings, each proposal will be listed within one of the categories "A", "B", "C", where these letters stand for:

- Overall rating 12.5 - 15 ("A"): *Very favourable recommendation for funding*
- Overall rating 10 - 12 ("B"): *Can be funded*
- Overall rating 0 - 9.5 ("C"): *Not favourable for funding.*

For each of the A and B categories a final ranking list of projects will be established. Within the category C no ranking list will be established. The Joint ranking list of proposals recommended for funding will be submitted to the Steering committee for the final approval. The evaluation criteria under item 4 will be judged by the Steering committee and graded in the same way as for the scientific criteria. Only proposals that have a sum of 10 or more from criteria 3 will pass on to evaluation criteria 4.

Only excellent/very good proposals will be funded. If the number of proposals considered excellent/very good, as judged by the international expert panel, corresponds to a total requested funding which is smaller than the committed funds, only part of the funds may be used. Proposals not recommended for funding following the International expert panel will not be funded in any case.

7. RECOMMENDATIONS FOR A SUCCESSFUL PROPOSAL

The project coordinator has to ensure that all consortium partners provide the necessary information as requested by the national regulations, to ensure the eligibility of the proposal

- Each proposal must involve a minimum of three research groups from three different Nordic countries. Therefore it is advised, if possible, that projects with more than three countries are submitted
- There is no formal limit on the number of partners in a consortium. However, it is advisable that the sizes of the consortia are suited for the level and complexity of the project and each partner has a significant contribution to the proposed work. This will be assessed under the *Evaluation Criterion 2 – Quality and effectiveness of management and implementation*
- As industry co-funding is mandatory at a level of minimum 20% although higher industrial co-funding is encouraged. It is advised that the coordinator at an early stage seek consultation with potential industry partners. The industry funding could be in cash or in kind and should be substantiated by a statement of commitment.

8. COMPOSITION OF CONSORTIA

The following recommendations should be taken into account when setting up project consortia:

- The consortium has to include at least three organizations from three different Nordic countries (incl. Greenland). Cooperation between two or more regions of one single country is not considered to be transnational
- The consortium must always be coordinated by a partner from a Nordic country participating in the Call and the coordinator must be eligible for funding, irrespective of the characteristics of the proposed projects. The overall responsibility for the project execution rests with the coordinator, but parts of the project management may be allocated to the other partners
- There is no maximum number of applicants per proposal. The consortium must be balanced and have a focus on the industrial application and innovation of the proposed research, in view of its potential contribution to securing a sustainable supply of primary resources for the Nordic industries. In order to ensure balanced Nordic partnerships, the contribution of one country to the collaborative project should not exceed 70% of the total project costs
- Trans-disciplinary consortia approaching in an integrated manner technological topics in conjunction with environmental and social aspects are particularly encouraged of the eligible participant
- Applicants should convincingly demonstrate their ability to co-finance the project beyond the potential funding. The financial capability and stability of the industrial applicants will be assessed by the Steering committee

- According to the NordMin rules, projects are evaluated as a whole, not per partner. This means that failing of one partner within the consortium may cause the entire project to fail

Responsibility of the project coordinator:

- The project coordinator will lead the consortium throughout the application procedure and is fully responsible for the overall project coordination
- The NordMin management will only communicate with the project coordinator. Accordingly, the project coordinator has to share all the information with the other consortium partners
- The project coordinator is strongly advised to ensure that all the partners fulfill NordMin requirements and criteria well before the submission deadline
- The project coordinator must submit the reports of funded projects to the NordMin management as described below

9. REPORTING AND MONITORING FUNDED PROJECTS

NordMin reporting procedure requires the submission of reports to the NordMin management.

Reports and financial statements should be performed according to Standard Terms and Condition for the Nordic Council of Ministers' Framework Agreements (01/01/2012).

Project Results shall be the property of the Party generating the results if otherwise is not agreed. If a Project result has been jointly generated by several Parties and if their respective share of the results cannot be ascertained, they shall have joint ownership of such Project Results. Said Parties shall establish an agreement regarding the allocation and terms of exercising that joint ownership within 6 months from the Project Result coming into existence. If Project Results have the potential to be exploited industrially or commercially, its owner and any relevant other Parties shall agree to provide and pay for an adequate and effective protection.

An important principle for publicly financed research is that society benefits from the achieved results in a widest possible sense, both through dissemination and commercial utilisation. The reports should be written in the context of the collaborative project, with due reference of the progress of the other partners and will be submitted to the NordMin management. All the communication regarding the project will take place between the NordMin management and the Coordinator of the funded project, who has the full responsibility of informing timely and completely all the participants in the consortium.

The beneficiaries of the funded projects will submit reports to the NordMin management, in English. Coordinators of funded projects will be requested to report to the NordMin management, according

to the timeline and templates that will be provided to them by the NordMin management upon the communication of the funding decision.

The reports will have to address milestones and deliveries set up in the project proposal. Annual reports are required for projects with a length of two years or more. Based on the performance the Steering committee can decide in the termination of a project before the project final date, if serious deviations from the project plan is evident or if the project consortium fails to meet the necessary scientific standards. The steering committee can also terminate a project if economic inconsistencies are detected. In this case the project partners may be required to pay back the entire or part of the received grant.

All projects will have to submit a final report a minimum of two months after the project final date. The funds will be paid according to a periodized payment plan established beforehand. For projects shorter than two years reporting periods will be decided between the Coordinator and the NordMin management.

10. SUBMISSION PROCEDURES

For the NordMin Call, a single-step submission procedure, which means that only one, full proposal will be required for submission. The application forms can be downloaded from the NordMin website. The proposals must be submitted by the coordinator of the proposal, **only** in electronic form to call@nordmin-network.org

The deadline for the submission of full proposals is: **13 December 2013 at 17.00 CET**

The deadline is strictly enforced. Any submission after the deadline has passed will be declared ineligible and will not be further evaluated.

A full proposal must contain:

- General administrative details for each applicant and publishable project summary
- General budget information
- The Project description, with all the mandatory sections in the electronic form completed
- CVs/profiles of the key personnel (maximum two pages per each profile)
- Statement of commitment from all partners, see annex 1
- Declaration of own funding in case of in kind from university or research institute or partner from 3rd country, see annex 2

The application forms are provided on www.nordmin-network.org.

When completing the proposal forms, applicants are advised to follow the instructions below:

- a. Download the electronical forms provided on the NordMin website
- b. Fill in the tables *General and administrative information* and check that all fields are correctly

completed

- c. Select one or more core topics (CTs) listed in section 3 of the Call text
- d. Fill in the publishable summary. The publishable summary (max. 2000 characters including breaks) should provide a brief overview of the current state of the art, of project goals and their expected contribution to the selected sub-topic area(s)
- e. The project description must not exceed **10 pages** including figures and tables . Do not forget to fill in your project acronym.
- f. When filling in the proposal application forms, keep in mind that the project description should allow evaluators to address all the evaluation criteria properly (see *Annex I to the Call Text – Evaluation criteria and scoring*)
- g. Fill in the tables in the *General budget information*
- h. The final proposal should include:
 - FORM A
 - FORM B
 - FORM C
 - FORM D, in case of in kind from university or research institute, if the industry contribution is below 30%, or partner from 3rd country.
- i. Make sure you will be submitting before the deadline and all parts of the application are attached.

Annex 1 – STATEMENT OF COMMITMENT

Name of organization

Statement of commitment

As the Head of the Organization (*name/country*) I support the submission of the transnational proposal (*title/acronym*) to the **NordMin Call on Sustainable raw materials sector (2013)**, providing the essential conditions for the implementation of the project, according to the work programme presented.

As Lead Researcher/Principal Investigator/Industrial partner (*name/position*) (*delete non-applicable titles*), of the Organization (*name*), I am aware of the NordMin Call Text and the procedures and confirm that the Organization (*name*) fully support the proposal.

As an industrial partner (*organization name*) is prepared to co-finance the project (*name of project*) with the sum of _____ for the period _____
(*delete paragraph if non applicable*)

Place, Date

(*Name of the head of the Organization*) (*Name of the Lead Researcher/ Principal Investigator*)

(*Signature of the head of the Organization*) (*Signature of the Lead Researcher/Principal investigator*)

¹⁰ Lead researcher: the responsible researcher from the Coordinating organization; Principal investigator: the responsible researcher from the Partner organizations.

Annex 2 – DECLARATION OF OWN FUNDING

Name of the partner's organization

Declaration of own funding

As the Head of the Organization (*name/country*), I state that the financial support is guaranteed to the Organization (*name/country*) to participate as a partner in the NordMin RTD proposal (*title/acronym*), coordinated by (*name/institution/ country*) and submitted to the **NordMin Call on Sustainable raw materials sector (2013)**.

The Principal Investigator in charge is (*name/position*) and is part of the Department (*name*).

Place, Date

(Name of the head of the Organization) (Name of the Lead researcher/ Principal investigator)

(Signature of the head of the Organization) (Signature of the Lead researcher/Principal investigator)