1. **BACKGROUND**

The mining and metals sector plays a critical role in driving global economic growth. The development of mineral resources is a pillar of many national economies, both in terms of contribution to gross domestic product and tax revenues, and also as an industry that directly employs millions of workers. The closely connected upstream supply sector of the mining and metals industry, which provides construction services, manufacturing, wholesale and retail trade, as well as technical, scientific and professional services, provides further employment and delivers significant additional economic benefits.

The mining and metals industry is a large contributor to economic growth and social development in a number of the European Bank for Reconstruction and Development’s (the “EBRD’s”, the “Bank’s”) resource-rich countries of operations (“COOs”), such as Kyrgyzstan, Mongolia, Kazakhstan and Ukraine. With an increasing demand for materials needed for the implementation of a green economy in line with the commitments included in the 2015 Paris Agreement¹, the mining and metals sector plays a critical role in sourcing the large quantities and variety of critical raw materials needed for the clean energy shift—wind, solar, hydrogen, and electricity systems— which are in fact significantly more material-intensive in their composition than current traditional fossil-fuel-based energy supply systems. With the expected increase in metal production, it is a priority to maximize the sustainability of mining operations and promote resilience to climate change, including by increasing the efficiency of energy and water used and reducing the waste generated, across the whole production cycle.

The mining and metals sector faces a number of sustainable development challenges, including the impacts of a changing climate. Higher temperatures, changing patterns of precipitation and higher sea levels, or conversely, lower freshwater lake or river levels, will affect the mining and metals industry in a variety of ways, including physical risks to assets and infrastructure arising from flood or storm damage, supply chain risks arising from disruption to transport networks and increased competition for climate-sensitive resources such as water and energy. On the other hand, a changing global climate may enable access to new reserves in previously inaccessible areas, and efforts to plan and prepare for changes in climate can create opportunities to engage communities and advance sustainable development objectives.

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In this context, the EBRD wishes to know more about relevant green and resource efficient technologies and practices applicable at the mining and processing level, that result into operational efficiency and environmentally friendly mining methods, aligned with the Green Economy Transition (“GET”) approach, which targets the achievement of 40% of EBRD annual business volume dedicated to sustainable projects by 2020.

For this purpose, a formal cooperation with EIT Raw Materials (“EIT RM”) has been set up by the EBRD. Initiated and funded by the European Institute of Innovation and Technology, a body of the European Union, EIT RM is the largest consortium in the raw materials sector worldwide. Their vision is to develop raw materials into a major strength for Europe and to boost competitiveness, growth and attractiveness of the European raw materials sector via radical innovation, new educational approaches and guided entrepreneurship. EIT RM unites over 120 partners from leading industry, universities and research institutions from more than 23 European Union (“EU”) countries.

The EIT RM has relevance in the context of the EBRD Mining Strategy where one of the objectives is to support competitiveness and sustainability of the mining sector in the EBRD’s COOs, as well as in the context of the EBRD GET approach. The EBRD could use EIT RM’s experience, knowledge and network to achieve these goals.

The EBRD now wishes to engage a consultant (the “Consultant”) to map relevant green and resource efficient technologies and practices applicable at the mining and processing level, and support the marketing of the results to both existing and potential clients in the mining and metals sector (the “Assignment”). Using the guidance from the results of the Assignment, the EBRD will also assess any potential engagement to offer financing of CAPEX for implementation of such projects and potentially concessional financing.

2. Objectives

The objective of this Assignment is to provide the EBRD with details of green and innovative practices and technologies which may be used by the Bank’s existing and potential clients in the mining sector to help them increase their operational efficiency, cut costs, and to promote environmentally friendly mining methods, thereby contributing to climate change mitigation and climate change adaptation goals.

3. Scope of Work

The Consultant will:
1. Map the risks and opportunities in the EBRD’s COOs in the mining and metals sector, in particular identifying key barriers for implementation of best practice solutions including regulatory, infrastructure, availability of technology, infrastructure, economic, financial, market risks;
2. Provide a shortlist of 5 priority countries (including outside the EBRD region) where best practices and technologies will be reviewed, and agree on them with the EBRD.
3. Identify at least 5 mining companies per priority country, where the Consultant will map innovative technologies and practices in place that result in a more efficient use of resources (energy, water, land), minimized waste production and increased resilience to
climate change. Such technologies and practices should be applied to mining and production processes, including but not limited to blasting, crushing, grinding and producing, and should have a Technology Readiness Level of at least 7.

4. Distinguish between technologies and practices applicable across all mines and those which are instead resource/context specific, and refer to relevant standards in the mining and metals sector, including the EU Best Available Techniques Reference Documents (“BReFs”), sector association reports, companies’ sustainability reports;

5. Identify assets that are typically most exposed to physical climate risks and proposed approaches for managing risks to those assets.

6. Assess the level of innovation of the technologies identified (through the Technology Readiness Level index), their current market diffusion and the replicability potential across the mining sector in EBRD COOs;

7. Analyse the drivers for implementation of such technologies and practices, i.e. (a) regulatory requirement, (b) incentive mechanism in place, (c) industry-wide trend/initiative, (d) company’s own business strategy decision (i.e. cost-effectiveness), (e) commitment to a voluntary pledge/initiative/standard;

8. Describe in detail implementation processes, expected time and necessary resources for each technologies and practices, and provide a high-level estimate of the CAPEX (with its breakdown, equipment, software, human resources, financing required, etc.) and OPEX associated to the technologies implementation;

9. Analyse expected outcomes, both in terms of increased operational efficiency and reduced environmental impact, and if applicable, existing cases for which proposed technologies and practices have been applied to.

10. Assess the resource efficiency benefits associated to these technologies, including decreased energy/water consumption, waste minimization and CO2 emission reduction (per unit of ore mined), and refer to how such technologies and practices lead to climate change mitigation and adaptation of the operations.

11. In cooperation with the Bank’s Operation Leader (the “OL”) make recommendations to the EBRD’s Communications Department on suitable content and locations for marketing videos showcasing deployment of innovative green technologies/practices in the mining and metals sector.

12. Visit the recommended sites for filming with the EBRD’s Communications Department and provide guidance and input on the content.

4. IMPLEMENTATION ARRANGEMENTS

The consultant will report on all aspects of the Assignment to the Bank’s OL, Filip Prodanovic (Email: prodanof@ebrd.com / Phone: +44 207 338 8513 / Cell: +44 7828 314674) unless he instructs otherwise.

The Consultant will arrange a kick-off meeting with the OL as soon as possible. The purpose of this meeting (or conference call) is to build rapport and clarify any questions from the Consultant regarding the Assignment.

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2 In the implementation of this task, the consultant should review and follow the EBRD GET Handbook: https://www.ebrd.com/.../implementing-the-ebrd-green-economy-transition.pdf
It is envisaged that tasks 1-10 will take around 12 weeks.

Tasks 11 and 12 are expected to take up to four weeks, including travel to the recommended sites for filming. The Consultant will hold discussions with the OL and Communications Department either in person or via conference call / Skype and submit a written summary of their recommendations in the first instance.

5. REPORTING AND DELIVERABLES:

The assignment will be based on desk research and engagement with key stakeholders on the ground, including interviews with mining companies. The Consultant will be requested to produce the following deliverables:

a. Inception report, covering tasks 1, 2 and 3, within six weeks of the Assignment Start Date;
b. Final report, covering tasks 1-10, within 12 weeks of the Assignment Start Date;
c. Written summary of recommendations on suitable content and location for marketing videos within one week of final discussion with the OL and Communications Department (task 11).

All deliverables should be delivered in English and should be prepared in PPT format. The Consultant is to provide a timeline for the assignment that is not expected to last more than 18 weeks in total.

6. CONSULTANT AND KEY EXPERT PROFILES

The Consulting Team shall have relevant project experience and knowledge – general and specific to the regions and countries in this TOR – in the following areas:

- Mining and metals sector
- Resource efficiency and climate change
- Stakeholder engagement

The Consultant’s expert team is expected to include key experts as follows:

- Project manager / Senior expert with preferably 10 years’ international experience in the mining sector and knowledge of relevant regions;
- Junior expert with preferably 3 years’ experience in the mining sector and knowledge of relevant regions;
- Senior environmental / climate change expert with preferably 10 years’ relevant experience in the mining sector.