Securing access to critical raw materials in the United Nations Economic Commission for Europe region: challenges and opportunities

Resilient and Sustainable Critical Raw Materials Value Chain

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Natural resources crises is a top-rated risk in the next 2-10 years

Mining and Metals industries have strong influence in many of the identified top risks

Global risks ranked by severity over the short and long term
What are the risks emerging from the potential supply-demand gap of critical minerals?
# Supply-demand imbalance risk matrix

**Ecosystem risk assessment**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Extremely high</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conflict over resources</td>
<td>Job losses in case of materials shortage</td>
<td>Backlash in adopting new technologies</td>
<td>Reduced access to capital to address the imbalance</td>
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<td>Supply chain fragmentation</td>
<td>Reduced responsible mining</td>
<td>Lacking access to capital to address the imbalance</td>
<td>Reduced access to energy and transport services</td>
</tr>
</tbody>
</table>

**Likelihood**

1. Impact on the ecosystem: ‘Low’ represents minor impact and ‘Extremely high’ represents catastrophic impact on human lives, societies, and the planet.
2. Likelihood to happen: ‘Low’ represents a risk that is not likely to happen and ‘Extremely high’ a risk that is very likely to occur.


The risks identified in the workshop are renamed and placed in the matrix based on the assessment.

- **Political**
- **Economic**
- **Social**
- **Technological**
- **Environmental**

- Highest likelihood and impact risks
- Secondary risk (cannot be directly addressed in the value chain)
The 5 categories of risks

**Political**
- Conflict over resources
- Geopolitical risks disrupting materials value chains
- Increasing resource nationalism
- Increasing trade fragmentation
- Lack of political will for the energy transition
- Low incentives for new mining projects

**Economic**
- Market volatility and uncertainty
- Pressures in substitute material supply chains
- Regulatory race to the bottom as investment flows to countries with lower ESG standards
- Rising new technology prices
- Stockpiling of critical minerals
- Supply chain fragmentation
- Lacking access to capital to address the imbalance

**Social**
- ESG targets becoming unattainable
- Increased workforce pressure for productivity over wellbeing
- Job losses in case of materials shortage
- Lower acceptance of mining projects
- Reduced access to energy and transport services
- Reduced responsible mining
- Reputational damage for energy transition
- Setbacks in socioeconomic development in producing countries forced to leapfrog traditional for higher cost technologies

**Technological**
- Backlash in adopting new technologies
- Cascading renewable technology shortages

**Environmental**
- Catastrophic climate events
- Delay of the energy transition
- Higher demand for resources from increased mining
- Higher environmental pressure on ecosystems and waste generation
- Increase in artisanal and illegal mining
- Resources used for climate change adaptation instead of mitigation
- Uncoordinated land use
Are these risks materialized or are they being addressed?

Industrial policy is back, but Europe needs new thinking to secure minerals

**DISCLAIMER:** All opinions in this column reflect the views of the author(s), not of EURACTIV Media network.

**By Julija Polcanova | Transport & Environment**

**EU acts to secure access to critical raw materials**

**The Inflation Reduction Act Is the Start of Reclaiming Critical Mineral Chains**

Green technologies depend on the supply of a few key resources.

**By Thane G. Skjelbred**

**Zimbabwe joins the wave of resource nationalism**

Zimbabwe banned the exports of raw lithium ore in 2022, and then banned the exports of all raw mineral ores this year. Isabelle van Halm explores the latest example of a wave of critical mineral resource nationalism.

**Mineral-rich countries want to form an OPEC for battery minerals**

Indonesia is considering a cartel for nickel and cobalt, while Argentina, Bolivia, and Chile are in “advanced talks” about a “lithium OPEC.”

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Image: An excavator led locals in the mountainous region of the area.

Image: A miner working in the mines of the lithium-rich region.

Image: A mountainous landscape in the lithium-rich region.
Minerals and metals are embedded in the energy transition: what is needed for resilient and sustainable value chains?

Collaboration for:
- Increasing and channeling investments efficiently and responsibly
- Building capabilities
- Improving standards for production and processing
- Strengthening public-private policy dialogues
- Promoting and scaling up innovation
The industry is driven by the energy transition
Green transition drives Mining and Metals industry transformation

Macro trends driving business transformation, Mining and Metal Industry

Share of organizations surveyed that identified this trend as likely or highly likely in the next five years

- Broader application of ESG standards
  - MM: 95%
  - Global: 81%

- Investments to facilitate the green transition
  - MM: 83%
  - Global: 69%

- Consumers become more vocal on environmental issues
  - MM: 83%
  - Global: 68%

Skill gaps in the labor market and inability to attract talents are the biggest transformation barriers for Mining and Metal companies.

77% of MM organizations surveyed identify skill gap as the top transformation barrier, compared with 60% globally.

56% of MM organizations surveyed identify inability to attract talents as the top barrier, compared with 53% globally.

Other trends

• Record deployment of clean energy technologies such as solar PV and batteries. In 2022.
  • Electric car sales increased by 60%, exceeding 10 million units.
  • Capacity additions for energy storage systems doubled.

• Investment in critical minerals increased by 30% in 2022, following a 20% increase in 2021. Exploration spending also rose by 20% in 2022.

• In the past few years, more than 100 policies and regulations from 25 countries and regions worldwide to ensure adequate and sustainable mineral supplies to meet the needs of the energy transition.

• Collaboration between automotive, battery and manufacture, and mining and metals industries is increasing

Source: Critical Minerals Market Review 2023, IEA
Opportunities for sustainable and resilient CRM value chains

– General awareness of the need of minerals and metals (and not only for the energy transition)

– Governments, civil society and private sector are looking in the same direction: ESG, sustainability, decarbonization, biodiversity, energy transition?

– Technology and innovation is advancing fast and can support the industry transformation
Thank you

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