

European Commission Call for Evidence: EU Arctic Policy Update

Response by the European Federation of Geologists (EFG)

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The European Federation of Geologists (EFG) welcomes the European Commission's initiative to update the EU Arctic Policy. The Arctic is undergoing rapid environmental, geopolitical and economic transformation, creating both opportunities and significant risks. Sound geoscientific knowledge and professional geological expertise are essential to ensure that EU engagement in the Arctic is responsible, sustainable and aligned with the highest environmental and ethical standards.

Geologists play a critical role in resource assessment, climate change monitoring, risk prevention, energy transition and environmental protection. In this capacity, EFG stands ready to support European institutions through its network of nationally recognised professional associations, its Panels of Experts and its internationally recognised professional title, the European Geologist (EurGeol).

1. Critical Raw Materials Management

The updated EU Arctic Policy rightly emphasises the importance of responsibly managing Arctic natural resources, including minerals and strategic raw materials that are essential for Europe's green and digital transitions. Geological expertise is fundamental to ensuring that resource development is scientifically sound, environmentally responsible and socially acceptable.

Competent and qualified geologists are indispensable for reliable resource assessments, transparent reporting and risk-aware planning. Professional certification frameworks help ensure quality, accountability and adherence to strict ethical, environmental and social (ESG) principles, including full respect for indigenous populations and local communities.

To strengthen the EU's approach to Arctic raw materials, EFG recommends the following measures:

- Arctic resource exploration and assessment activities should be conducted or supervised by professionally certified geologists, such as holders of the European Geologist (EurGeol) title or equivalent recognised qualifications. This would ensure the highest ethical, technical and professional standards in resource evaluation and reporting.
- Increased investment is needed in advanced geological surveying and high-resolution mapping of critical mineral deposits in Greenland and the European Arctic. Improved subsurface knowledge will reduce geological uncertainty, support responsible investment and contribute to lowering the EU's external dependencies on strategic raw materials.
- The EU should promote and support "Responsible Mining" protocols tailored to Arctic environments. These should include strict environmental safeguards, life-cycle impact assessments and post-mining ecosystem restoration strategies specifically adapted to fragile cold-climate ecosystems.

2. Climate Change, Environmental and Risk Monitoring

The Arctic is one of the regions most affected by climate change. Rapid warming is accelerating ice melt, permafrost thaw, coastal erosion and sea-level rise, with major consequences for ecosystems, communities and infrastructure.

At the same time, expanding economic activity — including shipping routes, ports, energy systems and submarine communication infrastructure — requires robust knowledge of ground and seabed stability. Geoscientific data on marine geology, permafrost dynamics, sediment transport, hydrogeology and geohazards are essential to ensure safe and resilient infrastructure development.

Comprehensive geological and geotechnical mapping, long-term monitoring and risk-informed planning must therefore form a core component of EU Arctic action. Geologists should be formally represented in regional Arctic governance and advisory structures, and professional excellence should be promoted through recognised qualification frameworks. EFG can support these objectives through its certification system and expert networks.

EFG recommends prioritising the following actions:

- Establish a coordinated geotechnical monitoring network to assess ground stability and anticipate infrastructure risks linked to permafrost degradation. Early-warning systems and shared data platforms will help prevent damage to transport networks, settlements and industrial facilities.
- Integrate detailed geological and geohazard assessments into Arctic spatial planning, urban development and transport corridor design. Systematic evaluation of landslide risks, coastal instability and ground subsidence is essential for long-term safety and cost-effective infrastructure investment.
- Support research into the suitability of Arctic geological formations for safe and permanent Carbon Capture and Storage (CCUS). Where environmentally appropriate, subsurface storage can contribute to European climate mitigation strategies while maintaining strict environmental safeguards.

3. Energy and Water Resources

Sustainable management of Arctic energy and water resources is central to resilient regional development and improved living conditions for local communities.

- Geothermal energy represents a reliable, low-emission and locally available energy source that is particularly well suited to Arctic regions. The EU should promote research, pilot projects and deployment of geothermal systems to support local communities, district heating and industrial operations.
- Arctic aquifers are strategic freshwater reserves that require proactive protection. Sustainable groundwater management strategies should be implemented to prevent industrial pollution, saline intrusion and climate-related degradation, ensuring long-term water security.

4. Education, Professional Standards and International Cooperation

The updated policy highlights the importance of cooperation between the EU and Arctic states, including Norway, Canada and the United States, as well as broader international engagement. Effective cooperation requires shared technical standards, comparable professional qualifications and mutual trust in expertise.

Geologists operating across borders should be able to work under harmonised professional frameworks that ensure consistent quality, ethical conduct and technical reliability. The EU should promote the EurGeol professional standard and support equivalence mechanisms with comparable international certification systems.

EFG proposes the following measures:

- Facilitate the mobility of expert geologists between EU Member States and Arctic partner countries to enable knowledge exchange, technology transfer and coordinated scientific efforts. Streamlined recognition of professional qualifications will strengthen collaborative capacity.
- Support the development of specialised education and training programmes in polar and cold-region geoscience through the EFG Academy. Targeted training will prepare the next generation of professionals to address the unique technical, environmental and societal challenges of Arctic operations.

Investing in Arctic geoscience is not only a technical necessity but a strategic decision. Reliable geological knowledge underpins resource security, infrastructure resilience, climate mitigation and environmental protection. Evidence shows that investment in geoscientific data and risk prevention yields exceptionally high socio-economic returns.

EFG stands ready to work with European institutions, Arctic partners and international organisations to advance these priorities and ensure that EU Arctic engagement is science-based, responsible and future-oriented.

About EFG:

The European Federation of Geologists (EFG) is the largest and most influential network of geoscience professionals across the Council of Europe countries, with 28 national associations representing a direct membership of approximately 50,000 individuals. EFG collaborates extensively with leading geoscience organisations worldwide, including in Australia, the USA, Canada and South Africa, indirectly reaching over 150,000 experts.

