Future Minerals Policy Call for Evidence
Minerals and Petroleum Branch
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Via email only to mineralsreview@economy-ni.gov.uk

19th May 2026

**RE: Future Minerals Policy Call for Evidence**

The Institute of Geologists of Ireland ("IGI") is the Chartering Body for geologists in Ireland. Its aims are to promote and advance the science of geology and its professional application across the island of Ireland. The following submission has been prepared by the IGI's Mineral Information Working Group, which is composed of professionals working in, and retired from, the minerals industry in Ireland and abroad. None of the members of the working group who were involved in this submission are currently employed in any active minerals project in Northern Ireland. Members of the working group who are employed by the DfE were excluded from composing and review of this submission.

Minerals development is an extremely complex subject encompassing a wide variety of fields, including economics, engineering, geology and environmental science. Generalisations are difficult – every mine site, project location, environmental setting and community is different. There is no global consensus on what minerals development should look like. Each jurisdiction must tailor their policy to what will benefit their nation and people.

Minerals are present in each system that supports everyday life, from food production, housing, health care, infrastructure, water infrastructure, electricity, communications, manufacturing to digital technologies, from fertilizers to bridges. They do not just relate to advanced technologies; they are foundational to society. However, Western societies have distanced themselves from this base, as modern economic forces pushed it abroad. The question is not whether we need minerals but rather how society can accept mining and how can mining serve society.

Below, an attempt has been made to highlight some of the key points which are relevant to the questions posed by the DfE. Each point can be expanded upon significantly, and there are further aspects which should also be considered. References and further information have been included in each section.

We recommend that the DfE, in this consultation phase, engage with other European states which have active minerals development sectors such as the Republic of Ireland, Sweden and Finland. Other institutions to engage with include the National Resource Governance Institute, the Initiative for Responsible Mining Assurance and the World Resources Forum. The journal The Extractive Industries and Society is devoted to disseminating in-depth analysis of the socio-economic and environmental impacts of mining and oil and gas production on societies, both past and present.

The IGI has previously published a series of factsheets on mineral exploration and mining in Ireland, available on our website here: https://igi.ie/committees/minerals-information-working-group/.

Should you wish to engage further, representatives from the IGI are available to meet and discuss the impact of mineral exploration and mining on development in Northern Ireland.

Kind regards,

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Chair, Minerals Information Working Group

Institute of Geologists of Ireland

# Chapter 1 - Community Protections and Social Licence

## 1.1 What are the best practices for meaningful and sustained community engagement in mineral licensing?

Exploration

- Prior awareness amongst communities and stakeholders that mineral licensing is a legal possibility within their area (if it is).

- Community engagement during the exploration phase is complicated by a number of factors:

    - Exploration activities are often temporary and seasonal, and there may be long periods between activities. During those time company personnel are likely to not be in the area and unavailable for contact.

    - Exploration is by nature subject to indeterminate timelines (discovery to production can vary from 7 to >30 years) and the outcome is not clear until a Feasibility study phase. Questions from communities looking for a vision of the project progression cannot be answered with certainty or clarity.

- Face-to-face contact between operators and community members prior to activity commencement is critical.

- An up-to-date website with relevant information for community members and live email address both of which should be provided by the operator.

- Communication to community members, before, during and after activities clarifies the progress of the project.

Extraction

- By the extraction phase, the operator will have made a deep commitment to the local area and will have permanent staff and offices dedicated to the site.

- Approaches to community engagement are highly dependent on the individual characteristics of the community and must be tailored to that site.

- Options could include any combination of the following: a community-based office with a staffed desk open to the public, a WhatsApp or other messaging service actively maintained by the operator, or a dedicated phone line.

- The operator should have a staff member with a dedicated role to community engagement and clear duties assigned to management and board members to ensure community engagement is integrated at every corporate level.

References & Further Information


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- Intereconomics (2026) From principles to practice: Operationalising Europe's Critical Raw Materials Strategy. Available at: https://www.intereconomics.eu/contents/year/2026/number/2/article/from-principles-to-practice-operationalising-europe-s-critical-raw-materials-strategy.html

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- Initiative for Responsible Mining Assurance (IRMA) IRMA Standard v2.0 (Draft). Available at: https://responsiblemining.net/what-we-do/standard/standard-2-0/

- Mining 2030 Mining 2030. Available at: https://mining2030.org/

## 1.2 How can local communities participate more fully in decision-making concerning mineral licensing?

Exploration

- An online web viewer, maintained by the licensing body, showing all license boundaries, zoomable to a house level detail, with all other relevant state data (AONB etc) available on the same view is essential. This would allow community members to be fully aware of the locality under consideration.

- Sufficient detail of an operator's company description, their plans for the licence, along with any statutory environmentally protected areas identified by the licensing body should be included in the public notice when a licence or activity is advertised. Communities need to be supplied with sufficient information to understand the licence.

- The licensing body should maintain a contact point for any queries from communities and stakeholders.

- An online portal for queries, objections and submissions should be maintained by the licensing body.

- Any decisions made by the licensing body should be disseminated to the local community through a medium that has been identified as having sufficient reach, this may mean a combination of online notices and physical notices in county council offices and community centres.

Extraction

- The extraction phase here can be considered the point when the operator begins compiling a planning application and other associated permits for an operational mine.

- Public forums, hosted by an independent state body, can be used to organise public participation as early as possible to discuss and debate a project at a

time when plans can be modified. The French National Public Debate Commission has hosted several such debates relating to extraction projects in the last two years.

- More targeted stakeholder consultations are also key to reach minorities and other sections of society that may not be able to fully engage in a large-scale public forum.

- An online portal for queries, objections and submissions, dedicated to an individual extraction project should be maintained by the licensing body along with up-to-date project information.

References & Further Information


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- Commission nationale du débat public, Débat public. Available at: https://www.debatpublic.fr/en

- Gaultier, T. (2026) Mediating extractive conflicts: A practitioner's handbook for company–community disputes. Social Accord Architecture Series.

- International Finance Corporation (2014) A strategic approach to early stakeholder engagement: A good practice handbook for junior companies in the extractive industries. Available at: https://documents1.worldbank.org/curated/en/784051524469298172/pdf/125556-WP-PUBLIC-FINAL-IFC-131208-ESSE-Handbook-web-1013.pdf


## 1.3 What systems can promote transparency and accountability in community consultations?

Exploration

- Clearly identified persons of contact within the licensing body and the operator.

- Minuting and publication of outcomes of any formal community consultations.

- Stakeholder communication log recorded by the operator to be made available to the licensing body if required.

Extraction

- Clearly identified persons of contact within the licensing body and the operator.

- Minuting and publication of outcomes of any community consultations or forums.

- Stakeholder communication log recorded by the operator to be made available to the licensing body if required.

- During the planning process, independent expert consultants could be mutually agreed between community representatives and the operator to review documentation and analysis. This is not a common occurrence in the mining industry, but case examples exist.

References & Further Information


- Sibanye-Stillwater (2022) Good Neighbor Agreement. Available at: https://reports.sibanyestillwater.com/2022/download/ssw-FS22-good-neighbor-agreement.pdf

- United Nations Environment Programme (UNEP) (2020) Handbook for stakeholder engagement. Available at: https://wedocs.unep.org/items/dc645a4b-f142-4083-8b4a-9ed84e5fadba

- Wilson, E., Best, S., Blackmore, E. and Ospanova, S. (2016) Meaningful community engagement in the extractive industries: Stakeholder perspectives and research priorities. London: International Institute for Environment and Development. Available at: https://www.iied.org/16047iied

## 1.4 What are the potential societal benefits and risks with mineral licensing, and how might these be addressed?

Exploration

- The majority of the exploration phase is of very limited impact and time limited (prior to the resource definition phase immediately preceding the extraction phase).

- Societal benefits could include influx of new activities and workers into a rural area; however, this is likely to be temporary.

- Societal risks associated with mineral exploration are low due to the low impact of exploration activities unless the local community becomes uncertain of the project's outcomes and objectives.

Extraction

- Societal effects of extraction are complex and highly dependent on the individual circumstances of the project. These effects can range from positive to negative.

- Benefits could include increased employment opportunities in rural areas, reviving marginalised communities, direct supports to communities through community benefit agreements and share participation, improved infrastructure and services to the area through co-development. Any benefits to communities need to be formalised through comprehensive dialogue and formal agreements prior to the operation phase.

- Risks include social fragmentation and loss of cultural identity due to a population and economic change, land rights conflicts due to colonial histories can prevent local communities engaging with traditional landscapes. These risks can be mitigated if correctly identified and incorporated into operation objectives at the planning stage.

References & Further Information

- Ojalammi, S., Kotavaara, O., & Joutsenvaara, J. (2026). Reflections on mineral exploration, mining and environment through people's attachments and sense of place in Northern Finland. Geografiska Annaler: Series B, Human Geography, 1–21. https://doi.org/10.1080/04353684.2026.2630782

- dos Reis, V. C., Oliveira Cubi, G. M., Oliveira Cubi, G. J., Souza, F. R., Rodovalho, E. d. C., & Lima, H. M. d. (2026). Mining Impacts on Communities: A Systematic Review of Social, Economic, Environmental, Territorial, and Health Dimensions. Sustainability, 18(9), 4208. https://doi.org/10.3390/su18094208

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- Natural Resource Governance Institute (2015) The resource curse: The political and economic challenges of natural resource wealth. Available at: https://resourcegovernance.org/sites/default/files/nrgi_Resource-Curse.pdf


## 1.5 How should the regulatory framework encourage operators to secure and maintain a social licence?

Social licence is an ephemeral and ill-defined concept which means different things to different people. A consensus social licence from across a population is unlikely to be ever truly achieved, rather, it is a goal to continuously strive towards.

Exploration

- The regulatory framework can encourage exploration stage operators to work towards a social licence by requiring a stakeholder engagement plan at the beginning of licence approval, to be reported on in the statutory work reports.

Extraction

- The planning process should fully map all stakeholders and identify risks and benefits to them.

- Extraction licences could include a requirement to evaluate potential community benefit options, which could include benefit agreements, equity participation, or infrastructure ownership. These concepts are not regularly occurring within the mining industry currently but hold significant potential to enhance cooperation and partnerships between operators and communities.

- Legally binding requirements could be included in extraction licences or planning permissions to include a process for community members to regularly meet with company representatives to address and prevent mining impacts across the entire lifetime of the project.

References & Further Information


- Osisko Development (2023) Osisko Development announces issuance of shares pursuant to participation agreement with Williams Lake First Nation. Available at: https://osiskodev.com/news/news-releases/osisko-development-announces-issuance-of-shares-pursuant-to-participation-agreement-with-williams-lake-first-nation

- Prof. Dr.-Ing. Peter Goerke-Mallet, Prof. Dr. rer. nat. Tobias Rudolph, Prof. Dr. rer. pol. Jürgen Kretschmann, Technische Hochschule Georg Agricola (THGA), Bochum, Prof. Dr.-Ing. Jürgen F. Brune, Colorado School of Mines (CSM), Golden, Colorado/USA (2020) The Importance of "Social Licence to Operate" for the Mining Life Cycle. Available at: https://mining-report.de/english/the-importance-of-social-licence-to-operate-for-the-mining-life-cycle/

- International Council on Mining and Metals (ICMM) (2015) Stakeholder research toolkit. London: ICMM. Available at: https://www.icmm.com/en-gb/guidance/social-performance/2015/stakeholder-research-toolkit

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- Laurence, D. (2020) The devolution of the social licence to operate in the Australian mining industry. Extractive Industries and Society, 8(2), 100742. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC7327457/

## Chapter 2 - Economic Opportunities

### 2.1 How can the DfE support innovation that will support circularity in particular, materials recovery, secondary materials markets, recycling and circular design in manufacturing?

Key Points

- Consideration of materials recovery and secondary materials markets could be incorporated into planning applications.

- While recycling rates for certain minerals are high for certain materials across the UK and Europe, e.g. copper and aluminium, for others, such as battery materials recycling rates remain close to zero. A lack of available materials for feedstock for recycling plants has significantly hampered innovative companies.

- The DfE can foster collaboration between established, and establishing operators, and innovating technology companies through joint projects.

- An incubator financial model for new innovating companies would help these companies survive to a point of self-sustainment.

References & Further Information


- Circular Energy Storage (2025) Battery recycling in Europe: A reality check. Available at: https://www.circularenergystorage.com/post/battery-recycling-in-europe-a-reality-check

- EUWID Recycling (2024) Eramet suspends plans for EV battery recycling project in Dunkirk. Available at: https://www.euwid-recycling.com/news/business/eramet-suspends-plans-for-ev-battery-recycling-project-in-dunkirk-191124/International Council on Mining and Metals (ICMM) (2025) Measuring circularity within metals value chains: Opportunities and challenges. London: ICMM. Available at: https://www.icmm.com/en-gb/research/innovation/2025/measuring-circularity-within-metals-values-chains

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- Grafström, J., Poelzer, G. and Pettersson, J. (2026) Barriers to circularity in the metals industry: An analytical framework of feedback and lock-in effects. Mineral Economics, 39, pp. 193–205. Available at: https://doi.org/10.1007/s13563-025-00540-8


## 2.2 What are the key opportunities and challenges for sustainable minerals development?

Key Points

- There are numerous different interpretations of the meaning of the term sustainability, particularly in relations to minerals development. It is most commonly defined as meeting the needs of the present without compromising the ability of future generations to meet their needs. This can refer to both people and the environment.

- For minerals development, this requires balancing economic objectives with societal and environmental concerns.

- During the planning phase this requires consideration of the full life-time of the operation and beyond.

- Current market dynamics do not reward sustainably produced minerals as lowest cost wins. This is a global issue, which may only be improved by international government collaboration using price floor mechanisms amongst

others. The US-led FORGE initiative, of which the UK is part, aims to address these issues, however, it is only in the early stages of establishment.

References & Further Information


- International Institute for Environment and Development (IIED) (2012) Mining, minerals and sustainable development (MMSD). Available at: https://www.iied.org/mining-minerals-sustainable-development-mmsd

- United Nations Development Programme (UNDP) (2016) Mapping mining to the Sustainable Development Goals: An atlas. Available at: https://www.undp.org/publications/mapping-mining-sdgs-atlas

- United Nations DfE of Economic and Social Affairs (2025) Harnessing the potential of critical minerals for sustainable development. In: World Economic Situation and Prospects 2025. New York: UN DESA. Available at: https://desapublications.un.org/sites/default/files/publications/2025-01/WESP%202025_Harnessing%20the%20Potential%20of%20Critical%20Minerals%20for%20Sustainable%20Development_WEB.pdf

- Center for Strategic and International Studies (CSIS) (2026) Critical Minerals Ministerial introduces new international cooperation strategy. Available at: https://www.csis.org/analysis/critical-minerals-ministerial-introduces-new-international-cooperation-strategy


## 2.3 What support is needed for businesses to participate in the minerals supply chain?

Key Points

- For mineral exploration companies, global budgets are at their lowest point in over a decade at a time when new discoveries are at their lowest ever. This will lead to a gap at the very start of the minerals supply chain as current reserves reach exhaustion. Support for these companies could include such things as de-risking the licensing phase, technical assistance from the British Geological Survey, or incentives for the private investment sector to invest in the industry.

Direct financial support is unlikely to result in worthwhile returns due to the high-risk nature of the industry.

- For mining companies support can be given through consideration of the entire supply chain infrastructure, including energy, ports, smelting and processing. This would reduce the risk and complexity of entering the supply chain.

References & Further Information


- S&P Global (2026) World exploration trends 2026: What the latest data says about budgets, risk appetite and the project pipeline. Available at: https://www.spglobal.com/market-intelligence/en/news-insights/research/2026/03/world-exploration-trends-2026-what-the-latest-data-says-about-budgets-risk-appetite-and-the-project-pipeline

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- Organisation for Economic Co-operation and Development (OECD) (2025) Enhancing regional mining ecosystems in the European Union: Strengths and challenges in EU mining regions. Available at: https://www.oecd.org/en/publications/enhancing-regional-mining-ecosystems-in-the-european-union_97ba1224-en/full-report/strengths-and-challenges-in-eu-mining-regions_49afad58.html


## 2.4 Both circular economy practices and primary extraction have been identified as necessary to secure the supply of minerals for the green transition, and other essential industry. What role should we have in ensuring a secure supply of minerals?

Key Points

- Minerals supply for the scale and diversity of materials required in modern society is a highly complex, global function. No individual country has the geology or geography to host a complete supply chain for most materials.

- At home, all effort should focus on utilizing available resources (minerals and otherwise) to contribute to the supply and reduce external dependencies.

- As this will never be enough to create a full secure supply of minerals, international collaboration and partnerships with like-minded countries are also essential. The UK Vision 2035: Critical Minerals Strategy highlights the need for international engagement.

- Stockpiling is frequently promoted as a method to safeguard minerals supply from external shocks, however, without the associated processing and manufacturing industries to utilize the materials there would be no benefit to the stockpiles. Stockpiling could instead be utilized to stabilise international markets through controlled purchasing and release.

References & Further Information


- United States Geological Survey (USGS) (2024) Mineral supply chain analysis. Available at: https://www.usgs.gov/programs/mineral-resources-program/science/mineral-supply-chain-analysis

- Organisation for Economic Co-operation and Development (OECD) (2015) Critical minerals today and in 2030. Available at: https://www.oecd.org/en/publications/critical-minerals-today-and-in-2030_5jrtknwm5hr5-en.html

- UK Government (2026) Vision 2035: Critical minerals strategy. Available at: https://www.gov.uk/government/publications/uk-critical-minerals-strategy/vision-2035-critical-minerals-strategy

- Center for Strategic and International Studies (CSIS) (2026) Project Vault: A minerals security backstop. Available at: https://www.csis.org/analysis/project-vault-pillar-economic-security

## 2.5 How can the sector contribute to local employment, skills development, and regional growth?

Exploration

- Mineral exploration is typically a relatively small-scale economic activity.
- Despite the lack of size, this can lead to significant localised benefits through local employment, local contracts for equipment and supplies, and financial recompense to local landowners.
- As exploration typically takes place in rural areas, this provides a diversification of rural employment opportunities.
- A 2013 review of the economic contributions of the minerals industry in the Republic of Ireland recorded 225 employees supported directly by the mineral exploration industry during 2011. However, it should be noted that exploration activity has declined since then.

Extraction

- Contributions from mining vary significantly depending on the size of the operation, which can vary from 10s to 100s of employees.
- Most roles during operations are suitable for local employment with on-site training provided.
- Northern Ireland has a strong supply of highly educated geologists, engineers and environmental scientists to support a mining operation.
- As extraction typically takes place in rural areas, this provides a diversification of rural employment opportunities.

- A 2020 study of the closed Galmoy and Lisheen mines in the Republic of Ireland showed that during the time that mining took place, Galmoy mine had an average of 213 direct employees; 80 per cent of whom lived within 30km of the mine. Operations at Lisheen were on a larger scale, with 350 people employed during the mining phase, 74 per cent of who lived within 30km of the mine. Both mines also supported nearly 800 additional jobs in the wider economy.

References & Further Information


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- Department for the Economy (Northern Ireland) Skills and employment. Available at: https://www.economy-ni.gov.uk/articles/skills-and-employment

- Department of the Environment, Climate and Communications (Ireland) (2020) A social, environmental and economic assessment of Galmoy and Lisheen mines. Available at: https://www.gov.ie/en/DfE-of-climate-energy-and-the-environment/publications/a-social-environmental-and-economic-assessment-of-galmoy-and-lisheen-mines/


## 2.6 What are the potential economic benefits of mineral development?

Exploration

- A 2017 report on mineral exploration economic contributions in the Republic of Ireland showed €13.1 million in total exploration expenditure in 2016 with economy-wide impacts, including the direct, indirect, and induced impacts, accounting for approximately €36.2 million in output, €13.9 million in GVA, and 160 FTE jobs.

- In Finland, a total of €90.5 million was invested in exploration activities in 2024.

- Economic benefits from exploration derive from licensing fees, tax receipts, wages, purchase of goods and services.

Extraction

- A 2020 study of the closed Galmoy and Lisheen mines in the Republic of Ireland showed that the mines had €1.7 billion and €5.8 billion respectively in terms of direct, indirect and induced spending. Both mines contributed to public finances, including royalties, corporation tax, PRSI and PAYE.

- In this report it is also noted that as Galmoy exported its concentrate through New Ross Port it had a positive effect on the Port in generating revenue and supporting jobs.

- In Finland, a total of €449 million was invested in mining operations in 2024.

- Local economic benefits could be realised through novel approaches to community benefit agreements and shared participation, which are not yet standard in the mining industry but have the potential to be transformational.

References & Further Information


- Indecon (2017). An Economic Review of the Irish Geoscience Sector. Available at: https://www.gsi.ie/en-ie/publications/Pages/An-Economic-Review-of-the-Irish-Geoscience-Sector.aspx

- Finnish Government (Valtioneuvosto) (2025) Mineral exploration decreased, mining investments increased. Available at: https://valtioneuvosto.fi/en/-/5470659/mineral-exploration-decreased-mining-investments-increased


## 2.7 What are the potential economic negative impacts of mineral development?

Exploration

- As the economic potential of mineral exploration is relatively small there is little scope for negative impacts.

- Local negative impacts can be felt in the case of abrupt cessation of exploration activities, as can happen due to changes to global markets. This can result in the loss of local jobs and local spending.

Extraction

- Negative economic impacts can arise from extraction projects where insufficient planning has been put in place for local economic diversification and resilience.

- Local economies can become dependent on a mine as a source of revenue; however, all mines have a limited lifespan and will close at some point. If the area is left unprepared for the cessation of mining, it can cause significant job losses and economic harm.

- This can be countered through comprehensive closure planning which includes provisions for retraining and alternative employment post mining. Initiatives such as infrastructure sharing can also prepare the area for alternative economic activities post closure. The reclamation plan for post closure can also include economic options.

- During operation there can be a loss in traditional local economic activities, such as farming, due to the alternative employment opportunities.

References & Further Information


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- Natural Resource Governance Institute (2015) Extractives-linked infrastructure. Available at: https://resourcegovernance.org/publications/primer-extractives-linked-infrastructure

## Chapter 3 – Legislative and Regulatory Framework

### 3.1 Are current legislative frameworks adequate to manage mineral exploration and extraction?

Exploration

- Minerals licensing is primarily governed by the Mineral Development Act (NI) 1969. This is supported by secondary legislation. As the core framework dates from the 1960s, it predates modern environmental law, climate policy, and community participation norms.

- Current strengths include a clear licensing authority for mineral prospecting licences and established procedures.

- The relatively large scale of mineral prospecting licences, when compared to other European countries, could potentially affect competition and community participation.

Extraction

- Strategic Environmental Assessment and Habitats Regulation Assessment are not currently embedded into licensing decisions.

- Current policies are not aligned with net-zero targets, circular economy principles and critical minerals strategies.

References & Further Information

- Department for the Economy (Northern Ireland) Minerals and petroleum legislation and policy. Available at: https://www.economy-ni.gov.uk/publications/minerals-and-petroleum-legislation-and-policy

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- UK Government (2026) Vision 2035: Critical minerals strategy. Available at: https://www.gov.uk/government/publications/uk-critical-minerals-strategy/vision-2035-critical-minerals-strategy

## 3.2 What changes, if any, would you recommend to improve the legislative framework?

This minerals licensing consultation is part of the recognition by the DfE that the primary legislation is outdated and is in the process of being updated. This is a key step to improving the legislative framework.

Exploration

- The maximum mineral prospecting licence size could be reduced, see 3.5 below.

- Environmentally protected areas should be screened by the licensing body during the licence application procedure and exploration activity notifications, using best scientific knowledge and guided by the conservation objectives of the areas.

- Full justifications for licence decisions should be published along with an online portal with real time, zoomable maps of licences and applications.

- Simplification of exploration activities permitting, particularly drilling, through a single point of contact, with regulatory oversight.

Extraction

- An updated legislative framework should embed climate change obligations and net-zero targets, align with modern environmental law and reflect the UK critical minerals strategy.

- Community consent mechanisms should be integrated into mine permit applications with consideration of novel approaches to community benefit agreements and share participation.

- A mechanism to form an independent review panel, formed of experts agreed by all sides, in the case of controversial projects could help improve transparency and public confidence, providing the outcomes are given sufficient weight in decision-making.

- A mandatory financial bond for site restoration post closure is an essential part of a modern mining framework. This would need to be periodically reviewed to ensure any potential changes are reflected.

References & Further Information


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- Hattingh, R., Stevens, R. and Bliss, M. (2021) Mining-related financial assurance. In: Global review: Financial assurance governance for the post-mining transition. Winnipeg: International Institute for Sustainable Development (IISD), pp. 1–9. Available at: http://www.jstor.org/stable/resrep40461.4


## 3.3 How should mineral development align with broader environmental, economic, and energy policies?

Key Points

- Minerals development should aim to positively contribute to environmental, economic and energy policies.

- Alignment with environmental policies could include consideration of national and local protected areas within each licensing phase. For extraction licenses, environmental net gain clauses could be included in requirements.

- Minerals development aligns with economic policies through exchequer revenues, Gross Value added to the economy and rural development.

- Extraction operations are typically high energy users, which could cause conflict with energy policies aimed at enabling the green transition. This could be overcome through percentage renewable energy requirements, incentives towards the use of renewable energy or fostering collaboration between renewable energy providers and mining developers.

References & Further Information


- Natural Resource Governance Institute (2014) Natural Resource Charter. Available at: https://resourcegovernance.org/sites/default/files/NRCJ1193_natural_resource_charter_19.6.14.pdf

- World Economic Forum (2025) Nature positive: Role of the mining and metals sector. Insight report. Available at: https://reports.weforum.org/docs/WEF_Nature_Positive_Role_of_the_Mining_and_Metals_Sector.pdf


## 3.4 What role should other stakeholders play in regulating mineral licencing?

Exploration

- Mineral exploration is a low impact activity which should be regulated by a professional staffed and properly resourced single body, collaborating, when necessary, with other state bodies such as the Northern Ireland Environment Agency when needed.

Extraction

- Extraction licensing should be regulated by the appropriate regulatory body for each type of permit required, typically but not limited to mines license, planning permission, and various environmental licenses. Each regulatory body should have sufficient expertise to be responsible for issuing these permits.

- As far as possible regulations should aim for 'a one-stop shop' to avoid planning duplication and to shorten the time frame for planning decisions.

- Non-regulatory bodies, in the form of civil protection groups, are an important check on the mining industry but should not be relied on to fill governance gaps.

References & Further Information


- Mandela Institute, University of the Witwatersrand (2017) Public regulation and corporate practices in the extractive industry: A South–South advocacy report on community engagement. Available at: https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-entities/mandela-institute/documents/research-publications/Public%20Regulation%20and%20Corporate%20Practices%20in%20the%20Extractive%20Industry,%20a%20Mandela%20Institute%20report.pdf


## 3.5 Should the current maximum licence area of 250km$^2$ be changed? If so, please include evidence of the benefit of the proposed change.

Key Points

- In the Republic of Ireland, a prospecting licence usually covers some 35 sq. km.

- In Finland there is no restriction on maximum size for an exploration permit, however, the average current size is approximately 9 sq. km (April 2026). In Sweden there is no restriction on maximum size for an exploration permit, however, the average current size is approximately 28 sq. km (April 2026). Applicants must provide a detailed rationale for the size of the permit.

- Allocating licences that are larger than an operator can realistically explore within a reasonable period may create conditions that limit competition and community participation.

- A costed Scheme of Prospecting (work program) and its rationale is a current requirement of a mineral prospecting licence application and subsequent reviews. This scheme could be used to refine the boundary of the licence.

References & Further Information


- Geoscience Regulation Office (GSRO) (2025) Rules for mineral exploration in Ireland. Available at: https://assets.gov.ie/static/documents/82f1b7b7/GSRO_Rules_for_Mineral_Exploration_in_Ireland_.pdf

- Finnish Safety and Chemicals Agency (Tukes) Exploration. Available at: https://tukes.fi/en/industry/mining-ore-prospecting-and-gold-panning/exploration

- Geological Survey of Sweden (SGU) Mineral permits and exploration. Available at: https://www.sgu.se/en/products/geological-data/ores-and-minerals--geological-data/mineral-permits-and-exploration/


## 3.6 What are your views of the current six-year term for an MPL. If you believe a change is required, what should the maximum term be, and what evidence supports this change?

Key Points

- In the Republic of Ireland and Finland prospecting licence/exploration permit terms are six years with the potential for renewed 6-year terms. In Sweden, exploration permits are valid of 3 years with the possibility for extension for 15 years.

- Mineral commodity cycles tend (roughly) to operate on a 7-year cycle. Minerals prospecting licence terms should ideally be structured to allow companies to take advantage of favourable market conditions while also retaining tenure through downturns, enabling projects to progress despite fluctuations in budgets and commodity prices.

References & Further Information


- Geoscience Regulation Office (GSRO) (2025) Rules for mineral exploration in Ireland. Available at: https://assets.gov.ie/static/documents/82f1b7b7/GSRO_Rules_for_Mineral_Exploration_in_Ireland_.pdf

- Finnish Safety and Chemicals Agency (Tukes) Exploration. Available at: https://tukes.fi/en/industry/mining-ore-prospecting-and-gold-panning/exploration

- Geological Survey of Sweden (SGU) Mineral permits and exploration. Available at: https://www.sgu.se/en/products/geological-data/ores-and-minerals--geological-data/mineral-permits-and-exploration/


## 3.7 Do you consider the current £450 fee for an MPL appropriate? If not, what would a more appropriate fee be and what evidence supports your view?

Key Points

- In the Republic of Ireland an application fee for a prospecting licence is €190, however, there is also a consideration fee which must also be paid before a licence is issued ranging from €750 in year 1 to €2,500 for all years after the 6th year.

- In Finland exploration permit application fees range from €120 on forested land, €365 in Natura 2000 areas, and €730 on Sámi land. Fees to every landowner within the permit area are paid on an annual basis for the duration of the permit.

- In Sweden an exploration permit application fee of SEK 500 (£40) is paid per 2,000 Ha (20 sq km) or part thereof. On granting of a permit there is also a fee of SEK 20 (£1.6) per Ha, which would amount to £3,200 for a 20 sq km permit.

- A key component of exploration permit applications is evidence by the operator that they have the capacity and technical knowledge, along with financial resources, to undertake the planned exploration.

References & Further Information


- Geoscience Regulation Office (GSRO) (2025) Stakeholder Guidance Document Mineral and Petroleum – Exploration and Production. Available at: https://assets.gov.ie/static/documents/09fe3ad4/GSRO_Stakeholder_Guidance_Document_for_Mineral_and_Petroleum__Exploration_and_Production.pdf

- Geoscience Regulation Office (GSRO) (2025) Rules for mineral exploration in Ireland. Available at: https://assets.gov.ie/static/documents/82f1b7b7/GSRO_Rules_for_Mineral_Exploration_in_Ireland_.pdf

- Finnish Safety and Chemicals Agency (Tukes) Fees. Available at: https://tukes.fi/en/online-services/fees

- Geological Survey of Sweden (SGU) (no date) Minerals ordinance (1992:285). Available at: https://www.sgu.se/en/mining-inspectorate/legislation/minerals-ordinance-1992285/


## 3.8 Is the current consultation process adequate? If not, what improvements would you suggest? Please provide evidence to support your suggestions.

Exploration

- The scale of the submissions and objections to the current mineral prospecting licences in Northern Ireland suggest that current consultation process is not adequate.

- Improvements could include the suggestions from 1.2. above such as a live web viewer of licences and applications and online portal for information and submissions.

- The 2025 DfE consultation summary report highlighted that misunderstandings of the framework of minerals licensing are prevalent, for example the difference between prospecting/exploration and mining. This suggests that the foundation of free, prior and informed consent is absent as the knowledge base is not present.

Extraction

- Prior to the extraction phase, improvements could include the suggestions from 1.2. and 1.5 above such as public forums, tailored stakeholder consultations and online portals.

References & Further Information


- Department for the Economy (Northern Ireland) (2025) Consultation summary report for mineral prospecting licence applications – May 2025. Available at: https://www.economy-ni.gov.uk/publications/consultation-summary-report-mineral-prospecting-licence-applications-may-2025

# Chapter 4 - Environmental Issues

## 4.1 What are the environmental impacts associated with mineral exploration?

Key Points

- Mineral exploration comprises low impact, temporary activities which can be classed as direct and indirect.

- Indirect activities generally consist of geophysical surveys, remote sensing and computer-based interpretation. Geophysical surveys are undertaken by placing sensors on or above the ground surface and recording physical properties. They are generally conducted by people on foot carrying the equipment. These activities leave no physical trace on the environment.

- Direct activities include rock hammer sampling, soil auger sampling, trenching and diamond core drilling.

- Rock hammer sampling consists of a geologist on foot using a hand hammer to break fist-sized pieces of rock to examine and send for geochemical analysis. Only the sample removed is impacted.

- Soil auger sampling consists of personnel on foot using an auger or shovel to remove a fist sized piece of soil from approx. 30cm to 1m below the sod, which is returned in place. This leaves no trace.

- Trenching consists of the use of mechanical excavation of the soil to expose the rock surface over 5 to 20m length or more for examination and sampling. This requires careful separation and storage of the soil layers, their re-emplacement and rehabilitation so as to leave no trace.

- Diamond core drilling consists of a rotating drill bit which cuts a cylinder of rock from the subsurface and brings it to the surface. The drill rig and its platform is generally less than 5m by 10m. Typical drilling depths vary from 150m to 2km and can take place over a duration of a week to months. Environmental impacts from drilling can include:

- Noise, which can be alleviated through sound barriers.

- Ground disturbance and compaction, which can be prevented through use of platforms and mats. If a drill rig has been in place for more than several weeks, the vegetation may need rehabilitation and reseeding where appropriate.

- Risk of small-scale oil, diesel and other chemical leaks if inadequate machinery maintenance and housekeeping is maintained. This can be prevented by high standard drill contractor operating procedures, in conjunction with preparedness for incidents with readily available spill mats and kits.

- Groundwater contamination through mixing of water types. Drill rigs typically use water as a lubricant and flushing medium, however, introduction of surface water to groundwater can cause changes to the groundwater environment. To avoid this treated water can be used.

- Increased connectivity between aquifers; in some cases, it may be possible that a drill rig core through one aquifer into another separate aquifer which may create a pathway for groundwater mixing that otherwise would not have occurred. This can be avoided through careful study of available aquifer mapping and characterisation.

References & Further Information


- Department of the Environment, Climate and Communications (Ireland) Guidelines for mineral exploration and production. Available at: https://www.gov.ie/en/DfE-of-climate-energy-and-the-environment/publications/guidelines-for-mineral-exploration-and-production/

- Department of the Environment, Climate and Communications (Ireland) Environmental effects of certain exploration methodologies. Available at: https://www.gov.ie/en/DfE-of-climate-energy-and-the-environment/publications/environmental-effects-of-certain-exploration-methodologies/

- Prospectors & Developers Association of Canada (PDAC) E3: Driving responsible exploration. Available at: https://pdac.ca/driving-responsible-exploration

## 4.2 What are the environmental impacts associated with mineral extraction / mining?

Key Points

- The environmental impacts associated with mining are incredibly varied and are dependent on the individual circumstances of each site as every mine operation and its location is unique.
- At the highest level, some key aspects include:
    - Water protection from contamination and excessive abstraction.
    - Loss of habitat through ground use change.
    - Long term waste storage.
    - Noise pollution.
    - Dust and air contamination.
    - Carbon emissions from high energy use.

References & Further Information

- European Parliament (2022) Social and environmental impacts of mining activities in the EU. Available at: https://www.europarl.europa.eu/RegData/etudes/STUD/2022/729156/IPOL_STU%282022%29729156_EN.pdf

- Massachusetts Institute of Technology (MIT) Sustainability Initiative (2024) Understanding the impacts of mining on local environments and communities. Available at: https://sustainability.mit.edu/article/understanding-impacts-mining-local-environments-and-communities

## 4.3 What environmental safeguards need to be put in place for mineral exploration?

Key Points

- Ensuring that operating companies have procedures in place that adhere to best practice for each activity in their work plan.
- Impacts of cumulative work should be considered by the licensing body.
- Regular ongoing monitoring of activities by the licensing body through site inspections and email updates with photographic evidence.

References & Further Information

- Department of the Environment, Climate and Communications (Ireland) Environmental effects of certain exploration methodologies. Available at: https://www.gov.ie/en/DfE-of-climate-energy-and-the-environment/publications/environmental-effects-of-certain-exploration-methodologies/
- Prospectors & Developers Association of Canada (PDAC) E3: Driving responsible exploration. Available at: https://pdac.ca/driving-responsible-exploration
- Environmental Protection Agency (2020) Good Practice Guidance on Cumulative Effects Assessment in Strategic Environmental Assessment. Available at: https://www.epa.ie/publications/monitoring--assessment/assessment/strategic-environmental-assessment/EPA-Good-Practice-Guidelines-SEA.pdf

## 4.4 What environmental safeguards need to be put in place for mineral extraction / mining?

Key Points

- Environmental safeguards for mining should be tailored to each individual site as every operation and location is unique.

- At a minimum, environmental safeguards should include protection of groundwater, surface water, and habitats, and measures to ensure safe long-term storage of waste materials and consideration of carbon emissions.

- Acid rock drainage (or acid mine drainage where it has been exacerbated by extraction) of sulphide minerals is often considered the most significant environmental impact from mining. Prevention needs consideration and monitoring of pyrite oxidation, metal mobilisation and long-term water quality impacts throughout the planning and extraction phases.

- These safeguards should be agreed through collaboration between the operator, regulatory bodies and local communities and enforced by the regulatory bodies and legally binding agreements.

References & Further Information


- Akcil, A. and Koldas, S. (2006) 'Acid mine drainage (AMD): causes, treatment and case studies', Journal of Cleaner Production, 14(12–13), pp. 1139–1145. Available at: https://doi.org/10.1016/j.jclepro.2004.09.006.

- International Council on Mining and Metals (ICMM) (2025) Tailings management: Good practice guide. London: ICMM. Available at: https://www.icmm.com/tailings-management

- Global Tailings Review (2020) Global industry standard on tailings management. Available at: https://globaltailingsreview.org/wp-content/uploads/2020/08/global-industry-standard_EN.pdf

- Global Tailings Management Institute. Available at: https://thegtmi.org/

- Global Witness (2025) Assessing the climate impacts of transition minerals mining: Crucial factors for building decision-making frameworks. Available at: https://gw.hacdn.io/media/documents/COP30_expert_paper.pdf

## 4.5 What types of mitigation measures are appropriate to address environmental impacts from mineral exploration?

Key Points

- Mineral exploration is typically composed of low impact activities which need very little mitigation.

- Mitigation measures for diamond core drilling can include noise protection and water recirculation.

References & Further Information

- Department of the Environment, Climate and Communications (Ireland) Environmental effects of certain exploration methodologies. Available at: https://www.gov.ie/en/DfE-of-climate-energy-and-the-environment/publications/environmental-effects-of-certain-exploration-methodologies/

- Prospectors & Developers Association of Canada (PDAC) E3: Driving responsible exploration. Available at: https://pdac.ca/driving-responsible-exploration

## 4.6 What types of mitigation measures are appropriate to address environmental impacts from mineral extraction / mining?

Key Points

- Mitigation measures for mining must be tailored to each individual site as every operation and location is unique.

- Some mitigation measures could include:

    - Low water use mining where water is recycled as much as possible to limit abstraction and vulnerability during low water availability periods.

    - No net loss or net gain habitat measures where the equivalent loss of habitat from the mine operation is preserved elsewhere, financed through the mine.

    - Reduction of waste through precision mining and use of secondary materials either as products sold off site or for use on site such as backfill.

    - Adoption of electric vehicles and machinery where possible along with renewable sources of energy to limit carbon emissions.

- Reclamation is the process of returning the land disturbed by mining activities to a stable, ecologically functional or economically usable state. This process is most effective when integrated at the planning stage, before any extraction. It includes aspects such as land suitability analysis, soil reconstruction, revegetation, and long-term geochemical stability of waste material amongst others.

- These measures should be agreed through collaboration between the operator, regulatory bodies and local communities and enforced by the regulatory bodies and legal binding agreements.

References & Further Information


- Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) (2017) Understanding government biodiversity offset policies in the mining sector. Available at: https://iucn.org/sites/default/files/2022-

06/understanding_government_biodiversity_offset_policies_in_the_mining_sector_november_2017.pdf

- International Council on Mining and Metals (ICMM) (2006) Good practice guidance for mining and biodiversity. London: ICMM. Available at: https://www.cbd.int/development/doc/minining-and-biodiversity.pdf

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