MINING INDUSTRY LEADERSHIP GROUP

SECTOR STRATEGY (2023-2028)

LEADING THE WAY IN RESPONSIBLE MINING



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PURPOSE

Purpose

This Leadership Strategy has taken direction from the UK Mineral Sector's collaborative approach to maintaining the recognition for, relevance, and support for the UK's Minerals supply chain – in terms of Critical and Essential Minerals.

On this broader role within the Minerals Sector, the Mining Association of the UK has formed a view on this collaboration and defined it into six broad areas:

- Mine Identity & Mineral Awareness
- Responsible Mining
- The Future Miner
- Competency in Mines
- Mine Smart
- Infrastructure

This document aims to align the approach within the sector leadership group around several of those areas.

Scope

This sector strategy document covers the health and safety systems as defined in the Mines Regulations 2014 and the range of operations, including;

- Active mining operations.
- Emerging operations and developing mining projects.
- Mines being accessed and reopened for future operations.
- Other operations, which are not directly associated with the production of minerals, include:
- Tourist mines and mines used for adventure and educational activities.
- Storage mines (including Geological Disposal Facilities.)
- Previously closed or mothballed operations that continue to be accessed for maintenance purposes.

The Mines Regulations 2014 identify the risks associated with low-frequency, high-potential incidents. Many such incidents span the UK's history of coal and non-coal mining. Reducing the likelihood of these types of incidents aligns with the sector strategy goal of avoiding catastrophe.

The scope of the strategy has been extended beyond health and safety regulations to acknowledge the requirement for exemplary stewardship in the areas of:

- Environmental performance
- Social engagement
- Organisational governance

"Modern Society is quite literally build on rocks"

(Rt Hon Kwasi Kwarteng, Secretary of State for Business, Energy and Industrial Strategy) [The United Kingdom's Critical Minerals Strategy, July 2022]

There is an expanding reliance on the development and use of minerals nationally and internationally, with "the world in 2040 is expected to require four times as many critical metals for clean energy technology as it does today."

[IEA (2021), The Role of Critical Minerals in Clean Energy Transitions]

Income relating directly to the production and sales of mineral produced in the UK represented approximately £21.1bn, the equivalent of 1% of GDP (£2,250bn.)

[CBI Minerals Yearbook, 2020]

In 2018, the UK Mineral Strategy estimated the economic importance of mineral production on the wider UK economy, on the £18bn related to direct income there was estimated to be approximately £235bn of gross value add related directly to mineral extraction, products manufacture & first use markets. This represents approximately 16% of GDM, and an industry that directly employs almost 34,000 people.

[UK Minerals Strategy Mineral Product Association,2018]



The UK Mining Sector

The UK mining sector comprises around 27 underground mines covering ten different minerals, operated by large employers and SMEs. The growth seen within the sector in recent years is set to continue, as the strategic importance of minerals required to support a growing population and the decarbonisation of the UK and global economies.

The UK Government, in its report *Resilience for the Future: The United Kingdom's Critical Minerals Strategy [July 2022]*, has identified three key areas that align with the aims of the Mining Industry Leadership Group (MILG):

1. *Accelerate the UK's domestic capabilities,* maximise what the UK can produce domestically where it is viable for business and where it works for communities and the natural environment.
2. *Rebuild our skills in mining and minerals,* training the next generation of miners, geologists, engineers and beyond.
3. *Research and development,* to solve critical mineral supply chain challenges, promote innovation and re-establish the UK as a centre of critical mineral and mining expertise.

Whilst the UK government has introduced the first critical minerals strategy, there continue to be a range of challenges for the UK mining sector, which include:

- The ability to attract and retain suitable candidates for the operational management and engineering functions, given the competition in the international mining sector and from other UK sectors looking for similar skills.
- There is a skills shortfall which could continue to develop within the duration of this sector strategy (5 years.) This challenge may be further exacerbated by the expected growth in the sector and the potential loss of UK-based educational centres, coupled with the present demographics of the workforce.
- The UK mining sector is currently considered too small to support a supply chain of specialist equipment and material manufacturers. This can cause difficulties with equipment choice, availability, and compliance with standards. The mining equipment manufacturers continue to export c£1bn per annum *(source: ABMEC)*
- The potential requirement for specialised mines rescue operations is now supported by several private companies that provide training to part-time 'rescue operatives' in rescue techniques and, in some cases, the use of specialist breathing apparatus. The effectiveness of the arrangements is almost entirely reliant on mutual aid between mine operators, with little or no support being available from local authorities

Employment Trends

Mining jobs are considered well-paid compared to other manual occupations. Mining is generally perceived as a dirty and, partially from historical events, a potentially dangerous and unattractive job.

There is likely to be an increasing demand across the sector for new entrants to:

1. Replace an ageing workforce.
2. To meet the needs associated with the development and expansion of current operations.
3. Meet the increasing demand for raw materials and the introduction of new operations across a range of minerals.

The fundamentals of mining will largely remain the same, and the skills required to operate the underground mines of the future successfully will become increasingly diverse.

Regulation

The Mines Regulations 2014 came into force on 6th April 2015. While the negotiated withdrawal from the European Union has not significantly changed the regulatory environment, the UK must develop standalone legislation. This critical sector must be involved in key areas that may influence the planning, development, and operation of underground mining in the UK.

The regulator, the Health and Safety Executive (HSE), and specifically HM Inspectorate of Mines, regulate the health and safety of underground mines throughout Great Britain. The Inspectorate comprises of mining, mechanical and electrical engineering specialists. This specialised group has, without exception, traditionally been recruited from or had the experience of working in the underground mining sector. In the medium term, the HSE may have similar issues with recruiting and retaining the required skills.

Influences

1. The prominent influences on mining within the UK are:
2. Operator bodies, such as the Mining Association of the UK (MAUK), come together to share best practices and support the work of other peer organisations and associations.
3. Groups considered as specialist bodies or having and maintaining competencies within specific areas, e.g., professional institutions, education centres, organisations involved in maintaining effective mines rescue arrangements, and equipment suppliers/manufacturers.
4. Other networked groups that focus on specific subjects or speciality, such as the HSE-supported Engineering Liaison Group or the MAUK and ABMEC-led Central Engineering Forum that consider national and international best practices associated with general mine engineering, along with specialist engineering associated with the safe operation of shafts or the operation of complex plant and equipment in an underground mine environment.
5. The UK Mining Education Forum networks sector representatives through a common need to attract new talent into the minerals and mining sector.

Production and Service Trends

The demand for raw materials to support the UK and international construction and manufacturing sectors is likely to increase outputs in the medium term.

UK MINING SECTOR

In addition to established minerals, the UK is likely to see a diversification in underground mining and other subsurface extraction methods into minerals that support the decarbonisation and modernisation of energy and transport. The growing global population will require increased crop yields supported by access to organic fertilisers.



The sector considers that mining techniques applied in the future will be those that have been established and refined over many years; however, the development of new mineral resources or the need to increase production capabilities to meet growing demands will lead to the introduction of new techniques and/or technologies.

Health and Safety Issues

The Mines Regulations 2014 identify the major mining hazards, and these, in parallel with other established regulations, provide a framework for identifying and controlling these hazards.

The nature and, in many cases, the remoteness of the operations means that apart from tip operations, there is little potential for off-site impact.

In considering the control of the major mining hazards, one potentially concerning issue is the continued loss of skilled management, supervision, and general experience. There is an emerging imperative that the sector aims to address through the development of sector-wide schemes that engages all operators in developing sector-specific competencies underpinned with programs designed to deliver and assess the required knowledge and skills (competence) to operate within the underground environment.

The resurgence and expansion of the UK mining sector has introduced new hazards relating to new technologies. Developing new mineral resources will influence the design, installation, maintenance, and operation of new assets.

Additionally, many established operations must develop innovative solutions to ensure ageing assets and structures can remain operational without risk to health and safety.

For mining to continue to be accepted and remain relevant in the UK, it is becoming increasingly important that the sector further embrace the issues associated with its overall environmental impact and the way it operates within communities and shapes society, supported by the transparency and effectiveness of organisational governance.



Strategy Goals

The aims and objectives within this section have been devised to address the issues highlighted in the previous section. The strategy goals will cover the areas:

1. Major hazards and avoiding catastrophe; and
2. Developing competence (skills and education); and
3. Emergency preparedness and dealing with emergencies; and
4. Healthier workplaces; and
5. Environmental, society and governance (ESG)

The sector strategy will incorporate the key leadership requirements into each strategic goal.

The sector will utilise the Mining Industry Leadership Group Meetings to hear reports from groups responsible for developing and delivering the sector strategy. These reports and information derived from incidents, suppliers and other sources will be used to define priorities for delivery and improvement in the subsequent six months.

Sector Goal – Major Hazards and Avoiding Catastrophe

Aim One

As the principles of the Mines Regulations 2014 are embedded, the mine operators will use the information gained to refine and improve, in line with the hierarchy of controls, how the risks from these types of hazards are identified, evaluated and managed.

Objectives

- Leaders understand the nature of the major hazard risks that can arise in their businesses and monitor the extent to which control systems are in place and are working.
- Leaders support the development of mine management to ensure they are equipped with the skills and knowledge to monitor the effectiveness of major hazard controls within the operational environment and have the confidence to intervene at the appropriate time.
- Leaders support the development of the workforce (new and existing) to ensure that they are equipped with the skills and knowledge to apply the proper controls in the workplace.
- Leaders consider how other major hazard industries have utilised various approaches to identifying, evaluating, and combatting significant risk.

Activities for Delivery

- Mine operators will take steps to identify and prioritise key major hazard safety performance indicators and ensure that adequate arrangements are in place to identify trends and take appropriate preventative action. Where necessary, commissioning research and arranging for scientific and technical support.



- Mine operators work together to define the appropriate skills and knowledge across the sector for the roles with a high potential to influence major hazard outcomes, with a view to this becoming the minimum standard throughout this strategy.
- Leaders will ensure that major hazard incidents are thoroughly investigated, and as far as is reasonably practicable, the key outcomes are shared as early as possible with other operators.
- HSE will further develop its hazard and risk-based intervention strategy and share key findings and learning to support the sector in achieving its aims.
- Leaders use forums such as MAUK, ABMEC, MILG, and IOM3 to share best practices for introducing new technologies and the processes utilised to identify, evaluate and combat emerging risks.

Aim Two

Mine operators (or operators of similar underground facilities) have suitable arrangements for measuring and benchmarking their safety performance in place.

Objectives

- The sector identifies and uses appropriate major hazard safety performance measures and improves its analysis of the health and safety data it collects.

Activities for Delivery

- Leaders will take further steps to identify and prioritise key major hazard safety performance indicators and ensure adequate arrangements are in place to identify trends and take appropriate preventative action when necessary.
- Mine operators will consider a way of sharing best practice, and presenting information in a way that informs the wider sector.
- HSE will prepare an annual summary report to MISLG on its findings from all interventions.

Sector Goal – Developing Competence

Aim Three

Employees at all levels develop to appropriate levels of competence concerning the tasks they undertake and their responsibilities for health and safety risk control within their areas of activity.

The principles of effective health, safety and business performance depend on the competence of the entire workforce, including management and supervisors.

Objectives

- Leaders within mine operating companies will commit resources to review existing and develop appropriate standards and development pathways to support the underground mining industry of the future. The standards should consider progression from new entrants to the development of senior management, covering the range of mining and other technical functions.
- Leaders from within the sector will allow their organisations to collaborate to develop a common approach to delivering and assessing competencies and easily share training and assessment resources.
- Leaders will work in cross-educational organisations to encourage and promote the entry of young people into the underground mining sector.
- The HSE will share information on how they see competence developing within the sector, giving an annual assessment of the sector against the competency assessment document created through inclusion in a structured hazard-based intervention strategy.
- Where requested / appropriate, HSE will continue to facilitate committees that are key to developing and sharing best practice (for example, Engineering Liaison).

Activities for Delivery

The sector:

Agrees on a minimum common standard for various roles, recognising that organisations may have internal and corporate requirements.

Works collectively to establish agreed routes for progression, defining the knowledge skills and behaviours (competence) appropriate to key roles.

Works together to develop sustainable education programmes to create the knowledge and skills to support industry objectives and make these programmes accessible to individuals from all backgrounds.

Will actively promote the minerals and mining sector where young people are already in education, demonstrating alternative, exciting, and rewarding areas of career progression within the mining sector.

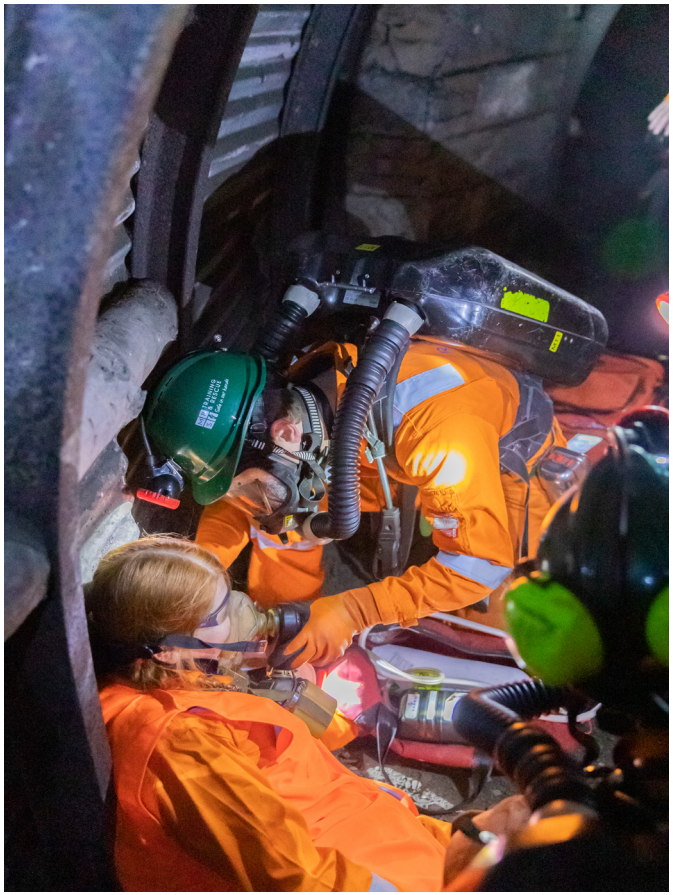
Sector Goal – Emergency Preparedness and Dealing with Emergencies

Aim Four

The sector strategy broadly focuses on preventing major incidents by avoiding catastrophes and developing competencies at all levels. There is an ongoing requirement to ensure that in the event of an emergency, the sector is prepared to deal with a range of situations where the regular emergency services can often offer little assistance.

Objectives

- Review current arrangements to ensure that they are sustainable and can evolve to meet the needs of a growing sector.
- Leaders within the operating companies define the minimum requirements for any rescue arrangements. This will need to recognise the variation in operations and risks.
- Leaders will consider the skills that the managers and supervisors need to effectively deal with an incident in its early stages of development.
- Leaders to engage with the broader rescue community to look for improvements and technology that may enhance the UK's mines rescue arrangements.
- Leaders will work to ensure the effectiveness of the arrangement between mine operators and service providers.



Activities for Delivery

- The training arrangements for part-time mine rescue personnel is agreed upon, with a view to being able to share resource across the sector.
- Development of a common standard to support the development of mines rescue resources across the UK.
- Identify and agree on common approaches to developing and maintaining rescue operatives, rescue supervisors and those with management and leadership responsibilities in an emergency situation.
- Schedule routine mock emergency practices to test the emergency arrangements and personnel to their fullest extent.
- HSE will undertake structured interventions with mine operators and mines rescue suppliers.
- Review the approaches to emergency preparedness and response in other high hazards (COMAH) operations and consider how these may enhance the sector's response.

Sector Goal – Healthier Workplaces

Aim Five

The mining sector will effectively manage key health issues.

Objectives

- Leaders recognise the age of some of the workforce and have suitable medical and other screening processes to manage the wider health issues.
- Leaders will work to reduce exposure to harmful substances in the workplace and proactively work towards achieving workplace exposure levels that are as low as reasonably practicable.
- Leaders actively consider the application of new technologies, new mining practices and the extraction of new minerals.



Activities for Delivery

- Operators recognise that health exposure is often only recognised in the longer term and should be managed through suitable industrial hygiene schemes.
- Operators of hot and humid mines will identify how, in the short to medium term, working practices might change to reduce exposure to high temperature and humidity and consider how in the long term, mines might be planned to reduce temperature and humidity.
- Operators will assess the effect of shift patterns and length on workers' health.
- Development of suitable medical screening arrangements relative to the mining sector.
- Encouragement of the workforce to attend these screening facilities.
- Reducing exposure to carcinogenic substances (for example, diesel exhaust emissions.)
- Reduction in the broader health issues, including mental health and personal well-being affecting operators and their families within the mining sector.
- HSE will continue occupational health interventions.

Sector Goal – Enviable Environmental, Social and Governance Models

Aim Six

The mining sector will set the standard for organisational responsibility for environmental stewardship, social responsibility, and effective governance and changing the perception of underground mining as a dangerous job undertaken in hot and dirty conditions.

Objectives

- Leaders recognise their organisations' impact on the communities in which they operate.
- Leaders will work to engage with the communities in which they operate.



SECTOR GOALS



Activities for Delivery

- Operators create accountability for external commitments, ensuring that ESG becomes a part of how a business operates from exploration and operation to decommissioning.
- Operators quantify the potential impact of a failure on the local environment and broader society in the areas in which their business operates.
- Operators will test the elements of the ESG policies regularly, with key learnings informing improvements.
- Operators will share the outcomes of rigorous testing and auditing with senior management to inform internal improvements and, where appropriate, with the wider mining community to allow general learning and improvement.
- Operates will establish the values of environmental stewardship, social impact, and good governance across the wider supply chain.
- Review operations in terms of economic and social impact through good governance. This will include the mining life cycle, of the concept, through planning, development, operation, and closure.



Delivering

Ways to Achieve the Aims and Objectives

The Mining Industry Leadership Group should continue as the main forum for promoting responsible mining practices, exchanging information and sharing success. In addition to delivering its core regulatory function, HSE's priorities support improved health and safety performance in the sector. The major hazard leadership, competence and safety performance measurement and intervention process will continue.

As part of delivery, the industry leadership group will establish working groups to monitor progress on delivering the sector goals and aims and report to the industry leadership group.

Whilst maintaining its independence, the mining industry leadership group (MILG) will be co-facilitated and co-sponsored by the Mining Association of the UK (MAUK).







