



(COP 40) MINE REHABILITATION AND CLOSURE

A *Definitions and applicability*

Mine closure is a process undertaken when the operational stage of a mine is ending or has ended, and the final decommissioning and mine rehabilitation is being underway.

Mine rehabilitation is the restoration of the post-mined landscape to the intended post-mining land use.

Mine completion is the goal of mine closure. A completed mine has reached a state where mining lease ownership can be relinquished and responsibility accepted by the next land user.

Source:

- *Leading Practice Sustainable Development Program for the Mining Industry (Australia) - Mine Closure and Completion (2006)*
www.ret.gov.au/resources/Documents/LPSDP/LPSDP-MineClosureCompletionHandbook.pdf

The **Mine Rehabilitation and Closure** section of the COP is applicable to Mining Facilities.

The **Mine Rehabilitation and Closure** provisions of the COP should be read and implemented alongside the **Community Engagement, Tailings and Waste Rock, Biodiversity** and **Impact Assessment** provisions.

B *Issue background*

The closure of mine sites needs to be planned as carefully as their opening. What happens at a site after it is closed is what ultimately defines its long-term impact on, and contribution to, an area's social, economic and institutional development. An integrated approach to closure takes the environmental, economic and social considerations into account from an early stage and continues throughout a mine site's life. Fundamental to this approach is the need to consider closure as a core part of the business.

The social and economic impacts of mine closure are usually significant and underline the importance of early preparation. Mines may also close prematurely, for example through low commodity prices, regulatory changes, technical challenges or social conflict – not just depletion of reserves. Workers, affected communities, including Indigenous Peoples and artisanal miners, and regulators are key stakeholders in dialogues about mine closure and should be involved early in the planning process. Mine sites should place a strong emphasis on community participation in the development and implementation of a mine closure plan.

Mine sites should provide adequate financial assurance for mine closure, taking into account considerations such as post-mining land use, stakeholder objectives and regulatory requirements. Closure costs are most often substantially incurred after the mine is no longer generating revenue. Consequently, financial provisions for closure must either be set aside by the company prior to or during active operations, provided by other revenue streams or made available through security of other assets. The choice of financial assurance option may depend on regulatory requirements. The closure planning process should prepare cost estimates suitable for the stage of closure planning and design, increasing in detail as the closure of the site approaches and more engineering detail becomes available.

In broad terms, rehabilitation refers to the measures undertaken to return land on which mining has taken place to the agreed post-closure uses. In some jurisdictions, the legal requirement is for restoration of the pre-mining land use, whereas in others the end uses of the land are open to a process of negotiation, either with the regulatory authorities or with a broader set of stakeholders. Since mining represents a transient land use, in areas with significant biodiversity values, the aspiration should be to restore land used for mining to a future use that takes these values into account (See RJC Guidance on **Biodiversity**).

B *Issue background (cont)*

Achievable objectives and targets for biodiversity re-establishment are essential to give the operation a framework on which to base its rehabilitation program. These should be developed through a dynamic and iterative process involving mining stakeholders. The following aspects should be taken into account:

- Relevant regulatory requirements and other guidelines;
- Effective consultation with key stakeholders;
- Competing interests to be understood and reconciled;
- All available information on biodiversity;
- Technical limitations;
- Pre-mining land uses and the extent of biodiversity degradation;
- Whether mitigation or enhancement is intended;
- Post-mining land tenure and land uses;
- Integration into whole-of-lease biodiversity management;
- Minimizing secondary impacts;
- Other opportunities for biodiversity improvement.

Closure planning can be complex as it usually deals with time horizons that can stretch over decades. Planners must try to deal with social, economic and environmental parameters that over the life of a mine and post-closure generations are bound to change. An integrated, iterative and disciplined approach is required to take account of various changing parameters. Done well, effective closure planning can lead to the following positive outcomes:

- Engagement with affected and interested parties will be more consistent and transparent;
- Communities will participate in planning and implementing actions that underpin successful closure;
- Closure decisions will be better supported by stakeholders;
- Planning for closure will become easier to manage;
- The accuracy of closure cost estimates will be improved;
- The risk of regulatory non-compliance will be minimized;
- Potential problems will be identified in a timely manner;
- Potential liabilities will be progressively reduced; and
- Opportunities for lasting benefits will be recognized and planned for adequately.

C *Key regulations*

INTERNATIONAL

The International Council on Mining and Metals (ICMM) has developed a Mine Closure Toolkit on integrated closure planning aimed at promoting a more disciplined approach and increasing uniformity of good practices across the sector. The toolkit covers the entire mine life cycle. It brings together existing tools (e.g. the ICMM Community Development Toolkit) with tools for closure specific issues.

NATIONAL AND/OR STATE LAW

Many jurisdictions regulate specific requirements for closure and associated financial assurance. It is essential that Members are aware of applicable law and regulation in all jurisdictions of operation.

D Suggested implementation approach

The Suggested implementation approach provides general guidance for implementing the mandatory requirements of the Code of Practices. The guidance is not normative and should be seen as a starting point for information and support.

COP 40.1: CLOSURE PLAN:

Members in the Mining Sector shall prepare and regularly review a mine rehabilitation and closure plan in relation to each Mining Facility. New Facilities require a closure plan from start-up and existing Facilities need to put in place a comprehensive plan as early as possible.

Points to consider:

- Closure planning should take place at the earliest possible stage of a mining project, enabling risks and unknowns to be identified and reduced over time.
- The plan should include closure targets and goals, and should be used and updated throughout the operational life of the mine.
- Suitably qualified persons should be assigned with responsibility for maintaining the rehabilitation and closure plan throughout the mine lifecycle.
- Rehabilitation and closure plans should consider maintenance and surveillance programs for temporary closure of operations that are expected to reopen in the future.
- Planning should also consider residual impacts from infrastructure, subsidence, or acid-generating material.
- Plans should be referenced in corporate/site sustainability (or equivalent) documentation.

COP 40.2: ENGAGEMENT:

Members in the Mining Sector shall engage regularly with local stakeholders in relation to each Mining Facility, including Indigenous Peoples, communities, ASM, employees and regulators, regarding mine closure and rehabilitation plans.

Points to consider:

Stakeholder engagement on closure planning should be an integral component of the mine community engagement program (see RJC Guidance on [Community Engagement](#)).

- Progress against closure plans should be regularly reviewed in conjunction with key stakeholders, including affected communities, workers and regulators.
- Engagement should occur throughout the life of the mine, and should be up to date with changes in the mine development, and changes involving relevant stakeholders.

COP 40.3: FINANCIAL PROVISIONS:

Members in the Mining Sector shall estimate the cost for implementation of the mine rehabilitation and closure plan for each Mining Facility, and shall put in place financial provisions to ensure availability of adequate resources to meet closure requirements.

Points to consider:

- Cost estimates should be initiated as early as possible and updated regularly. Unless otherwise stipulated by applicable law, closure costs should be based on reasonable estimates of actual costs taking into account local conditions and cost structures.
- Financial provisions should as a minimum be in accordance with applicable law. In the absence of such laws, provisions may be in the form of bonds, letters of credit or other financial instruments, or by self-insurance or self-guarantee. Financial mechanisms managed by a third party may be appropriate, particularly post-closure.

D *Suggested implementation approach (cont)*

COP 40.4: GOOD PRACTICE REHABILITATION:

Members in the Mining Sector shall adopt good practice techniques for the rehabilitation of environments disturbed or occupied by Mining Facilities, to establish a sustainable native ecosystem, or other post-mining use developed through engagement with key stakeholders in the mine closure planning process.

Points to consider:

- Rehabilitation and closure should wherever possible be implemented progressively, as individual sites within a Mining Facility are decommissioned or exhausted and are no longer operational.
- Rehabilitation and closure planning should also consider risks and residual impacts from infrastructure, subsidence, acid-generating material, etc.
- Performance results for such sites should be monitored and incorporated into regular reviews of the mine rehabilitation and closure plan.

CHECK

- Is an up to date mine rehabilitation and closure plan in place for each Mining Facility?
- Do your stakeholder engagement activities include discussions about mine closure planning?
- Are rehabilitation and closure cost estimates up to date, and have adequate financial provisions been put in place?
- Are good practice techniques being followed for rehabilitation?
- Will rehabilitation establish a sustainable native ecosystem, or other post-mining use developed through engagement with key stakeholders?

E *Further information*

The following websites have further information relating to Mine Closure Planning:

- Eden Project - Post-mining Alliance – Publications
www.postmining.org/index.php?page=19
- International Council on Mining and Metals (ICMM) – Guidance Paper: Financial Assurance for Mine Closure and Reclamation (2006)
www.icmm.com/page/1232/library/documents/guidance-paper-financial-assurance-for-mine-closure-and-reclamation
- International Council on Mining and Metals (ICMM) – Planning for Integrated Mine Closure: Toolkit (2008)
www.icmm.com/page/9566/icmm-publishes-closure-toolkit
- International Council on Mining and Metals (ICMM) – Report on survey: Financial Assurance for Mine Closure and Reclamation (2005)
www.icmm.com/page/1158/library/documents/financial-assurance-for-mine-closure-and-reclamation
- Leading Practice Sustainable Development Program for the Mining Industry (Australia) – Mine Closure and Completion (2006)
www.ret.gov.au/resources/Documents/LPSDP/LPSDP-MineClosureCompletionHandbook.pdf
- Mining Association of Canada (MAC) – Towards Sustainable Mining, Tailings Management Protocol
www.mining.ca/site/index.php/en/towards-sustainable-mining/performance-measures-a-protocols.html