

Perkuhn, Robert

**Research Report**

## Mine closure and FDI: A long-term challenge

Columbia FDI Perspectives, No. 412

**Provided in Cooperation with:**

Columbia Center on Sustainable Investment (CCSI) - A joint center of Columbia Law School and the Earth Institute, Columbia University

*Suggested Citation:* Perkuhn, Robert (2025) : Mine closure and FDI: A long-term challenge, Columbia FDI Perspectives, No. 412, Columbia University, Columbia Center on Sustainable Investment (CCSI), New York, NY

This Version is available at:

<https://hdl.handle.net/10419/321910>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

## **Columbia FDI Perspectives**

Perspectives on topical foreign direct investment issues

Editor-in-Chief: Karl P. Sauvant ([karlsauvant@gmail.com](mailto:karlsauvant@gmail.com))

Managing Editor: Chioma Menankiti ([clm2249@columbia.edu](mailto:clm2249@columbia.edu))

*The Columbia FDI Perspectives are a forum for public debate. The views expressed by the authors do not reflect the opinions of CCSI or our partners and supporters.*

No. 412 June 23, 2025

### **Mine closure and FDI: a long-term challenge**

by

Robert Perkuhn\*

Large-scale mining projects are commonly undertaken by MNEs, often in form of joint ventures. Mines are generally operated for decades, although the entire mine life may be interrupted by periodic shutdowns or partial closures.

Closure and remediation of mines are often delayed, and thousands of mines are left orphaned worldwide (e.g., [more than 10,000 in Canada](#) alone), without proper restoration of impacted lands (e.g., pollution of soils and groundwater, damages to vegetation, loss of livelihood for indigenous people). Although good-practice standards for mine closure are established now in most countries with a matured mining sector, mine closure planning in developing countries often aims at keeping closure costs low and in line with narrow compliance standards, with often insufficient or fragmented minimum requirements stated in national laws and regulations.

Against this background—and to mitigate environmental and financial risks to indigenous people and taxpayers—authorities should demand and negotiate progressive mine closure and remediation wherever possible, starting with the *legal and regulatory framework* (mining law, mine closure regulation, etc.). It needs to set forth minimum requirements, specifically to:

- Ensure regulatory and executive leverage to leave no room to operators for inadmissibly postponing or delaying any pending or imminent closure and remediation measures.
- Require mine operators to perform closure and remediation work in line with international good-practice standards (e.g., closure concepts and designs developed on available baseline monitoring and in due consideration of local climate conditions, use of predictive numerical modelling, provision of comprehensible closure-cost estimates, comprehensive closure risk assessments).
- Provide robust financial guarantees (e.g., cash deposit, letters of credit, surety bonds), to be provided “in-full” (total amount), upfront (in advance to the predicted environmental impact or remediation demand) and as a prerequisite for commencing

operations. Financial guarantees should cover all closure works to be possibly executed by third-party contractors at any time during a mine's lifetime. Even developed countries (e.g., [Canada](#)) experience considerable problems due to insufficient coverage of closure and remediation costs that presumably stem from less stringent legal and regulatory frameworks of the past. Canadian provinces (e.g., [Quebec](#), [British Columbia](#)) are now known to implement rather stringent requirements for financial guarantees ("in-full" and up-front). Other countries, such as Australia ([Western Australia](#), [Queensland](#), [the Northern Territory](#)), have more industry-friendly approaches, such as mining reclamation funds.

In addition to the regulatory framework, *mining contracts* (e.g., mine development contracts, license contracts) should state in detail all site-specific requirements, including objectives and targets for mine closure and remediation (based on the type of mine and waste facilities, possible incidents, etc.); these should be binding obligations for investors. Contracts should also address the specific environmental and social conditions and the risks associated with mine closure (e.g., geographic, climatic and groundwater conditions, physical mine conditions, types of mining wastes). To secure efficient cooperation between authorities and investors, all technical and financial aspects need to be evaluated and agreed upon on an equal footing. Such consensual understanding is indispensable to secure compliance with the terms stated earlier in contracts as well as the long-term sustainability of closure works.

However, when negotiating contracts, responsible authorities often find themselves in a conflict of interests between the desired attractiveness for FDI on the one hand, and sufficient stringency for proper closure and remediation on the other. This requires careful considerations and negotiations in the light of specific projects.

Finally, mining authorities should be provided with sufficient financial means and internationally experienced personnel to ensure that mine-closure plans (closure concepts, closure-cost estimates) are properly developed and negotiated, including the corresponding terms and conditions as well as financial guarantees. Once started, the implementation of mine closure works needs to be monitored to ensure compliance with international good-practice standards. Accordingly, money, levied through royalties and mining-related taxes, should be directly used to strengthen the technical and managerial capacity of the responsible mining authorities, to secure regulatory assertiveness as well as social and environmental sustainability.

Resources are also required because the competent authorities should, during their day-to-day work and during the entire mine life (including the closure period of three-to-five years on average):

- Verify the completeness and appropriateness of periodically updated mine-closure plans, closure concepts and designs, cost estimates, as well as the amount and factual availability of financial guarantees.
- Verify environmental monitoring programs executed by operators.
- Monitor the closure progress and the utilization of allocated budgets (to verify closure cost estimates and adjust corresponding financial guarantees).
- Engage independent mine closure auditors.

When dealing with MNEs, mine closure and remediation must be considered as an integral part of the entire life-cycle of mining projects. While both become relevant only toward the end of a mine's life, the negotiation, planning and financing of mine closure and remediation should commence during project planning and development.

---

\*Robert Perkuhn ([robert.perkuhn@fwf.fichtner.de](mailto:robert.perkuhn@fwf.fichtner.de)) is Senior Mining Consultant working for Fichtner Water & Transportation GmbH in Germany. The author wishes to thank Boris Dolgonos, Perrine Toledano and Louis T. Wells for their helpful peer reviews.

*The material in this Perspective may be reprinted if accompanied by the following acknowledgment: "Robert Perkuhn, 'Mine closure and FDI: a long-term challenge,' Columbia FDI Perspectives, No. 412, June 23, 2025. Reprinted with permission from the Columbia Center on Sustainable Investment (<http://ccsi.columbia.edu>)."* A copy should kindly be sent to the Columbia Center on Sustainable Investment at [ccsi@law.columbia.edu](mailto:ccsi@law.columbia.edu).

For further information, including information regarding submission to the *Perspectives*, please contact: Columbia Center on Sustainable Investment, Charles Denis, at [cd3427@columbia.edu](mailto:cd3427@columbia.edu).

The Columbia Center on Sustainable Investment (CCSI), a joint center of Columbia Law School and Columbia Climate School at Columbia University, is a leading applied research center and forum dedicated to the study, practice and discussion of sustainable international investment. Our mission is to develop and disseminate practical approaches and solutions, as well as to analyze topical policy-oriented issues, in order to maximize the impact of international investment for sustainable development. The Center undertakes its mission through interdisciplinary research, advisory projects, multi-stakeholder dialogue, educational programs, and the development of resources and tools. For more information, visit us at <http://ccsi.columbia.edu>.

#### **Most recent Columbia FDI Perspectives**

- No. 411, Sergio Mariotti, '[Preventing the misuse of antitrust against FDI: key action points](#)', *Columbia FDI Perspectives*, June 9, 2025.
- No. 410, Nicolò Andreotti, '[How can governments and investors successfully invoke positive human rights obligations in international investment law and arbitration?](#)' *Columbia FDI Perspectives*, May 26, 2025.
- No. 409, Nandita Dasgupta, '[Flipping and reverse flipping transactions: a concern for host economies](#),' *Columbia FDI Perspectives*, May 12, 2025.
- No. 408, Mevelyn Ong, '[Challenging the invocation of national security interests in international arbitration and its implications for the rule of law](#),' *Columbia FDI Perspectives*, April 28, 2025.
- No. 407, Xavier Forneris, '[FDI and the digital economy: the need for policy alignment](#),' *Columbia FDI Perspectives*, April 14, 2025.