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ESG ARTICLES

ESG in the Mexican Mining Industry *Part Three*

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Introduction

In the second part of the document “ESG in the Mexican Mining Industry”, we addressed the first three indicators related to the best environmental practices for the mining industry in 2022, as provided in the Responsible Mining Index (RMI) and developed by the Responsible Mining Foundation (RMF).¹ Specifically, we addressed the best environmental practices for the mining industry in terms of (i) environmental management, (ii) tailings management, and (iii) water management. In this third part, we will address the remaining four categories identified in the RMI.

Noise and vibration

During the operational stage of certain mining projects, noise and vibrations can be produced around the clock.² It is well known that noise can adversely affect human health, promoting the development of chemical, biological, neurological, and neurocognitive

ailments. Noise can even cause damage to genetic material and some types of cancer. Not to mention that it also has an impact on wildlife.³

Therefore, it is highly advisable to address this issue during early interactions with stakeholders (workers, communities, investors, and authorities) when developing mining projects. This is especially important because communities are more likely to be tolerant of mining-related noise and vibration when companies are transparent and work with them to develop acceptable mitigation strategies.

As reported by RMI, best practices for noise and vibration management include limiting known sources of loud noise or strong vibrations (such as explosions during the day) and dampening or controlling noise and vibrations at their source.⁴ In Mexico, environmental regulation, specifically the Official Mexican Standards (*Normas Oficiales Mexicanas*), already establish

1 Responsible Mining Foundation, *Responsible Mining Index Methodology 2022*, accessed February 25, 2022, available at: <https://www.responsibleminingfoundation.org/es/rmi-framework-2022/>

2 Centro Europeo de Postgrado, “¿Qué es la contaminación acústica?”, accessed April 20, 2022, available at: <https://www.ceupe.mx/blog/que-es-la-contaminacion-acustica.html>.

3 Nexos, “Los efectos de la actividad minera en la salud de los mexicanos,” accessed April 20, 2022, available at: https://discapacidades.nexos.com.mx/los-efectos-de-la-actividad-minera-en-la-salud-de-los-mexicanos/#_ftn5.

4 Responsible Mining Foundation, *Responsible Mining Index Methodology 2022*, page 127, accessed February 25, 2022, available at: <https://www.responsibleminingfoundation.org/es/rmi-framework-2022/>.

maximum permissible noise limits and require noise levels to be assessed periodically.⁵

Biodiversity and ecosystem management

The livelihoods and survival of rural communities and indigenous peoples and communities in developing countries depend on the ecosystem services provided largely by biodiversity (contributing food, nutrients, medicines, and fuel, among others). For this reason, it is essential to preserve biodiversity and manage ecosystems appropriately.

Without proper and sustainable management of its activities, mining can impact biodiversity with activities like the removal of vegetation in the construction of roads in forests to access mineral veins, the conversion of land, wetlands, or bodies of water into waste disposal sites, and the planned or unplanned discharges of waste into the environment. The contamination of Lake Izabal in Guatemala is one such case.⁶ In October 2021, fishers and indigenous communities protested and demonstrated on the streets to oppose the activities of the company Guatemala Nickel Co. that were resulting in the contamination of the lake, and which, if allowed to continue, could result in irreversible damage.

To mitigate risks and avoid situations such as the one described above, the mining companies studied in the RMI have fostered the implementation of the following measures, among others:

- Avoid critical habitats and key biodiversity conservation areas whenever possible.
- Apply the mitigation hierarchy criterion as a means of managing risks to biodiversity. In other words, priority should be given to avoiding impacts on biodiversity and ecosystem services,

5 NOM 081-SEMARNAT-1994, and its Amending Resolution, accessed April 20, 2022, available at: <https://biblioteca.semarnat.gob.mx/janium/Documentos/Ciga/agenda/PPD02/081.pdf> and http://www.dof.gob.mx/nota_detalle.php?codigo=5324105&fecha=03/12/2013.

6 Prensa Libre “Comunidades de El Estor quieren fuera de su pueblo una mina pues afirman que contamina su territorio y la empresa dice que son especulaciones”, accessed April 20, 2022, available at: <https://www.prensalibre.com/ciudades/izabal/comunidades-de-el-estor-quieren-fuera-de-su-pueblo-a-empresa-minera-pues-afirman-que-contamina-su-territorio-niquel-guatemala-breaking/>.

and, if this is not possible, minimization, restoration and, as a last resort, compensation for residual impacts should be practiced.

- Conduct independent external audits or monitoring to verify that biodiversity management strategies are being implemented effectively.

We emphasize the importance of point three above because, as reported in the RMI, those companies that demonstrate performing external audits on their management practices tend to access capital, land, and resources more easily and at a lower cost.⁷

Climate change and energy efficiency

The United Nations defines climate change as “long-term changes in temperatures and weather patterns”.⁸ Some changes may be natural, but since the 19th century, human activities have been the main driver of these changes, primarily due to the burning of fossil fuels such as coal, oil, and gas. While this is a problem that affects everyone, developing countries are often disproportionately affected.

Mining is energy-intensive, which means it is desirable to continually seek a more efficient and sustainable use of energy.⁹ This industry is responsible for around 4% to 7% of the total greenhouse gases emitted annually worldwide.¹⁰ In addition, some countries have already predicted that energy consumption will increase in the future as the exploitation of increasingly deeper

7 Responsible Mining Index, p. 126, accessed April 20, 2022, available at: https://www.responsibleminingfoundation.org/app/uploads/RMI_Methodology2022_EN_web.pdf.

8 United Nations, “¿Qué es el cambio climático?”, accessed April 20, 2022, available at: <https://www.un.org/es/climatechange/what-is-climate-change#:~:text=El%20cambio%20clim%C3%A1tico%20se%20>.

9 Igogo, Awuah-Offei, Newman, Lowder, and Engel-Cox, *Integrating renewable energy into mining operations: Opportunities, challenges, and enabling approaches*, accessed February 26, 2022, available at: <https://www.solarpaces.org/wp-content/uploads/Integrating-renewable-energy-into-mining-operations-Opportunities-challenges-and-enabling-approaches.pdf>.

10 McKinsey, *Climate risk and decarbonization: What every mining CEO needs to know*, accessed February 26, 2022, available at: <https://www.mckinsey.com/business-functions/sustainability/our-insights/climate-risk-and-decarbonization-what-every-mining-ceo-needs-to-know>.

mineral deposits becomes feasible.¹¹

As a result, an increasing number of companies (such as Anglo American, BHP, and RIO Tinto)¹² are monitoring and publishing information on their energy consumption and greenhouse gas emissions. And more importantly, these companies are taking measures to reduce energy use and emissions in the supply chains by incorporating clean or renewable energies and low-emission technologies and improving energy efficiency.

There are many benefits for companies that proactively reduce energy consumption, greenhouse gas emissions and dependence on fossil fuels. Most notably, companies can protect themselves from rising fuel prices, mitigate the effect of regulations that may limit or put a price on carbon emissions, and improve their reputation, particularly in the communities where the projects are located.

These types of measures can already be observed in Mexico. Specifically, in 2020 the mining company Grupo Mexico reported an 8% reduction in its operational greenhouse gas emissions compared to those of 2019 thanks to the adoption of renewable energies.¹³

It is important to note that under Mexican law, there are options available for mining companies to reduce greenhouse gas emissions, such as the acquisition of clean energy certificates, the implementation of on-site electricity generation schemes through renewable energy sources (*i.e.*, distributed generation, isolated supply, etc.), the execution of electricity supply contracts involving sources of clean or renewable energy, or participation in a voluntary carbon bond market or regulated emissions trading market. The emissions trading or “cap and trade” mechanism

11 Reporte Minero “Necesidad energética en la industria minera aumentará 42% hacia 2030” accessed April 20, 2022, available at: <https://www.reporteminero.cl/noticia/noticias/2020/01/necesidad-energetica-en-la-industria-minera-aumentara-42-hacia-2030>.

12 Reuters, *World's largest miners pledge net zero carbon emissions by 2050*, accessed February 26, 2022, available at: <https://www.reuters.com/business/sustainable-business/worlds-largest-miners-pledge-net-zero-carbon-emissions-by-2050-2021-10-05/>.

13 Grupo Mexico, *Sustainable Development Report 2020*, accessed February 26, 2022, available at: <https://www.gmexico.com/GMDocs/InformeSustentable/DS2020completo.pdf>.

is currently in a trial stage and available for those facilities in industrial sectors, such as mining, whose annual emissions are equal to or greater than 100 thousand tons of direct carbon dioxide emissions.¹⁴ In the fourth part of this document we will address this topic in detail.

Hazardous materials management

The preliminary certified inventory of tailings dams in the country—published by the Ministry of Environment and Natural Resources (SEMARNAT) in 2021—identifies the location of the 585 tailings dams in the Mexican territory.¹⁵ It is worth noting that the existence of at least half of these tailings dams was unknown to SEMARNAT until recently. The lack of this kind of information creates the risk that dams unmonitored by the authorities may break or overflow, spilling into nearby communities. Moreover, some dams are close to rivers and can pollute the tributaries and soil or seep into the groundwater.

The most common potentially toxic elements present in Mexican mine tailings are lead, cadmium, zinc, arsenic, selenium, and mercury.¹⁶ In accordance with current regulations, tailings, waste oils and residual solvents are considered hazardous waste.¹⁷

All hazardous materials require adequate management of the occupational health, environmental and social risks throughout the lifecycle of a mining project, including during their supply, transportation, storage, use, production, and disposal. Such management is regulated by the General Law for the Prevention and Integral Management of Waste (*Ley General para la Prevención y Gestión Integral de los Residuos*). Ideally, the main criteria for a responsible management of

14 Secretaría de Mexico Ambiente y recursos Naturales, “Programa de prueba del sistema de comercio de emisiones”, accessed July 21, 2022, available at: <https://www.gob.mx/semarnat/acciones-y-programas/programa-de-prueba-del-sistema-de-comercio-de-emisiones-179414>.

15 Secretaría de Medio Ambiente y Recursos Naturales, *Inventario homologado preliminar de presas de jales en México*, accessed February 26, 2022, available at: <https://geomaticaportal.semarnat.gob.mx/arcgisp/apps/webappviewer/index.html?id=95841aa3b6534cdfbe3f53b3b5d6edfa>.

16 NOM-141-SEMARNAT-2003 defines “tailings” as solid waste generated in the milling, recovering and processing of minerals.

17 NOM-052-SEMARNAT-2005, *Que establece las características, el procedimiento de identificación, clasificación y los listados de los residuos peligrosos*, accessed February 26, 2022, available at: <https://www.dof.gob.mx/normasOficiales/1055/SEMARNA/SEMARNA.htm>.

hazardous materials should give priority to avoiding their use by, for example, choosing less hazardous processes or chemicals. However, when it is impossible to avoid the use or production of hazardous materials, the RMF recommends their minimization, as well as preventing and controlling spills.

Other measures include sharing information and providing training programs for workers, contractors, and communities; performing inspections and maintenance of equipment and facilities; monitoring the concentrations of hazardous materials in wastes; and developing procedures to address residual risks that cannot be avoided.

In general, the international best practices in noise and

vibration, biodiversity and ecosystem management, climate change and energy efficiency, and hazardous materials management go hand in hand with sustainable project planning before the stages of development, and the inclusion of systems of transparency and accountability. Furthermore, adequate planning will foster public confidence in the mining project and a better reputation for the company, which translates into greater economic growth.

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The information contained in this note does not constitute, nor is it intended to constitute, nor shall be construed as legal advice on the topic or subject matter covered herein. This note is intended for general informational purposes only. To obtain legal advice on a particular matter in connection with this topic, please contact one of our attorneys referred to herein.

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