



Chapter 2 – Regulatory Framework

Vares Polymetallic Mine ESIA
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2 REGULATORY FRAMEWORK

2.1 Overview

This chapter describes the legal framework relating to the management of the environmental and social risks of the Vares Project, including Project policies for the application of environmental and social management plans. The following sections describe the relevant national, regional and international regulation and standards. Relevant international standards include those of the IFC and the EBRD. National standards, European Union standards and international standards have been compared and the most stringent applied.

BiH is on the accession path to European Union (EU) membership and in doing so, is in the process of aligning its national environmental legislation and standards to meet EU requirements. Therefore, particular attention has been given to EU requirements.

Based on the international guidelines described below, the Vares Project is described as a Category A Project due to being a significant greenfield development which may result in environmental and social impacts that are expected to occur because of it.

2.2 Bosnia and Herzegovina National Requirements

2.2.1 Relevant Authorities

The BiH Constitution states that jurisdiction in environmental issues is split between its entities (the Federation of Bosnia and Herzegovina (FBiH), Republika Srpska (RS) and the district of Brčko (BD)), including their respective cantonal/municipal levels. The only institution at the state level with jurisdiction in environmental issues is the Ministry of Foreign Trade and Economic Relations (MoFTER).

Government and Federal authorities responsible for the regulation and control of the mining industry include the following:

- Ministry of Physical Planning – Responsible for policy and land utilisation of the FBiH, including directing the development of the utilisation of natural resources; geologic research; drafting of basic maps – geophysical, seismological, geothermal, minerogenetic, geochemical, geomorphological, and other; preparing geological backgrounds for physical improvements;
- Federal Ministry of Labour and Social Policy – Administrative tasks related to the competencies of the FBiH in the areas of social policy, labour and employment, and pension and disability insurance;
- Ministry of Environment and Tourism – Responsible for tasks in the FBiH such as ecological air, water and soil protection; drafting environmental strategy and policy; air, water and soil quality standards; ecological monitoring and control of air, water and soil; drafting of development strategies and policies in area of tourism;

- Ministry of Agriculture, Water Management and Forestry – Responsible for water management within the FBiH. Water services are provided by utility companies owned by the municipality, canton, or a city, and are responsible for both water supply and wastewater management; and
- Federal Ministry of Energy, Mining and Industry – Oversees matters related to energy policy, geology, mining and industrial development.

2.2.2 Regulation of Mining Law in Bosnia and Herzegovina

The Law on the Mining Industry of the FBiH defines the legal status of mineral wealth or mineral raw materials for the following related activities:

- Method and conditions of management;
- Protection;
- Execution of operations;
- Health and safety measures;
- Suspension and permanent execution of mining operations;
- Technical documentation and design activities;
- Mining measurements; and
- Mining plans.

Article 4 of the Law on the Mining Industry¹ pertaining to the Management of Mineral Raw Materials states that it is the responsibility of the FBiH and the Cantons to plan and oversee the exploitation of the raw materials. In addition to this, the Law on Geological Research and the Law on Concessions require Adriatic Metals PLC under statutory obligation to report resource and reserve data for all mineral resources.

2.2.3 Environmental and Social Legislation

In BiH and the FBiH, legislation relevant to the Environmental Impact Assessment (EIA) Process, including stakeholder engagement requirements, includes the following:

- Law on Concessions (“Official Gazette of FBiH,” No. 40/02 and 61/06);
- Law on Expropriation of FBiH (Official Gazette of FBiH, number 70/07, 36/10, 25/12, 34/16);
- Law on Mining in FBiH (“Official Gazette of the FBiH,” No. 26/10);
- Law on Environmental Protection (“Official Gazette of the FBiH,” 15/2021);
- Law on Free Access to Information in BiH (Official Gazette of the BiH No. 28/00, 45/06, 102/09, 62/11, 100/13);
- Law on Nature Protection (“Official Gazette of the FBiH,” No. 66/13);
- Law on Air Protection (“Official Gazette and the FBiH,” No. 33/03 and 4/10);
- Law on Water (“Official Gazette of the FBiH,” No. 70/06);

¹ <https://fmeri.gov.ba/media/1045/law-the-mining-industry-the-fbh.pdf>

- Law on Waste Management (“Official Gazette of the FBiH,” No. 33/03, 72/09 and 92/17);
- Law on Spatial Planning and Land Utilization at the FBiH level (“Official Gazette of the FBiH,” No. 02/06, 72/07, 32/08, 04/10, 13/10, 45/10);
- Regulation on Determination of Works and Buildings for Which the Federal Ministry of Spatial Planning Issues the Urban Permit and/or Location Information (“Official Gazette of the FBiH,” No. 32/14);
- Regulation on Plants and Facilities for Which the Environmental Impact Assessment Must Be Carried Out and Plants and Facilities Which Can Be Constructed Only with the Environmental Permit (“Official Gazette of the FBiH,” No. 19/04);
- Regulation on Content, Order of Preparation, Constituent Parts and Method of Developing Mining Projects (“Official Gazette of the FBiH,” No. 53/12);
- Decision on Conversion of Forest Land to Construction Land (“Official Gazette of the FBiH,” No. 108/12);
- Law on Forests (“Official Gazette of ZDC,” No. 8/13 and 1/15); and
- Law on Protection and Utilisation of Cultural-Historical and Natural Heritage of Bosnia and Herzegovina (Official Gazette of Socialist Republic of BiH,” Nos. 20/85, and 12/87, and “Official Gazette of R BiH,” Nos. 3/93 and 13/94).
- Law on Agricultural Land (FBiH 52/09), specifically the Instruction on procedure, actions and conditions for performing soil fertility control (Official Gazette of FBiH No 72/2009) and Instruction on the Unique Methodology for Classification of Agricultural Land into Rating Categories (Official Gazette of FBiH No 78/2009) and Instruction on compulsory unique methodology for developing recultivation projects (Official Gazette of FBiH No 73/09) and Rulebook on defining allowed quantity of harmful and hazardous materials in soil and testing methods (Official Gazette of FBiH No 72/09).

Specific national standards for environmental aspects are presented in Section 2.6.

2.2.4 Permitting Requirements and Status

The two sites, Rupice and Vares Processing Plant are currently undergoing in-country permitting procedures. A demolition permit was first obtained to formalise the closure of the Vares Processing Plant site. This permit is not required at the greenfield Rupice site.

The permitting requirements for the Project can be summarised as follows: The Concession grants the concessionaire the right to exploit minerals. An exploration licenses allow geological investigation, supported by an urban planning permit and land access. A resource, called an “elaborate of ore reserves” establishes the potential for exploitation on the concession. An environmental impact assessment enables issuance of an Environmental Permit, after Preliminary Water Permits. Following an Urban Planning Permit, and confirmation of access rights an Exploitation Permit is issued. This gives the concessionaire the subsequent right to submit “main mining projects” for verification by the competent authorities and the issuance of final water consents. If a project is built in accordance with the main mining projects a usage permit is issued. Ancillary projects and permits are required for, amongst other things, explosives magazines, electrical sub-stations & fuel bunkering.

The current permitting status is summarised in Table 2.1.

Permit	Vares Processing Plant Status	Rupice Status
Demolition Permit – comprising of water and environmental permits	Approved	Not required
Concession (tenure)	Granted	Granted
Exploration	Granted	Granted
Land Use Planning	Granted	Granted
Water Management Permit	Granted	Granted
Environmental Permit	Granted	Granted
Forest Permits (Change of use of forestry land to construction)	Not required	Granted
Forestry permits (for mining activity and development of haul roads)	Not required	In progress
Exploitation permit	Granted	Granted
Permit for use of mining facilities	To be granted following ministry technical inspection of built facilities.	

Obtaining Exploitation permits will sanction Adriatic Metals to pursue the project with long term tenure of the concessions. Once the Rupice site has obtained the exploitation permits, the ‘Main Mining Project’ can be determined. The main mining project will comprise of the Rupice underground operation, and the Vares Processing Plant. Once the Main Mining Project is complete, the Construction Permit will be applied for.

2.2.5 Local EIA

According to Article 41 of the Law on Spatial Planning and Land Use at the Level of the Federation of Bosnia and Herzegovina (“Official Gazette of the Federation of BiH”, No. 2 / 06,72 / 07, 32/08, 4/10, 13/10 and 45/10), as part of the procedure for issuing an urban permit, the investor whose project is considered to have or may have a negative impact on the environment must have previously obtained an environmental permit. The Rulebook on plants and operations defines the requirements for undertaking an Environmental Impact Assessment (EIA) for these developments, in order to obtain the aforementioned environmental permit. Further, an obligatory part of the EIA for issuing an environmental permit is the Waste Management Plan prepared in accordance with Art. 19 and 20 of the Law on Waste Management (“Official Gazette of FBiH”, number: 33/03, 72/09 and 97/17).

The EIA must be undertaken by an authorised body, as stated on the Federal ministry of environment and tourism website. The EIA must be submitted to the Ministry of Environmental and Tourism for review and approval. Mandatory consultees are selected by the ministry, in accordance with their requirements for competent persons.

Following submission of the EIA, the public have a 30-day period to submit any remarks, information, analysis, or opinion regarding the EIA. During this time a public hearing will be undertaken, the results of which will be taken into account in the decision to approve or decline the environmental permit.

The environmental permit is issued for a period of 5 years, after which the investor is obliged to submit a request for re-issuance of the environmental permit.

Environmental Impact Assessments have been completed for both Rupice and Vares Processing Plant, forming part of the local permitting process. These EIAs were undertaken by local consultants (Tuzla Mining Institute and Enova consultants, respectively) and submitted to the Ministry for Environment and Tourism. Public Hearings were held for both project EIAs, prior to permits being granted. The EIAs were carried out early in the ESIA process and the findings of the studies as well as results of the public hearings were used to inform the international environmental and social scoping study, baseline design and ESIA.

In contrast to the local EIA, this ESIA has been developed to ensure the Vares Project complies with the requirements of International Finance Institutions, namely the IFC and EBRD. The ESIA has been carried out taking local permitting requirements into account, as well as international best practice. The ESIA is developed to allow Adriatic Metals to obtain funding from international lenders.

2.3 European Union Requirements

As an accession country to the EU, BiH is in the process of implementing EU laws and environmental standards and directives. Table 2.2 outlines environmental directives relevant to the Project.

EU Legislation	Year Passed	Purpose / Content
Environmental Impact Assessment Directive 2014/52/EU	1985 (Current consolidated version: 15/05/2014)	Defines the requirements of an Environmental Impact Assessment.
Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)	2010	Lays down rules on integrated prevention and control of pollution arising from industrial activities. In addition, it describes the rules designed to prevent or, where that is not practicable, to reduce emissions into air, water and land and to prevent the generation of waste, in order to achieve a high level of protection of the environment taken as a whole.
Directive 2008/50/EC Ambient air quality and cleaner air	2008	Defining objectives and obtaining information on ambient air quality to reduce and prevent harmful effects on human health by reducing air pollution.
Directive 2002/49/EC Environmental Noise	2002 (Current consolidated version: 25/03/2020)	Determination of environmental noise, ensuring information is available to the public, and preventing and reducing the environmental noise.
Directive 2000/14/EC Noise of Equipment for use outdoors	2000 (Current consolidated version: 26/07/2019)	Determines requirements relating to the noise emissions in the environment by equipment for use outdoors
Directive 92/43/EEC Conservation of Natural Habitats of Wild Fauna & Flora	1992 (Current consolidated version: 01/07/2013)	Defines requirements to promote the maintenance of biodiversity.

Table 2.2: EU Environmental Directives Relevant to the Project

EU Legislation	Year Passed	Purpose / Content
Directive 2009/147/EC Conservation of Wild Birds	2009 (Current consolidated version 26/06/2019)	Determines requirements for long term protection of species of wild birds naturally occurring in the European territory of the Member States.
Directive 2000/60/EC Water Framework Directive	2000 (Current consolidated version 20/11/2014)	Requirements for sustainable management and protection of freshwater resources.
Directive 89/391/EEC OSH 'Framework Directive'	1989 (Current consolidated version 11/12/2008)	Encourage improvements of health and safety for workers at work
Directive 92/104/EEC OHS Mineral extracting Industries	1992 (Current consolidated version 04/04/2018)	Sets the minimum requirements for improving safety and health protection of workers in surface and underground mineral extracting industries
Directive 2006/21/EC on the management of waste from extractive industries and amending Directive 2004/35/EC.	2006	Provides for measures, procedures and guidance to prevent or reduce as far as possible any adverse effects on the environment, in particular water, air, soil, fauna and flora and landscape, and any resultant risks to human health, brought about as a result of the management of waste from the extractive industries.
Directive 2004/35/CE of the European Parliament and of the Council on environmental liability with regard to the prevention and remedying of environmental damage	2004 (Current consolidated version 07/08/2009)	Establishes a framework of environmental liability based on the "polluter-pays" principle, to prevent and remedy environmental damage.
Directive 82/501/EEC The Seveso Directive	1982 (Current consolidated version: 04/07/2012)	Prevent and control major accidents involving dangerous chemicals which pose a threat to humans and the environment.
Directive 1999/31/EC on the Landfill of Waste	1999 (Current consolidated version 30/05/2018)	Presents requirements to prevent and reduce any negative impacts from landfill on surface water, groundwater, soil, air or human health.
Directive 2015/2193 Medium Combustion Plant Directive (MCPD)	2015	Describes emission limits of certain pollutants into the air from medium combustion plants.
EC Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture.	1986	Describes the monitoring of heavy metals in soils after the application of sewage sludge. Is relevant for heavy metal limits for agricultural soils.

A reference document on Best Available Techniques for the management of waste from extractive industry², offers guidelines for activities that have the potential to create significant environmental impacts related to tailings and waste-rock management. This document supports the Directive on the management of waste from extractive industries above.

² Garbarino, E., et al., Best Available Techniques (BAT) Reference Document for the Management of Waste from Extractive Industries in accordance with Directive 2006/21/EC, EUR 28963 EN, 2018. Available at: available at <https://publications.jrc.ec.europa.eu/repository/handle/JRC109657>

2.4 International Standards for Environmental and Social Management

2.4.1 Introduction

Good International Industry Practice (GIIP) for projects in emerging markets is generally driven by the international lending community. The Project has been designed to meet the standards of International Financial Institutions (IFIs) and the ESIA has been undertaken in line with the general standards and provisions of the Equator Principles (EPs), the International Finance Corporation (IFC), and the European Bank for Reconstruction and Development (EBRD).

As of October 2020, the EBRD acquired a 2.62% stake in Adriatic Metals PLC to support the development of the Vares Project. The ESIA has therefore been developed prioritising the EBRD Environmental and Social Policy and associated Performance Requirements throughout.

In addition to the relevant environmental and social policy / frameworks presented below both the IFC and EBRD have developed a range of guidance documentation for specific aspects. Where these aspects have been addressed and guidance used it is stated through the impact assessment.

2.4.2 Equator Principles

The EPs provide a risk framework for identifying, assessing, and managing environmental and social risks in project finance transactions based on the IFC Sustainability Framework and the IFC Performance Standards (PS). The EPs apply to all new projects financed by Equator Principles Financial Institutions (EPFI) globally with total project capital costs of US\$10 million or more. The ten principles are outlined below.

Equator Principle	Description
Principle 1 – Review and Categorisation	Requires the categorization of projects based on the magnitude of potential impacts and risks in accordance with the social and environmental screening criteria of the IFC.
Principle 2 – Environmental and Social Assessment	Requires client evaluation of social and environmental impacts and risks and the identification of mitigation and management measures that are needed to reduce impacts to acceptable levels. Principle 2 also requires the assessment of potential adverse Human Rights impacts and climate change risks as part of the ESIA.
Principle 3 – Applicable Social and Environmental Standards	Establishes the IFC Performance Standards and Environmental, Health and Safety (EHS) Guidelines to complement the host country legislation as the basis for social and environmental performance.
Principle 4 – Environmental and Social Management System and Equator Principles Action Plan	All category A and B projects will require to create and sustain an Environmental and Social Management System (ESMS). To comply with applicable standards, an Environmental and Social Management Plan (ESMP) will be created which incorporates any actions required to meet applicable standards. An Equator Principles Action Plan (EPAP) is required where the

³ Equator Principles 4, released November 2019, available at <https://equator-principles.com/ep4/>

Table 2.3: Equator Principles 4³

Equator Principle	Description
	ESMP does not meet applicable standards, EPAP is used to identify gaps and ensure EPFI requirements are met.
Principle 5 – Stakeholder Engagement	Stakeholder Engagement is required to be demonstrated by the client continually throughout the project lifetime as an ongoing process in a culturally appropriate manner, primarily with Affected Communities, Workers, and any other relevant Stakeholders. An Informed Consultation and Participation process is required for projects with Affected Communities with significant predicted adverse impacts. The Informed Consultation and Participation process should include: risks and impacts of the project, the project’s phase of development, suitable language for the Affected Communities, decision making processes and the needs of disadvantaged groups. For Stakeholder Engagement, the Assessment Documentation should be readily available to Affected Communities and other Stakeholders, in their required language
Principle 6 – Grievance Mechanism	Requires that an appropriate grievance process be included as part of the management system and that affected communities are informed of the process.
Principle 7 – Independent Review	Calls for an Independent Environmental and Social Consultant (IESC) to review the ESMS, ESMP and Stakeholder Engagement process documentation to assess compliance with the Principles.
Principle 8 – Covenants	Requires the Project to be in compliance with all environmental and social covenants, with financing documentation complying with all host country environmental and social laws, regulations and permits. The lending covenant will require compliance with respect to the ESMS and EPAP. Periodic reports to the EPFI and decommission facilities in accordance with a decommissioning plan are required.
Principle 9 – Independent Monitoring and Reporting	Calls for an IESC to verify monitoring and reporting information.
Principle 10 – Reporting and Transparency	Commits the EPFI to publicly report its Equator Principles implementation process and experience on an annual basis. The client will ensure at minimum a summary of the ESIA is available publicly. If appropriate, GHG emissions will be publicly reported by the client annually. The client will be encouraged by the EPFI to share non-sensitive information regarding Project specific biodiversity data with the Global Biodiversity Information Facility.

Principle 3 cross references and incorporates the IFC PS and the World Bank Group’s (WBG) EHS Guidelines, thus requiring projects seeking finance from EPFIs to align to these standards, including applicable WBG/IFC industry-specific EHS guidelines.

The EPs Association released the latest update of the Principles (EP4) on 18 Nov 2019, which became effective on all mandated transactions on 1 July 2020. The key updates for EP4 include:

- Human rights risks and impacts;
- Climate change risks and impacts;
- Designated Countries and applicable standards; and
- Scope of applicability of the EPs.

Under the EPs, designated countries are defined as those countries deemed to have robust environmental and social governance, legislation systems and institutional capacity designed to protect their people and the natural environment. At present, BiH is not listed as a designated country and EPFIs are therefore required to comply with EPs in this case.

2.4.3 International Finance Corporation Performance Standards and Guidelines

The IFC PS, updated in January 2012, are considered one of the most comprehensive standards available to international finance institutions working within the private sector. The IFC PS define a project's role and responsibilities for managing health, safety, environmental and community issues to receive and retain IFC and/or Equator Principles-participating lender support. The Performance Standards are summarised below.

Performance Standard	Description
PS1 – Assessment and Management of Environmental and Socials Risks and Impacts	This standard seeks to identify and assess the social and environmental impacts of the project, clarifying mitigation measures that are necessary.
PS2 – Labour and Working Conditions	This standard seeks to establish, maintain and improve the working relationship between workers and management as well as demanding a safe and healthy work place for all.
PS3 – Resource Efficiency and Pollution	This standard aims to address adverse impacts on human health and the environment by minimizing pollution and reducing the emissions that contribute to climate change.
PS4 – Community Health, Safety, and Security	This standard limits risks and impacts to the local communities associated with all phases of a project. It requires that the health and safety risks be evaluated during all phases of the project and that preventative measures be implemented to a level that is commensurate with the risk.
PS5 – Land Acquisition and Involuntary Resettlement	This standard seeks to avoid and minimize involuntary resettlement and to mitigate unavoidable adverse impacts through compensation for loss of economic assets and economic and standard of living restoration measures.
PS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources	This standard aims to balance the conservation of biodiversity with the promotion of sustainable management of natural resources.
PS7 – Indigenous Peoples	This standard seeks to ensure that project development respects the dignity, human rights and cultures of indigenous peoples and avoids adverse impacts to their traditions and values. <i>NB: Stakeholder mapping for the Vares Project shows that there are no recognised Indigenous peoples in the region, as per the definition in IFC PS7. This PS is therefore not applicable to the Project.</i>

⁴ World Bank's International Finance Corporation Performance Standards 2012, available at: https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards

Table 2.4: IFC Performance Standards⁴	
Performance Standard	Description
PS8 – Cultural Heritage	This standard protects cultural heritage sites from project-related impacts and promotes the equitable sharing of benefits from the use of cultural heritage in business activities.

2.4.4 European Bank for Reconstruction Development

This ESIA has been prepared to meet the requirements of the 2019 EBRD Environmental and Social Policy, including the EBRD Performance Requirements (PRs), focused on a key range of environmental and social issues and impacts in alignment with the IFC and EPs. The PRs require compliance with EU substantive environmental standards where they can be applied at the project level, as presented below:

Table 2.5 EBRD Performance Requirements (2019)⁵	
Performance Requirement	Description
PR1: Assessment and Management of Environmental and Social Impacts	This requirement ensures the environmental and social impacts associated with the project are identified along with the management of the environmental and social performance, via an Environmental and Social Management System (ESMS).
PR2: Labour and Working Conditions	This PR seeks to ensure the workforce and employees, both men and women, of the project have workers' rights and ensures workers are treated fairly with safe and healthy working conditions.
PR 3: Resource Efficiency and Pollution Prevention and Control	This PR outlines an approach to climate impacts and greenhouse gas (GHG) emissions, resource management and pollution, in addition to minimise and managing risks and impacts associated with hazardous substances.
PR4: Health, Safety and Security	The PR seeks to avoid and mitigate against negative health and safety impacts and issues related to the project on workers, stakeholder communities and consumers. It includes HS risks associated with the whole lifetime of the project including construction, operations and decommissioning.
PR5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	This PR refers to both physical and economic displacement that may occur due to the project or related activities. The application of PR5 supports human rights and freedoms.
PR6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	This PR supplements the understanding that the conservation of biodiversity is necessary for environmental and social sustainability through maintaining core ecological functions of ecosystems, and the sustainable management of living resources.
PR7: Indigenous Peoples	This PR seeks to ensure Indigenous Peoples and their dignity, rights, aspirations, cultures, customary laws, and livelihoods are respected. The project should converse and collaborate with local governments, authorities and communities to ensure appropriate management is in

⁵ EBRD Performance Requirements, as determined in the 2019 Environmental and Social Policy, available at <https://www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html>

Table 2.5 EBRD Performance Requirements (2019)⁵	
Performance Requirement	Description
	place to avoid, and where not possible, reduce risks and impacts of the project activities. <i>NB: Stakeholder mapping and consultation undertaken for the Vares Project shows that there are no recognised Indigenous peoples in the region, as per the defining characteristics in EBRD PR7 (see Table 2.6). This PR is therefore not applicable to the Project.</i>
PR8: Cultural Heritage	This PR understands the importance of preserving and conserving all aspects of cultural heritage from past to future generations. The PR sets out to reduce and mitigate against negative impacts to cultural heritage that a project may produce throughout its lifetime. Promote awareness of significant elements or cultural heritage.
PR9: Financial Intermediaries	This PR seeks that Financial Intermediaries (FIs) have delegated responsibilities for environmental and social risks of the project, of which their management will be monitored throughout the project lifetime as FIs can be a key tool in promoting sustainable financial markets (Does not apply for the Vares Project).
PR10: Information Disclosure and Stakeholder Engagement	This PR acknowledges the importance of open and transparent engagement between the project, workers and employees, local communities and any potential stakeholder directly affected by the project and its related activities. This PR involves GIIP with continual stakeholder engagement including public disclosure of information, meaningful consultation with stakeholders and a grievance mechanism.

Table 2.6: Assessment of applicability of PR7	
EBRD PR7 criteria	Applicability to the Project
Self-identification as members of a distinct indigenous ethnic or cultural group and recognition of this identity by others.	During household surveys, consultations and engagement undertaken as part of the ESIA, there were no records of members identifying as distinct ethnic or cultural groups.
Collective attachment to geographically distinct habitats, traditional lands or ancestral territories in the project area and to the natural resources in these habitats and territories.	Whilst there is a strong connection from community members to the region and land in the region, this is not deemed to be ancestral or related to traditional lands. The connection comes from the experiences of elderly population and Bosnian war.
Descent from populations who have traditionally pursued non-wage (and often nomadic/transhumant) subsistence strategies and whose status was regulated by their own customs or traditions or by special laws or regulations	None identified
Customary cultural, economic, social or political institutions that are separate from those of the dominant society or culture	Three distinct ethnicities are identified (Bosnian, Croat and Serbian). These are directly linked to political groups. No other parties were identified.
A distinct language or dialect, often different from the official language or dialect of the country or region.	None identified

2.5 International Agreements and Conventions

2.5.1 Environmental Conventions

BiH is a signatory or has ratified the following international conventions on the environment:

- Convention on Biological Diversity, accession 26 August 2002;
- Convention on Fishing and Conservation of Living Resources of the High Seas, succession 12 January 1994;
- Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water;
- United Nations Convention on the Law of the Sea (LOS), succession 15 August 1994;
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, ratified 16 March 2001;
- Convention on Long-Range Transboundary Air Pollution, ratified 01 September 1993;
- Vienna Convention for the Protection of the Ozone Layer, ratified 01 September 1993;
- Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), ratified 21 April 2009;
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar), ratified 24 September 2001;
- Kyoto Protocol to the United Nations Framework Convention on Climate Change, ratified 16 April 2007, substituted by the Paris Agreement, ratified 16 March 2017;
- Protocol on Water and Health, ratified 03 December 2009;
- Montreal Protocol on Substances That Deplete the Ozone Layer, ratified 01 September 1993;
- United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, ratified 26 August 2002;
- Convention on Migratory Species, ratified 01 December 2017;
- Kyiv Protocol on Pollutant Release and Transfer Registers (PRTR), ratified 20 July 2017;
- Protocol on Strategic Environmental Assessment, ratified 20 July 2017; and
- United Nations Framework Convention on Climate Change (UNFCCC), ratified 07 September 2000.

2.5.2 Labour and Workers Rights Conventions

BiH has ratified the eight core Conventions of the International Labour Organisation (ILO):

- No. 29 on Forced Labour, 1930;
- No. 87 on Freedom of Association and Protection of the Right to Organize, 1948;
- No. 98 on the Right to Organize and Collective Bargaining, 1949;
- No. 100 on Equal Remuneration, 1951;
- No. 111 on Discrimination (Employment and Occupation), 1964;
- No. 105 on the Abolition of Forced Labour, 1966;
- No. 138 on Minimum Age of Employment, 1973; and
- No. 182 on the Worst Forms of Child Labour, 2002.

2.5.3 Human Rights

BiH has signed and ratified, either through state succession or by depositing an instrument of accession, the following human rights treaties and optional protocols:

- The Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) – accession on September 1, 1993;
 - Optional Protocol of the Convention Against Torture - signed on December 7, 2007; ratified on October 24, 2008;
- The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), state succession on September 1, 1993;
- The Convention on the Rights of Persons with Disabilities (CRPD), signed on July 29, 2009; ratified on March 12, 2010;
- The Convention on the Rights of the Child (CRC), state succession on September 1, 1993;
 - Optional Protocol on the Involvement of Children in Armed Conflict, signed September 7, 2000; ratified October 10, 2003;
 - Optional Protocol on the Sale of Children, Child Prostitution and Child Pornography, signed September 7, 2000; ratified September 4, 2002;
- The International Convention for the Protection of All Persons from Enforced Disappearance (ICPED) – signed on February 6, 2007; ratified March 30, 2012;
- The International Convention on the Elimination of All Forms of Racial Discrimination (ICERD), state succession on July 16, 1993;
- The International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (ICRMW), accession on December 13, 1996;
- The International Covenant on Civil and Political Rights (ICCPR), state succession on September 1, 1993;
 - Second Optional Protocol for the Abolition of the Death Penalty, signed on September 7, 2000; ratified on March 16, 2001; and
- The International Covenant on Economic, Social and Cultural Rights (ICESCR), state succession on September 1, 1993.

2.6 Standards and Legislation by Environmental Aspect

2.6.1 Air Quality and Vehicle Emissions

Air Quality standards relevant to the Project and to be used for the ESIA are determined based on the most stringent values applicable to the Project. These are defined in bold in Table 2.7 and Table 2.8.

Table 2.7 Ambient Air Quality Guidelines Applicable to the Project

Pollutant	National Standards	EU Air Quality Standards ⁶	WHO/IFC Guideline ⁷
Dust Deposition Rates	200 mg/m²/day 350 mg/m² measured over a 4-week period	-	-
Total Suspended particles (TSP)	-	-	-
PM ₁₀	40µg/m ³ annual mean 50µg/m ³ 24 hour mean	40µg/m ³ annual mean 50µg/m ³ 24 hour mean	20µg/m³ annual mean 50µg/m³ 24 hour mean
PM _{2.5}	20µg/m ³ Annual mean	25µg/m ³ 24 hour mean	10µg/m³ annual mean 25µg/m³ 24 hour mean
SO ₂	50µg/m³ annual mean 125µg/m ³ 24hour mean 350µg/m ³ 1-hour mean	125µg/m ³ 24hour mean 350µg/m ³ 1-hour mean	20µg/m³ 24-hour mean 350µg/m³ 1-hour mean
NO ₂	40µg/m ³ annual mean 85µg/m ³ 24hour mean 200µg/m ³ 1-hour mean	40µg/m ³ annual mean 200µg/m ³ 1-hour mean	40µg/m³ annual mean 200µg/m³ 1-hour mean
Carbon Monoxide (CO)	3 mg/m ³ annual mean 5 mg/m ³ 24hourmean 10 mg/m ³ 8-hourly mean	10 mg/m ³ 8-hourly mean	30 mg/m³ 1hour mean 10 mg/m³ 8-hourly mean
Lead (Pb) in total dust	0.1 (4-week period)	-	-
Cadmium (Cd) in total dust	0.002(4-week period)	-	-
Zinc (Zn) in total dust	0.4(4-week period)	-	-
Titanium (Ti) in total dust	0.02(4-week period)	-	-
Arsenic (As) in total dust	0.004(4-week period)	-	-
Nickel (Ni) in total dust	0.015(4-week period)	-	-
Mercury (Hg) in total dust	0.001(4-week period)	-	-
Wood Dust	-	3 mg/m³ 8-hourly mean	-

⁶ European Union, Air Quality Standards under Directive 2008/50/EU

⁷ World Health Organization (WHO). Air Quality Guidelines Global Update, 2005

Parameter	EU Medium Combustion Plants Directive (mg/Nm ³) ⁸	EU Industrial Emissions Directive (mg/Nm ³) ⁹	IFC's Emission Guidelines for Small Combustion Facilities Emissions (3MWth – 50MWth) ¹⁰
Sulphur oxides	400	400	0.5 percent Sulphur or lower percent Sulphur if commercially available without significant excess fuel cost
Nitrogen Oxides	300	300	N/A
Total suspended particulates	20	30	96 ppm (Electric generation) 150 ppm (Mechanical drive)

2.6.2 Noise

Noise standards relevant to the Project are identified in Table 2.9. Selected standards are shown in bold, these represent those legally binding as well as the most stringent. Note that WHO also state that the predicted site noise level should not exceed the background (or ambient) by +3 L_{Aeq,1hr} dB for both daytime and night-time noise.

Location	Daytime (dB)	Night-time dB	L _{Amax}	Reference
Internal noise levels from stationary noise sources	40 (L_{Aeq,15 min})	30 (L_{Aeq,15 min})	45	Law on protection against noise "Official Gazette of F BiH" No 110/12 - Table 1 Ref F1
Internal noise levels from non-stationary noise sources	45(L_{Aeq,15 min})	35(L_{Aeq,15 min})	50	Law on protection against noise "Official Gazette of F BiH" No 110/12 - Table 1 Ref F2
Internal Noise Level in Noise Sensitive Rooms	35 (L_{Aeq,16 hour})	30 (L_{Aeq,8 hour})	45	WHO Guidelines for Community Noise
Absolute noise level (compliance criteria - not to be exceeded)	55 (L _{Aeq,1hr})	45 (L _{Aeq,1hr})		WHO Guidelines for Community Noise
External noise limits for residential, education and health institutions, public green space, and recreation areas.	55(L _{Aeq,15 min})	45(L _{Aeq,15 min})	70	Law on protection against noise "Official Gazette of F BiH" No 110/12 - Table 2 Ref III
External Noise Exposure	50 to 55 (L _{Aeq,16 hour})	N/A	N/A	WHO Guidelines for Community Noise
External Noise Exposure (Residential, Institutional, Educational)	55 (L _{Aeq,16 hour})	45 (L _{Aeq,8 hour})	N/A	International Finance Corporation (IFC) Environmental, Health, and Safety (EHS) Guidelines - General EHS Guidelines

⁸ Directive (EU) 2015/2193 of the European Parliament and the Council of 25 November 2015 on the limitation of emissions of certain pollutants into the air from medium combustion plants

⁹ Directive 2010/75/EU of the European Parliament and the Council on industrial emissions

¹⁰ IFC's General EHS Guidelines: Environmental - Air emissions and ambient air quality

2.6.3 Vibration

Regarding vibration, the threshold limits as determined by the American Conference of Industrial Hygienists (ACGIH) for hand arm vibration and the European Vibration Directive Exposure Limits (2002/44/EC) for whole body vibration in the workplace exposure are summarised in Table 2.10.

There is no direct comparison between the two sets of guidelines, as the ACGIH has values dependent on duration of exposure and is based on any single axis exceeding 4m/s^2 . The EU DELV identifies 5m/s^2 as the vector sum of the three axes and is based on an 8hr exposure time. There is no major difference in standard between the two; therefore, the Project will use the EU Daily exposure limits as it is multi directional compliance criteria, Table 2.10.

Total Daily Exposure Duration (hours) (ACGIH)	Maximum value of frequency weighted acceleration (m/s^2) in and direction
4 to less than 8 hours	4
2 to less than 4 hours	6
1 to less than 2 hours	8
Less than 1 hour	12
Daily exposure (EC Directive - 2002/44/EC)	Maximum value of frequency weighted acceleration (m/s^2) in and direction
Daily Exposure Limit Value 8hr (DELV)	5
Daily Exposure Action Value (DEAV)	2.5

2.6.4 Water Quality

Within BiH there are many regulations in place for water quality and pollution control. The Law on Waters of the FBiH categorises and classifies water and water is defined in codes as per below:

- Class I MPC values – Springs and Groundwater within Sanitary protection Zones I-IV;
- Class II MPC values– Streams;

The *Decree on Hazardous and Harmful Substances in Waters* describes substances and their maximum permitted concentrations by individual water classes, which are considered either hazardous or harmful substances. Definitions of hazardous and harmful substances, as provided within the *Decree on Hazardous and Harmful Substances in Waters*, are provided below:

- *Hazardous substances are substances, energy and other causes that by their physical, chemical and biological composition, quantity and other properties may endanger human life and health and survival fauna and flora and the state of the environment.*
- *Harmful substances are substances that can cause chemical, physical and biological changes to property of water as a result of which the use of water for useful purposes is limited or prevented.*

Class I MPC values are comparable with European Environmental Quality Standards (EQS's) protection values. Groundwater and surface water samples for the Vares Project are assessed against the *Bosnian Maximum Permissible Concentrations (Decree on Hazardous and Harmful Substances in Waters)* regulations¹¹.

Where *Bosnian Maximum Permissible Concentrations* guideline values do not exist, Groundwater and spring water results have been compared with UK Drinking Water Standards (UKDWS) and surface water results have been compared with EU Environmental Quality Standards as seen in Table 2.11.

Table 2.11: Assessment Criteria for Groundwater and Surface Water Analysis.						
Parameter	Units	Detection Limit	Guideline Value		Bosnia Maximum Permissible Concentrations (Decree on Hazardous and Harmful Substances in Waters)	
			EQS	UKDWS	I - II Class Surface Water	III - IV Class Surface Water
Calcium	mg/l	/	-	250	-	-
Magnesium	mg/l	/	-	50	-	-
Sodium	mg/l	0.2	-	200	-	-
Potassium	mg/l	0.2	-	12	-	-
Chloride	mg/l	/	250	250	-	-
Sulphate	mg/l	/	400	250	-	-
Fluoride	mg/l	0.002	-	1.5	300	1500
Phosphate	mg/l	0.001	-	-	-	-
Physio-Chemical Parameters						
Electrical Conductivity	µS/cm	/	-	2500	-	-
Nutrients						
Ammoniacal Nitrogen as N (filtered)	mg/l	0.02	0.3	-	-	-
Ammoniacal nitrogen as N	mg/l	0.02	0.39	-	-	-
Nitrate as N	mg/l	0.005	-	50	0.5	1.5
Minor Ions						
Aluminium	µg/l	1	-	200	1500	1500
Arsenic	µg/l	1	50	10	50	50
Barium	µg/l	10	-	1000	1000	4000
Boron	µg/l	20	-	1000	-	-
Cadmium	µg/l	0.5	0.25	-	0.5	5
Chromium	µg/l	6	3.4	50	1	6
Copper	µg/l	3	1	2000	2	10
Iron	µg/l	6	1000	200	100	1000
Lead	µg/l	10	1.2	10	2	80
Manganese	µg/l	2	123	50	50	1000
Mercury*	µg/l	1	0.07	1	0.02	0.1

¹¹ Bosnian MPC Guidelines. Law on waters of the Federation of Bosnia and Herzegovina ("Official Gazette of FBiH", No. 70/06. Implementing Codes for use of Water Classes (Vode Kategorizaciji, Uredba Vlade Federacije BiH za 2007.) In Summary: streams are regulated under Class II MPC values, water sources i.e. Springs and Groundwater within Sanitary protection Zones I-IV are regulated under Class I MPC Values. Class I MPC values are comparable with European EQS protection values (same for As, same as Drinking Water Standards for Ba, less stringent on Pb and Zn, more stringent on Hg).

Parameter	Units	Detection Limit	Guideline Value		Bosnia Maximum Permissible Concentrations (Decree on Hazardous and Harmful Substances in Waters)	
			EQS	UKDWS	I - II Class Surface Water	III - IV Class Surface Water
Nickel	µg/l	3	4	20	15	30
Selenium	µg/l	1	-	10	10	10
Tin	µg/l	2	-	-	100	500
Zinc	µg/l	1	10.9	5000	50	80
Cyanide (total)	µg/l	/	1	50	1	100
Sulphide	µg/l	/	-	-	2	5
Total TPH	ug/l	20	-	10	-	-
Total PAH	ug/l	0.1	-	0.1	0.2	1

EU Environmental Quality Standards (EQS's) are used in the UK and throughout EU legislation to assess the quality of surface waters. EQS's are defined below:

EU environmental quality standards (EQSs) concern the presence in surface waters, of certain substances or groups of substances identified as priority pollutants because of the significant risk they pose to or via the aquatic environment. These standards are in line with the strategy and objectives of the EU's Water Framework Directive (Directive 2000/60/EC)¹².

2.6.5 Soils

BiH does not currently have standards for contaminated soils, only soils used for agriculture. Although comparable to international standard values (such as Canadian CCME for agricultural soils¹³ and the EC directive for agricultural soils which monitors soil heavy metals¹⁴) there are differences, for example BiH levels have lower target levels for cadmium and mercury. From the laboratory results it was determined that loamy soils rather than clay soils were most representative of the site, giving slightly lower limits than if those for clay soils.

To provide a fair evaluation of the contamination within the project area, Good International Industry Practice (GIIP) has been followed, namely IFC EHS guidance documents for contaminated land¹⁵ which specify the evaluation of analytical results against local and national or, in their absence, international guidance. Hence where soils are located in areas with no history of industrial activities they have been considered to be 'Natural' and compared to BiH agricultural limits, and where soils are located in areas

¹² THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION (2018). Environmental quality standards applicable to surface water. Last accessed: 08/12/2020. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3A128180>

¹³ Canadian Council of Ministers of the Environment. 2018. Soil Quality Guidelines for the protection of environmental and human health.

¹⁴ EC Directive 86/278/EEC.

¹⁵ IFC 2007. Environmental, Health, and Safety (EHS) Guidelines, General EHS Guidelines: Environmental. Section 1.8 Contaminated Land. Pp 54 – 59.

with history of industrial activities they have been compared to international guidance, Canadian Soil Quality Guidelines for industrial soils from the Canadian Council of Ministers of the Environment (CCME).

Where 'natural' background levels exceed the BiH agricultural and CCME limit or no limits are available at locations within the project area with no history of industrial activity that may have led to contamination, the following methodology has been undertaken. The value which will be considered as contaminated will be set at the maximum recorded concentration of 'natural' soils in the area + 15% tolerance. Otherwise, contaminated limits are identified to conform with BiH limits for natural soils and CCME requirements for industrial soils.

Table 2.12: Assessment Criteria for Soil and Contaminated Land Analysis.		
Analyte	CCME industrial soil Guideline Value(mg/kg⁻¹)	BiH agricultural Guideline Value (mg/kg⁻¹)
Arsenic (As)	12	15
Boron (B)	ND	40
Cadmium (Cd)	22	1
Chromium (Cr)	87	80
Cobalt (Co)	300	45
Copper (Cu)	91	65
Lead (Pb)	600	80
Mercury (Hg)	50	1
Nickel (Ni)	89	40
Zinc (Zn)	410	150
Thallium (Tl)	Max natural background plus 15% used, as no limits available. Contamination limit: 8.74	
Total PAH	ND	2
Sulphides	ND	400
Cyanide	8	ND
Phenols	3.8	ND

2.6.6 Waste Management

IFC EHS Guidelines define best practice for waste management as a sequential strategy of waste prevention, reduction, reuse, recovery, recycling. Non-hazardous wastes remaining after application of this strategy should be treated or disposed of at permitted facilities specially designed to receive the waste. Examples include compositing operations for organic, non-hazardous wastes; properly designed, permitted and operated landfills or incinerators designed for the respective waste type; or other methods known to be effective in the safe, final disposal of waste materials, such as bioremediation. Similarly, EBRD PR3 states that where waste cannot be avoided but has been minimised, the waste should be recycled, reused, recovered or used as an energy source. Where the waste cannot be recovered or reused the client will treat, destroy, and dispose of it in an environmentally sound manner. Waste is also considered by key EU legislation and directives, namely the Waste framework directive which sets out the philosophy described.

Waste management should be provided for waste from mining and processing operations as well as non-process waste. Other waste materials include industrial/construction waste, domestic/office waste, and hazardous waste. Waste materials should be classified based on their need for special handling, and specific handling and management strategies for wastes should be detailed in a project's Waste Management Plan. The following presents a general summary of the waste management concepts for a project. Waste management should seek to:

- Reduce waste generation at source;
- Maximize re-use and recycling; and
- Practice safe management of non-reusable and non-recyclable wastes.

These goals can be accomplished by:

- Incorporating specific design criteria into the planning of the project and prior to commencement of construction activities;
- Incorporating waste management requirements in equipment specifications;
- Reusing/recycling excess and waste materials;
- Storing and disposing of waste materials in an appropriate manner; and
- Instituting management controls for these programs.

A Waste Management Plan, as part of the ESIA, covers waste streams that may be generated during the construction and operational phases of the mining operations to ensure international best practice standards are met. Nominally, waste streams include:

- mine process wastes (mine tailings and process chemicals);
- hazardous wastes (waste oils, chemical containers, and medical wastes);
- industrial wastes (inert wastes such as plastic, glass, and construction materials); and
- domestic (organic) wastes (kitchen wastes, food and plant material, decomposable refuse).

With respect to mine process wastes, specifically tailings management facilities, GIIP has been followed namely, the Global Industry Standard on Tailings Management.

The IFC EHS Guidelines for Mining require that, where there is need for disposal of non-hazardous waste (non-mining), it should **not** be disposed of together with waste rock "except in exceptional circumstances." Best practice standards also require that disposal of hazardous and non-hazardous waste, by landfill, not be conducted within the same engineered cell.

In addition to the IFC and EBRD, GIIP includes the Reference document on Best Available Techniques for the management of tailings and waste-rock in mining activities 2018². The guide covers the diverse nature of the extractive industry and includes BAT of how to manage extractive waste and relevant treatment all revolving around the 'circular economy', an EU action plan where the value of products, materials and resources is preserved, and waste is minimised.

2.7 Company Policy

Adriatic Metals PLC (AM) as a company, have a range of environmental, social and human resources policies designed to guide the management of their Projects. AMs corporate policies are as below, please note these are not site specific to the Project:

- Corporate Governance Manual;
- Anti-Bribery and Corruption Policy;
- Audit and Risk Committee Charter;
- ESG Committee Charter;
- Climate Change Policy 09/11/2020;
- Human Rights Policy 09/11/2020;
- Health and Safety Policy 09/11/2020;
- Human Resources Policy 09/11/2020;
- Social Performance and Community Policy 09/11/2020;
- Modern Slavery Statement 2020;
- Environment Policy 09/11/2020;
- Procurement Policy 09/11/2020; and
- Trading Policy and Dealing code.

To meet international best practice AM, will be required to develop a number of environmental and social management plans, AM have developed the following:

- Health and Safety Management Plan;
- Strategic Blueprint (covering human resources and local employment);
- Air Quality and GHG Management Plan;
- Noise and Vibration Management Plan;
- Traffic Management Plan;
- Soils, Contaminated Land and Erosion Control Management Plan;
- Hazardous Materials Management Plan;
- Waste and Hazardous Waste Management Plan;
- Surface Mineral Waste Disposal Plan;
- Cultural Heritage Management Plan with Chance Finds Procedure;
- Community, Health, Safety and Security Management Plan;
- Contractor Environmental Management Plan;
- Land Acquisition, Compensation and Livelihood Restoration Plan;
- Biodiversity Action Plan;
- Water and Waste-water Management Plan;
- Stakeholder Engagement Plan;
- Emergency Preparedness and Response Plan and
- Conceptual Mine Closure Plan.