

Mongolian Sustainable Finance Principles

Mining Sector Guideline

Table of Contents

Glossary of Terms	3
1. Introduction	5
2. Objectives	5
3. Scope and Applicability	5
4. E&S Issues in the Mongolian Mining Sector	6
5. E&S Requirements for Mining Sector Transactions in Mongolia	7
6. On-going Monitoring	9
7. Reporting	9
Appendix 1: Mongolian Mining Sector Activity and Associated E&S Issues	10
Appendix 2: Relevant Mongolian E&S Laws for the Mining Sector	20
Appendix 3: Relevant Mongolian and International E&S Standards, Principles and other References for the Mining Sector	21
Appendix 4: Relevant Mining Sector Stakeholders in Mongolia	23

Glossary of Terms

Term or Abbreviation	Definition
Bank	A Mongolian Bank signatory to the Mongolian Sustainable Finance Principles Joint Commitment Statement.
Blasting	Rock blasting is the controlled use of explosive and other methods such as gas pressure blasting pyrotechnics or plasma processes, to excavate, break down or remove rock (geology). It is practiced most often in mining, quarrying and civil engineering such as dam or road construction.
Business Activities	The provision of financial products and services to clients including, but not limited to: corporate finance, investment banking (structured lending and capital, trading), equity investments, project finance, structured commodity finance, small and medium business lending, retail banking, trade and leasing, and other forms of direct lending.
Business Operations	The undertakings of employees and the physical human capital, assets and infrastructure (e.g. offices, branches, equipment) that a Bank engages in the course of facilitating its Business Activities. This would also include suppliers, contractors and third party providers engaged by a Bank in the course of facilitating its Business Operations and Business Activities.
BoM	Bank of Mongolia (Mongol Bank)
Coal preparation plant	A coal preparation plant (CPP) is a facility that washes coal of soil and rock, crushes it into graded sized chunks (sorting), stockpiles grades preparing it for transport to market, and loads coal into rail cars, barges, or ships.
Cyanidation process	Gold cyanidation is a metallurgy technique for extracting gold from low-grade ore by converting the gold to a water-soluble coordination complex. It is the most commonly used process for gold extraction. Due to the highly poison nature of cyanide, the process is controversial and its usage is banned in a number of countries and territories.
Drilling	The case of drilling is to get an understanding of the ground/lithology. This may be done for prospecting to identify and quantify an ore body for mining, or to determining the type of foundations needed for a building or raised structure, or for underground structures, including tunnels and deep basements where an understanding of the ground is vital to determining how to excavate and the support philosophy. Drilling is also used in vertical and inclined shaft construction.
DEIA	A Detailed Environmental Impact Assessment is the regulatory required environmental impact assessment document needed to be submitted to the Ministry of Environment and Green Development in order to obtain a project license as required under the Mongolian Law of Environmental Impact Assessment.
EIA	An environmental impact assessment is a formal process used to predict the environmental consequences (positive or negative) of a plan, policy, program, or project prior the implementation decision. It proposes measures to adjust impacts to acceptable levels or to investigate new technological solutions.
EPP	An Environmental Protection Plan is a plan developed by a project and approved by the Ministry of Environment and Green Development, that reflects all monitoring and mitigation measures for identified impacts of the proposed project.
E&S	Environmental and Social
E&S risks	The potential E&S issues associated with a client or engagement that may imply exposure to risk and accordingly may need to be taken into account when making business and risk management decisions.

Term or Abbreviation	Definition
E&S impacts	Any change, potential or actual, to (a) the physical, natural, or cultural environment, and (b) impacts on surrounding community and workers, resulting from a business or Business Activity to be financed. E&S impacts may be temporary or permanent, involving reversible or irreversible changes on the environment or society. Environmental risks can include changes to the atmosphere, water and land due to human activities (e.g. greenhouse gases, pollution, changes to habitats, etc.). Social risks can include impacts to a client's workforce as well as the surrounding community (e.g. occupational health and safety, human rights and labour standards, land disputes or resettlement, corruption, etc.).
E&S opportunities	New business opportunities arising from meeting E&S challenges such as development of clean or renewable technology, job creation and community development. Taking account of E&S issues in making a business decision, could also lead to potential benefits to the client or the Bank providing financial services to the client.
Equator Principles	The Equator Principles are a voluntary set of standards for identifying, assessing and managing E&S risk in project financing.
Flotation process	Froth flotation is a process for selectively separating hydrophobic materials from hydrophilic. This is used in several processing industries. Historically this was first used in the mining industry. It has been described as "the single most important operation used for the recovery and upgrading of sulphide ores. The development of froth flotation improved the recovery of valuable minerals, such as copper- and lead-bearing minerals.
IFC	International Finance Corporation
MEGD	Ministry of Environment and Green Development
MRAM	Mineral Resource Authority of Mongolia
PAM	Petroleum Authority of Mongolia
Principles	Mongolian Sustainable Finance Principles
SME	Small and Medium Enterprise
SW – EX process	The solvent extraction / electrowinning process uses a relatively simple process to produce practically pure copper from slightly acidic water that has been percolated through huge stockpiles of copper-bearing rock.
Sustainable Finance	An approach that recognises the role of Banks in driving long term economic development in Mongolia that is not only economically viable, but also environmentally responsible and socially relevant.
Tailing Storage Facility	Tailings and waste rock storage facilities are designed, constructed and operated to the highest standards, taking into account the eventual need for closure and rehabilitation. Optimum strategies for facility management are site specific and therefore the facility location, disposal method, approach to water management and long term closure objectives must be clearly defined.
Uranium mining	Uranium mining is the process of extraction of uranium ore from the ground. After mining uranium ores, they are normally processed by grinding the ore materials to a uniform particle size and then treating the ore to extract the uranium by chemical leaching. The milling process commonly yields dry powder-form material consisting of natural uranium, "yellowcake," which is sold on the uranium market as U3O8.
Textile production	Production of yarn and cloth, subsequent design and manufacturing of clothing.
Waste recycling	Process to change waste materials into new products to prevent waste of potentially useful materials, reduce the consumption of fresh raw materials, reduce energy usage, reduce air pollution (from incineration) and water pollution (from landfilling) by reducing the need for "conventional" waste disposal, and lower greenhouse gas emissions.
Wastewater treatment	Industrial structure designed to remove biological or chemical waste products from water, thereby permitting the treated water to be used for other purposes.

1. Introduction

This Guideline for banks providing debt or equity to the Mining sector or mining activities was developed as a companion document to the Mongolian Sustainable Finance Principles (the Principles):

- Principle 1 | Protect the natural environment
- Principle 2 | Protect people and communities
- Principle 3 | Protect cultural heritage
- Principle 4 | Promote "green economy" growth
- Principle 5 | Promote financial inclusion
- Principle 6 | Promote ethical finance and corporate governance
- Principle 7 | Promote transparency and accountability
- Principle 8 | Practice what we preach

All banks involved in financing mining sector clients, projects or transactions should apply the Mongolian Sustainable Finance Principles and this Sector Guideline when assessing new clients, projects or transactions. The Sector Guideline is designed to be consistent with, and support the furtherance of, the implementation of the Mongolian Sustainable Finance Principles. The main focus of this Sector Guideline is on E&S risk management, however banks should also consider opportunities for E&S performance improvement beyond risk management.

2. Objectives

The objective of the Mining Sector Guideline is to provide guidance to the Banks with regard to the assessment of potential environmental and social (E&S) risks and opportunities associated with providing debt or equity to clients' mining sector activities. The Guideline is designed to support Banks to:

- Identify the risks and opportunities associated with a mining sector client's activities as well as their ability to manage E&S issues (see **Appendix 1, Table 1**);
- Develop E&S risk rating criteria for assessing and categorising E&S risks associated with mining sector activities at the transaction and client level;
- Adopt relevant industry international standards and best practices in management of E&S risk exposure associated with providing finance to mining sector clients or transactions;
- Adopt an approach to promote transparency¹ and accountability when providing finance to mining sector clients or transactions;
- Where appropriate identify and explore potential opportunities to improve a client or transaction's environmental and social performance.

3. Scope and Applicability

This Guideline will apply to all Banks adopting the Principles and will cover Business Activities relating to mining sector clients or investee companies. For the purposes of this Guideline, mining sector activities include, but are not limited to:

1. Exploration projects and associated facilities;
2. Metal mining projects and associated infrastructure;
3. Non-metal mining projects and associated infrastructure; and
4. Energy resource mining projects and associated infrastructure.

¹ <http://www.eitimongolia.mn/home.shtml>

See the table below for a list of more specific sub – sector activities that fall under these main activity groups.

Sector Activity	Sub-sector Activities
Exploration project	<ul style="list-style-type: none"> • Drilling • Seismic, remote sensing and geophysical surveys • Trenching
Metal mining project	<ul style="list-style-type: none"> • Copper and other metal – open pit or underground mining • Gold – open pit or underground mining • Iron – open pit or underground mining
Non metal mining project	<ul style="list-style-type: none"> • Building material quarry • Fluorspar – open pit or underground mining
Energy resource mining project	<ul style="list-style-type: none"> • Coal – open pit or underground mining • Oil shale and Petroleum mining • Uranium mining

E&S risks, for the purposes of this Guideline, refer to potential impacts on and risks to the environment and local communities by a Bank’s client’s activities and its primary supply chain parties relating to mining construction, production and operational activities. Refer to **Appendix 1: Mining sector activity and associated E&S risks**.

4. E&S Issues in the Mongolian Mining Sector

There are a number of considerations for assessing E&S risk when providing finance to a mining sector client, project or transaction, including but not limited to:

- The type and scale of mining activity (see **Appendix 1**);
- The location of a mining concession in relation to natural resources, protected areas, and communities and their economic activities; and
- Potential impacts on the environment (including pollution, loss of biodiversity, natural resource depletion, etc.) or community (including hazards to human health, safety and security, economic displacement, etc.), and threats to a region's cultural heritage (see **Appendix 1**).

Some E&S issues have higher levels of risk associated with them. The table below provides examples of high and medium risk transactions:

Risk Level	Additional Information
<p>A high-risk transaction involves activities that carry potential significant adverse E&S risks and/or impacts that are diverse, irreversible or unprecedented.</p>	<p>Examples of the types of mining activities that would fall into this category of risk would include:</p> <ol style="list-style-type: none"> 1. Copper and uranium mining which uses toxic chemicals such sulphuric acid solution (leaching process); 2. Hard rock gold mining which uses toxic chemicals such as cyanide and mercury (cyanidation process); 3. Mining projects with poor environmental, social and health and safety performances; 4. Mining projects involving hazardous chemical usage and hazardous waste; 5. Mining projects located in the vicinity of natural and cultural heritages with national importance; and 6. Mining projects located within arid areas with water shortage.
<p>A medium-risk transaction involves activities with limited, few adverse E&S risks and/or impacts which are site specific, largely reversible and readily addressed through mitigation measures.</p>	<p>Examples of the types of mining activities that would fall into this category of risk would include:</p> <ol style="list-style-type: none"> 1. Mining projects with community issues (issues associated with artisanal miner incursion and conflict between mining company and artisanal miners); 2. Mining projects using less toxic chemicals such as flotation chemical reagents (copper concentration (flotation) plant); and 3. Underground mining with non-standard work condition, which should comply with the Labour Law of Mongolia.

5. E&S Requirements for Mining Sector Transactions in Mongolia

To meet the commitments of the Mongolian Sustainable Finance Principles and successfully manage E&S issues associated with a mining sector client or transaction, each Bank shall develop and implement an E&S management system (ESMS) that assists banks in the identification, assessment, management and, where applicable, on-going monitoring of identified E&S risks including those E&S risks associated with the mining sector.

As part of its wider ESMS, a Bank will aim to apply relevant Principles to its assessment of mining sector activities. In particular, Principles 1 (Protect the natural environment), Principle 2 (Protect people and communities), Principle 3 (Protect Cultural Heritage), and Principle 6 (Promote ethical finance and corporate governance) are the most relevant for a Bank when considering mining sector clients, projects or transactions.

E&S requirements for mining sector clients, projects or transactions should be integrated into the Bank's wider ESMS approach and include, but are not limited to:

Requirement	Additional Information
<p>1. Initial crosschecking of all the client's (and if appropriate, the contractor's) documents and approvals for exploration, mining and operation.</p>	<ul style="list-style-type: none"> • Mining Company: a company is responsible for its contractor's documents including special licenses (exploration or mining) issued from relevant state agencies (see Appendix 2 and 3); • Checking the company activity type against the Exclusion list; • Feasibility study completed by professional licensed company, including the following stages: <ul style="list-style-type: none"> • Exploration; • Mine planning; • Mine development; • Operation and processing; and • Closure. • DEIA completed by professional licensed company and included following but not limited to: <ul style="list-style-type: none"> • Checking chemical, used for processing, in terms of the List of prohibited and limited usage of chemicals and dangerous substances within Mongolia; • Baseline condition of site; • Impact mitigation management plans; and • EPP, including the Rehabilitation plan. • Check client's (or, if appropriate, Contractor's) policy, procedure and records on OHS, Environmental, Social and Quality management (Company are responsible for own Contractor's management system).
<p>2. Develop a mining client or transaction E&S risk rating system to assess and categorise all risks. The assessment and categorisation outcomes are important for determining client's E&S risk level and informing credit approval, portfolio management and exit decisions.</p>	<ul style="list-style-type: none"> • See Section 4 of this document for more detail on high and medium risks associated with mining activities.
<p>3. Assess whether the transaction meets the requirements of applicable international and national E&S laws and standards (see Appendix 2 and 3).</p>	<ul style="list-style-type: none"> • Depends on Mining activity identify relevant compulsory national law, standards and international voluntary standards. • Check the client performance according to these laws and standards in terms of: <ul style="list-style-type: none"> • Environment protection including but not limited to: <ul style="list-style-type: none"> • Environment pollution; • Environment degradation; • Natural resource depletion; and • Waste management. • Social protection including but not limited to: <ul style="list-style-type: none"> • Impact on local community; and • Impacts on workers. • Identify gaps and address them in an action plan.
<p>4. Identify mining sector clients associated with significant E&S risks and assess the client's ability to manage and/or mitigate such risks.</p>	<p>Management and mitigation on the part of the client:</p> <ul style="list-style-type: none"> • Develop and implement action plans for risks involved; • Put in place comprehensive and effective stakeholder engagement mechanism (see Appendix 4); • Seek risk mitigation measures, for example through a third party sharing of potential E&S risk.

The final categorization of high, medium or low risk will be determined by considering all of the above requirements.

For clients, projects or transactions involving high and/or medium E&S risks, a Bank should ensure that the client has adequately addressed, or developed an appropriate action plan to address, identified E&S issues. In other words, a Bank should ensure that clients have appropriate management plans and procedures with corrective actions to mitigate identified negative E&S impacts and reduce E&S risk levels.

Banks can request mining sector clients to develop a systematic work plan or action plan to improve identified areas of poor or inadequate E&S performance. The plan should be credible, time-bound and documented. Banks shall, where appropriate, include conditions and covenants in the transaction documentation to ensure identified E&S risks are adequately managed and that instances of non-compliance are addressed with the client or treated as events of default.

In support of the above, and as part of the Bank's wider ESMS, each Bank should seek to build its capacity across relevant business functions with regard to E&S risk management, including provision of E&S risk training, as well as recruiting and training specialised staff. If necessary, Banks can engage qualified and independent third parties for support on E&S risk management or the provision of training; however this third party support should not be in lieu of building capacity within the Bank.

6. On-going Monitoring

Where a mining sector transaction involving E&S risk issues has been approved, a Bank should monitor the client's implementation of any agreed E&S action plans, E&S risk management plans, or other requirements that have been included in the transaction documentation to ensure effective E&S risk mitigation.

7. Reporting²

Banks shall report at least annually about its E&S management implementation processes and experience, including information of mining sector clients and transactions to BoM and MBA (see **Appendix 4**). The reporting related to mining sector transactions should at a minimum include, but is not limited to, the following:

- Number of mining sector transactions screened;
- Number of mining sector transactions approved;
- E&S risk categorisation, breakdown by mining sector activity or region; and
- On-going monitoring requirements, i.e. the progress of the agreed E&S action plan.

² Will revise when Mongolian Banks have agreed on the reporting requirements

Appendix 1: Mongolian Mining Sector Activity and Associated E&S Issues

The mining sector plays an important role in the economy of Mongolia and accounted for over 18.5% of GDP and over 88% of export earnings in 2013. It is thought that it will become the major force of economic growth for the development of Mongolia in coming years. However, the increasing level of mining activities also raises, among others, issues of environmental protection and restoration.

The nature and type of E&S issues associated with a mining sector client's activities depends on the type and scale of mining activities. Any E&S issues identified and detailed in a mining company's ESIA or DEIA as well as information and insights uncovered during the E&S risk assessment and categorization process. The following mining sector activities and associated E&S issues should be considered when assessing E&S risk at the client or transaction level. Please note E&S issues are not limited to those presented in Table 1.

Table 1: Mining sector activity & associated E&S issues

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
Exploration		<ul style="list-style-type: none"> Remote sensing survey Seismic survey Geophysical survey Drilling Trenching 	<ul style="list-style-type: none"> Soil, water pollution from chemical usage – chemical used for Drill rig Land disturbance Dust, noise, emission issues, which contribute to air pollution and climate change Waste generation 	<ul style="list-style-type: none"> Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) Rehabilitate land Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, 	<ul style="list-style-type: none"> Loss of pastureland and water access Local community unrest Natural and cultural heritage loss Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) Worker and community health and safety issues Structural safety of project Infrastructure 	<ul style="list-style-type: none"> Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage³ Comply with Mongolian Labour laws such as ILO Labour standard⁴,

³ IFC Performance Standard 8: Cultural heritage: http://www.ifc.org/wps/wcm/connect/dd8d3d0049a791a6b855faa8c6a8312a/PS8_English_2012.pdf?MOD=AJPERES

⁴ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang-en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
				including proper disposal methods and on-going monitoring		<p>applicable collective agreements and international Human rights conventions</p> <ul style="list-style-type: none"> • Comply with labour and occupational health and safety laws • Avoid adverse impacts on the health and safety of affected community • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures
Metal Mining	Copper and other metal mining	<ul style="list-style-type: none"> • Blasting • Crushing • Flotation plant • EX – SW plant • Tailing Storage facility 	<ul style="list-style-type: none"> • Soil, water pollution from chemical usage – sulphur acid solution and other flotation chemicals • Land disturbance • Dust, noise, emission and vibration issues, which contribute to air pollution and climate change • Natural resource and water depletion • Loss of biodiversity and 	<ul style="list-style-type: none"> • Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration • Avoid or reduce energy and/or water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include 	<ul style="list-style-type: none"> • Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss, including traditional lifestyle and culture • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums • Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) • Worker and community health and safety issues • Structural safety of project 	<ul style="list-style-type: none"> • Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage • Support the development of surrounding rural area • Comply with Mongolian Labour laws such as ILO Labour standards⁶, applicable collective agreements and international Human rights conventions • Comply with labour and occupational

⁶ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
			habitat disturbance • Waste generation • Waste rock and Tailings Repositories	biodiversity off-setting and on-going monitoring) • Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring • Ensure proper handling and disposal of tailings during operation, in addition to permanent storage after decommissioning ⁵	Infrastructure	health and safety laws • Avoid adverse impacts on the health and safety of affected community • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures
	Gold mining	• Blasting • Crushing • Cyanidation plant • Tailing Storage facility	• Soil, water pollution from chemical usage – mercury and cyanide • Land disturbance • Dust, noise, emission, vibration issues, which contribute to air pollution and climate change • Natural resource	• Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration • Avoid or reduce energy and/or water usage and implement water efficiency measures such as	• Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums • Human rights (e.g. breaches associated with working conditions and long work	• Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage • Support the development of surrounding

⁵ <http://www.ifc.org/wps/wcm/connect/1f4dc28048855af4879cd76a6515bb18/Final%2B-%2BMining.pdf?MOD=AJPERES&id=1323153264157>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
			<ul style="list-style-type: none"> and water depletion • Loss of biodiversity and habitat disturbance • Waste generation • Waste rock and Tailings Repositories 	<ul style="list-style-type: none"> water recycling; use renewable energy sources such as wind, solar, hydro • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include biodiversity off-setting and on-going monitoring) • Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring • Ensure proper handling and disposal of tailings during operation, in addition to permanent storage after decommissioning 	<ul style="list-style-type: none"> hours; informal employment contract) • Worker and community health and safety issues • Risk from informal artisanal mining community • Structural safety of project Infrastructure 	<ul style="list-style-type: none"> rural area • Comply with Mongolian Labour laws such as ILO Labour standards⁷, applicable collective agreements and international Human rights conventions • Comply with labour and occupational health and safety laws • Avoid adverse impacts on the health and safety of affected community • Consult with Government organization and get state support • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures
	Iron mining	<ul style="list-style-type: none"> • Blasting • Crushing • Concentration plant 	<ul style="list-style-type: none"> • Soil, water pollution from chemical usage • Land disturbance • Dust, noise, emission and vibration issues, which contribute to air pollution and climate change 	<ul style="list-style-type: none"> • Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration 	<ul style="list-style-type: none"> • Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums 	<ul style="list-style-type: none"> • Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the

⁷ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
			<ul style="list-style-type: none"> Natural resource and water depletion Waste generation 	<ul style="list-style-type: none"> Avoid or reduce energy and/or water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring 	<ul style="list-style-type: none"> Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) Worker and community health and safety issues Structural safety of project Infrastructure 	<ul style="list-style-type: none"> equitable sharing of benefits from the use of cultural heritage Support the development of surrounding rural area Comply with Mongolian Labour laws such as ILO Labour standards⁸, applicable collective agreements and international human rights conventions Comply with labour and occupational health and safety laws Avoid adverse impacts on the health and safety of affected community Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures
Non – metal Mining	Building material quarry	<ul style="list-style-type: none"> Excavating Crushing 	<ul style="list-style-type: none"> Land disturbance Dust, noise, emission and vibration issues, which contribute to air pollution and climate change Waste generation Natural resource depletion Loss of biodiversity and 	<ul style="list-style-type: none"> Rehabilitate land Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring Avoid or reduce energy and/or 	<ul style="list-style-type: none"> Loss of pastureland and water access; Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) Worker and community health and safety issues Structural safety of project Infrastructure 	<ul style="list-style-type: none"> Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost Comply with Mongolian Labour laws such as ILO Labour standards⁹, applicable collective agreements and international human rights conventions Comply with labour and occupational health and safety laws Avoid adverse impacts on the health and safety of affected community

⁸ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

⁹ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
			habitat disturbance	<p>water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro</p> <ul style="list-style-type: none"> • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include biodiversity off-setting and on-going monitoring) 		<ul style="list-style-type: none"> • Compensate land; drill boreholes for herders • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
	Fluorspar mining	<ul style="list-style-type: none"> • Blasting • Crushing • Screening • Concentration plant 	<ul style="list-style-type: none"> • Land disturbance • Dust, noise, emission and vibration issues, which contribute to air pollution and climate change • Natural resource and water depletion • Loss of biodiversity and habitat disturbance • Waste generation 	<ul style="list-style-type: none"> • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration • Avoid or reduce energy and/or water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include biodiversity off-setting and on-going monitoring) • Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring 	<ul style="list-style-type: none"> • Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums • Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) • Worker and community health and safety issues • Risk from informal artisanal mining community • Structural safety of project Infrastructure 	<ul style="list-style-type: none"> • Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage • Support the development of surrounding rural area • Comply with Mongolian Labour laws such as ILO Labour standards¹⁰, applicable collective agreements and international human rights conventions • Comply with labour and occupational health and safety laws • Avoid adverse impacts on the health and safety of affected community • Consult with Government organization and get state support • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures

¹⁰ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
Energy Resource Mining	Coal mining	<ul style="list-style-type: none"> • Blasting • Screening • Coal preparation plant 	<ul style="list-style-type: none"> • Soil, water pollution from chemical usage • Land disturbance • Dust, noise, emission (methane – greenhouse gas) and vibration issues, led to biodiversity degradation and pollution (Climate change) • Natural resource and water depletion • Loss of biodiversity and habitat disturbance • Waste generation 	<ul style="list-style-type: none"> • Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration • Avoid or reduce energy and/or water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include biodiversity off-setting and on-going monitoring) • Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring 	<ul style="list-style-type: none"> • Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss, including traditional lifestyle and culture • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums • Employment and labour issues • Worker and community health and safety issues • Risk from informal artisanal mining community • Structural safety of project Infrastructure 	<ul style="list-style-type: none"> • Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage • Support the development of surrounding rural area • Comply with Mongolian Labour laws such as ILO Labour standards¹¹, applicable collective agreements and international human rights conventions • Comply with labour and occupational health and safety laws • Avoid adverse impacts on the health and safety of affected community • Consult with Government organization and get state support • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures

¹¹ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
	Oil shale and Petroleum mining	<ul style="list-style-type: none"> • Drilling • Oil and Petroleum Extraction¹² 	<ul style="list-style-type: none"> • Soil, water pollution from chemical usage • Land disturbance • Dust, noise, emission and vibration issues, which contribute to air pollution and climate change • Natural resource and water depletion • Loss of biodiversity and habitat disturbance • Waste generation 	<ul style="list-style-type: none"> • Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration • Avoid or reduce energy and/or water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include biodiversity off-setting and on-going monitoring) • Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring 	<ul style="list-style-type: none"> • Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss including traditional lifestyle and culture • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums • Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) • Worker and community health and safety issues • Structural safety of project Infrastructure 	<ul style="list-style-type: none"> • Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage • Support the development of surrounding rural area • Comply with Mongolian Labour laws such as ILO Labour standards¹³, applicable collective agreements and international human rights conventions • Comply with labour and occupational health and safety laws • Avoid adverse impacts on the health and safety of affected community • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures

¹² IFC EHS Guidelines for Onshore Oil and Gas Development: <http://www.ifc.org/wps/wcm/connect/4504dd0048855253ab44fb6a6515bb18/Final%2B-%2BOnshore%2BOil%2Band%2BGas%2BDevelopment.pdf?MOD=AJPERES&id=1323153172270>

¹³ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Mining activity	Mining process	Key facility with major E&S hazards	Key Environmental Issues	Control	Key Social Issues	Control
	Uranium mining	<ul style="list-style-type: none"> • Drilling • Blasting • Leaching process • Leaching solution treatment plant 	<ul style="list-style-type: none"> • Soil, water pollution from chemical usage • Land disturbance • Dust, noise, emission and vibration issues, which contribute to air pollution and climate change • Natural resource and water depletion • Loss of biodiversity and habitat disturbance • Waste generation 	<ul style="list-style-type: none"> • Implement pollution controls such as a pollution prevention action plan (including regular water and soil quality monitoring and leakage control procedures) • Rehabilitate land • Avoid, minimize, and control adverse impacts to the environment (ecosystem and wild life) from emissions to air, noise and vibration • Avoid or reduce energy and/or water usage and implement water efficiency measures such as water recycling; use renewable energy sources such as wind, solar, hydro • Avoid reduction in biodiversity (e.g. implement a biodiversity action plan which could include biodiversity off-setting and on-going monitoring) • Avoid or minimize the generation of hazardous and non-hazardous waste materials and implement waste management controls, including proper disposal methods and on-going monitoring 	<ul style="list-style-type: none"> • Loss of pastureland and water access • Local community unrest • Natural and cultural heritage loss • Migration issues, related to the economical opportunities, led to negative effects on infrastructure, services, and utilities; environment of surrounding affected soums • Traditional lifestyle and culture loss • Human rights (e.g. breaches associated with working conditions and long work hours; informal employment contract) • Worker and community health and safety issues • Structural safety of project Infrastructure 	<ul style="list-style-type: none"> • Avoid, or minimize adverse social and economic impacts from land restrictions on land or water use by providing compensation for loss of assets at replacement cost • Avoid adverse impacts of projects on local communities or minimize and/or compensate for such impacts¹⁴ • Protect cultural heritage from the adverse impacts of project activities; support its preservation; promote the equitable sharing of benefits from the use of cultural heritage • Support the development of surrounding rural area • Comply with Mongolian Labour laws such as ILO Labour standard¹⁵, applicable collective agreements and international human rights conventions Comply with labour and occupational health and safety laws • Avoid adverse impacts on the health and safety of affected community • Implement life and fire safety master plan identifying major fire risks, applicable codes, standards and regulations, and mitigation measures

¹⁴ IFC Performance Standard 7: Indigenous people: http://www.ifc.org/wps/wcm/connect/1ee7038049a79139b845faa8c6a8312a/PS7_English_2012.pdf?MOD=AJPERES

¹⁵ <http://ilo.org/global/standards/subjects-covered-by-international-labour-standards/lang--en/index.htm>

Appendix 2: Relevant Mongolian E&S Laws for the Mining Sector

The following E&S laws and regulations are applicable when assessing mining sector client activities:

Laws:

Mongolian Law¹⁶ (mandatory):

- Constitution of Mongolia (1992)
- Civil Code of Mongolia (2002)
- Criminal Code of Mongolia (2002)
- Law on Licensing (2001)
- Labour Law (1999)
- Law on Social Security (1994)
- Law on Occupational Health and Safety (2008)
- Law on Hygiene (1998)
- Law on Cultural heritage protection (2001)
- Law on Environmental Protection (1995)
- Law on Environmental Impact Assessment (2012)
- Law on Air (2012)
- Law on Air pollution Fee (2010)
- Law on Water (2012)
- Law on Water Resource Pollution Fee (2012)
- Law on Subsoil (1988)
- Law on Land (2002)
- Law on Land Fee (1997)
- Law on Natural Resource Use Fee (2012)
- Law on Special Protected Area (1994)
- Law on Buffer Zone of Special Protected Area (1997)
- Law on Forest (2012)
- Law on Animals (2012)
- Law on Prohibition of Mining Operations at Headwaters of Rivers, Protected Zones of Water Reservoirs and Forested areas (2009)
- Law on Meteorology and Environmental Monitoring (1997)
- Law on Minerals (2006)
- Law on Soil Protection and Prevention from Desertification (2012)
- Law on Plant Protection (2007)
- Law on Toxic and Hazardous Chemicals (2006)
- Law on Waste (2012)
- Law on Natural Plants (1995)
- Law on Fire Safety (1999)

¹⁶ <http://www.legalinfo.mn/>

Appendix 3: Relevant Mongolian and International E&S Standards, Principles and other References for the Mining Sector

Mongolian Standards¹⁷ (mandatory):

- MNS Standards related to Environmental protection;
- MNS Standards related to Land disturbance and reclamation;
- MNS 4223 -1994 Explosives. Technical requirements;
- MNS Standards related to Air quality;
- MNS Standards related to Occupational Health and Safety;
- MNS Standards related to Radiation protection;
- MNS Standards related to Water quality and safety;
- MNS Standards related to Soil quality.

International Standards (voluntary):

ISO 14001¹⁸: Standard specifies the requirements for an E&S management system.

ISO 9000¹⁹: Quality management.

OHS18001²⁰: Occupational Health and Safety.

Leading Industry E&S Standards and Best Practice References

IFC Performance Standards²¹ (recommended)

PS 1: Assessment and management of E&S and social risks and impacts

PS 2: Labour and Working Conditions

PS 3: Resource efficiency and Pollution Prevention

PS 4: Community Health, Safety, and Security

PS 5: Land acquisition and involuntary resettlement

PS 6: Biodiversity Conservation and Sustainable management of living natural resources

PS 7: Indigenous Peoples

PS 8: Cultural Heritage

Interpretation Note on Financial Intermediaries²²

EBRD Performance Requirements²³ (voluntary): Required where EBRD is an investor (similar to IFC standards)

IFC/WB²⁴ Environmental, Health and Safety Guidelines²⁵ (recommended)

General EHS Guidelines (The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors. It should be used together with the relevant industry sector guideline(s).

- Mining
- Onshore Oil and Gas Development
- Construction Materials Extraction

Other Voluntary Principles:

- Principles for Managing Radiation, Health and Safety, Waste and the Environment²⁶
- The Voluntary Principles on Security and Human Rights²⁷

Mining-Specific International References (voluntary):

- Extractive Industry Transparency Initiative²⁸;

¹⁷ <http://estandard.mn/>

¹⁸ www.iso.org

¹⁹ http://www.iso.org/iso/home/standards/management-standards/iso_9000.htm

²⁰ <http://www.ohsas-18001-occupational-health-and-safety.com/>

²¹ www.ifc.org/performancestandards

²² http://www.ifc.org/wps/wcm/connect/38d1a68049ddf966af3cbfda80c2ddf3/InterpretationNote_FIs_2012.pdf?MOD=AJPERES

²³ <http://www.ebrd.com/environment/e-manual/e31ebrd-performance-requirements.html>

²⁴ www.ifc.org/ehsguidelines

²⁶ www.world-nuclear.org

²⁷ <http://www.voluntaryprinciples.org/>

²⁸ <http://english.eitimongolia.mn/home.shtml;jsessionid=6F4DBADB7E7E33F75A4B1F66A25F9BF4>

- International Atomic Energy Agency Safety standards²⁹ related to Mining
- International Cyanide Management Code³⁰
- International Council on Mining & Metals³¹ (ICMM)

²⁹ <http://www-ns.iaea.org/standards/documents/default.asp?s=11&l=90&sub=50&vw=4#sf>

³⁰ <http://www.cyanidecode.org/>

³¹ <http://www.icmm.com/>

Appendix 4: Relevant Mining Sector Stakeholders in Mongolia

The following mining sector stakeholders are relevant to the Mongolian Sustainable Finance Initiative and this Sector Guideline:

Representation	Organisation	Relevance
Government	Mineral Resource Agency of Mongolia (MRAM) ³² and Petroleum Authority of Mongolia (PAM) ³³	MRAM and PAM are responsible for issuing exploration and mining licences to mining companies.
	Ministry of Environment and Green Development (MEGD) ³⁴	The MEGD has responsibility for E&S conservation and appropriate use; water resources; biodiversity and E&S oversight and protection.
	General of Agency Specialised Inspection (GASI) ³⁵	GASI ensures the law implementation, creates the sustainable human, social development and favourable business environment and creates public health, safety condition and quality products and service within Mongolia.
Companies	Exploration company	Mining sector companies should demonstrate a commitment to follow relevant national and international E&S laws, standards and good practices.
	Metal & Mining company	
	Non-Metal Mining company	
Non-governmental organisations (NGOs) and civil society organisations (CSO)	NGOs and CSOs	NGOs and CSOs may play a role in pushing for sustainable development at the national level as well as bringing pressure against individual institutions or companies. They also may serve as advocates or implementation partners to reduce risk and promote good social and environmental practice.
	Local community	Local communities may be impacted by a Bank's client's activity. They may make grievances and/or seek protection against any negative impacts.
	Mining associations	A number of Mongolian mining associations increasingly support and participate in responsible mining development; they may also seek to shape government policy.
Financial Institutions	International Finance Corporation ³⁶	IFC seeks to provide equity and debt financing to private enterprises across all sectors in Mongolia and offers integrated products that combine financing with expert advice – maximising returns and social benefits, minimising E&S footprints, and contributing to Mongolia's long-term economic development.
	Mongolian Banker Association ³⁷	Main objectives of the Association: represent the common legal interests and rights of all Members in regards to Mongolian Sustainable Finance Principles; coordinate the joint activities of Members with regard to the issues and challenges facing the banking sector during the implementation of this initiative; facilitate the contribution of all Members in support of development of Banks' effective and sound E&S management system and other procedures.

³² <http://www.mram.gov.mn/>;

³³ <http://www.pam.gov.mn/>;

³⁴ <http://www.mne.mn/>

³⁵ <http://inspection.gov.mn/>

³⁶ http://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/home

³⁷ <http://mba.mn/>

Representation	Organisation	Relevance
	Bank of Mongolia ³⁸	BoM can potentially play a role in this initiative including seeking to: strengthen coordination with other regulators, establish and improve a long-term information sharing mechanism, improve information services, and provide banks with timely updates on relevant E&S risks. BoM may assess banks' performance on E&S through annually self-evaluation and its own monitoring system and use such results as important basis for regulatory rating, licensing, and incentive mechanisms.
	Mongolian Banks	Banks must develop and implement an overarching sustainability policy framework and an ESMS that includes E&S risk assessment procedures, monitoring, reporting and capacity building mechanisms.

³⁸ <http://www.mongolbank.mn/>