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# Mongolia: Choir-Sainshand Transmission Line

Environmental and Social Management and  
Monitoring Plan (ESMMP)

June 2021



# Notice

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## Client signoff

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# Acronyms and abbreviations

|        |   |
|--------|---|
| AC     | Alternating current   |
| A/m    | Amperes per metre   |
| AoI    | Area of Influence   |
| BSRDG  | Baganuur and South-Eastern Region Power Distribution Grid     |
| CES    | Central Energy System   |
| CHP    | Combined Heat and Power                                       |
| CRETG  | Central Regional Transmission Grid                            |
| CRKhs  | Citizens Representative Khurals                               |
| dB(A)  | A-weighted decibel  |
| DEIA   | Detailed Environmental Impact Assessment                      |
| DC     | Direct Current  |
| EBRD   | European Bank for Reconstruction and Development              |
| EIA    | Environmental Impact Assessment                               |
| ELVs   | Exposure limit values   |
| EMF    | Electromagnetic field   |
| ESIA   | Environmental and Social Impact Assessment                    |
| ESAP   | Environmental and Social Action Plan                          |
| ESMMP  | Environmental and Social Management and Monitoring Plan       |
| ESMS   | Environmental and Social Management System                    |
| ESP    | Environmental and Social Policy                               |
| EU     | European Union  |
| FS     | Feasibility Study   |
| GHG    | Greenhouse gas  |
| GHz    | Gigahertz   |
| GIP    | Good International Practice                                   |
| HGV    | Heavy Goods Vehicle   |
| Hz     | Hertz   |
| IBA    | Important Bird Area   |
| ICNIRP | International Commission on Non-Ionising Radiation Protection |
| ILO    | International Labour Organization                             |
| IRIM   | Independent Research Institute of Mongolia                    |
| JSC    | Joint Stock Company   |
| km     | kilometre   |
| kV     | Kilovolt  |
| LARF   | Land Acquisition and Resettlement Framework                   |
| LRP    | Livelihoods Restoration Plan                                  |
| mT     | millitesla  |
| μT     | microtesla  |
| masl   | Metres above sea level  |
| MET    | Ministry of Environment and Tourism                           |
| MVA    | Mega volt ampere  |

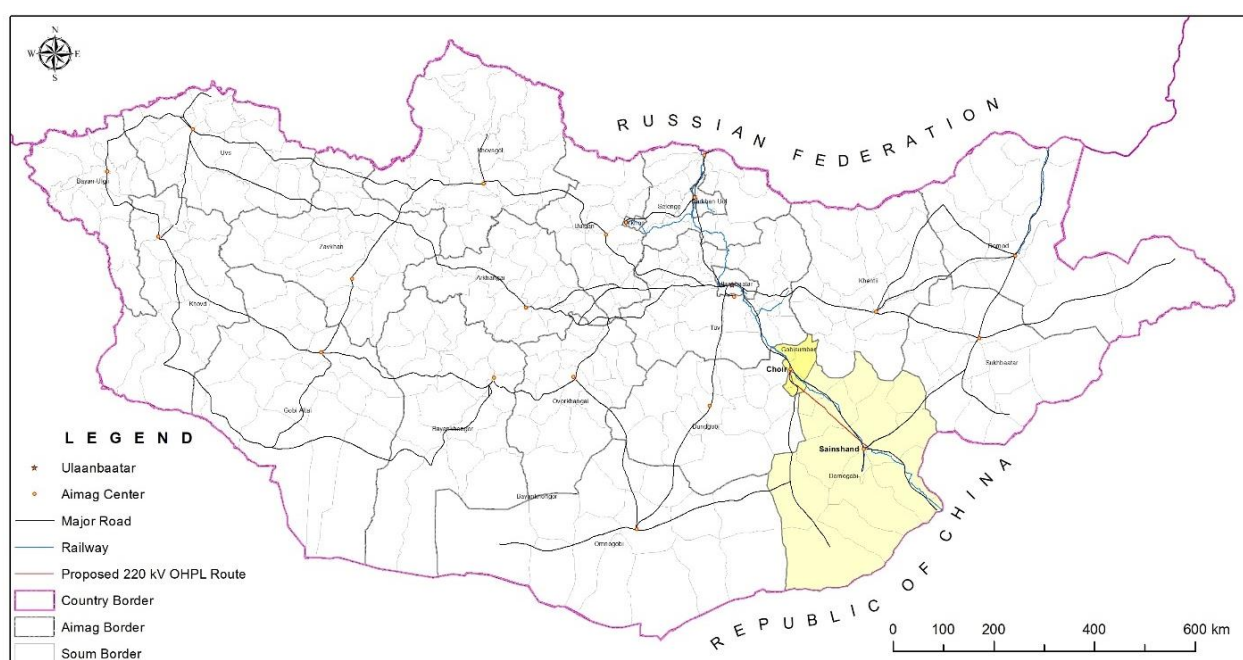
|       |  |
|-------|--|
| MW    | Megawatts  |
| NIR   | non-ionizing radiation                                 |
| NPTG  | National Power Transmission Grid                       |
| NTS   | Non-Technical Summary                                  |
| OECD  | Organisation for Economic Co-operation and Development |
| OHTL  | Overhead transmission line                             |
| O&M   | Operation and Maintenance                              |
| RAP   | Resettlement Action Plan                               |
| RCP   | representative concentration pathway                   |
| PRs   | Performance Requirements                               |
| PV    | Photovoltaic   |
| RoW   | Right of Way   |
| SEA   | Sustainability East Asia LLC                           |
| SEP   | Stakeholder Engagement Plan                            |
| UNFCC | United Nations Framework on Climate Change             |
| VRE   | Variable Renewable Energy                              |
| WHO   | World Health Organisation                              |

# 1. Introduction

## 1.1. Background

The European Bank for Reconstruction and Development (EBRD) is considering providing a sovereign loan to the Government of Mongolia to finance the construction of a 220.2 kilometre (km) double circuit 220 kilovolt (kV) overhead transmission line (OHTL) between Choir and Sainshand, construction of a new 220/110/35 kV substation in Sainshand and extension of 220 kV Choir substation (hereafter referred to as the Project).

The Project location is shown in Figure 1-1. It is proposed to start at an existing substation in Choir, in the main city of Govi-Sumber *aimag* (province). The OHTL will run from this substation in a south-east direction to finish at a new substation approximately 2.5 km north of the existing substation in the city of Sainshand, the capital of Dornogovi *aimag*.



**Figure 1-1. Project location**

The Ministry of Energy (MoE) will be the Client. The National Power Transmission Grid State Owned Joint Stock Company (the Company or NPTG), a state-owned power transmission utility, may act as the implementing entity and will operate the Project. A Project Implementation Unit (PIU) will likely be established either within the NPTG or the MoE to implement the Project.

The EBRD has categorised the Project as “A” in relation to its 2014 Environmental and Social Policy (ESP), which means that a comprehensive Environmental and Social Impact Assessment (ESIA) is required to determine the bankability of the Project.

The EBRD has commissioned WS Atkins International (Atkins), with their sub-consultants, Sustainability East Asia LLC (SEA) to undertake the ESIA and prepare the ESIA Disclosure Package to EBRD requirements.

This document presents the Environmental and Social Mitigation and Management Plan (ESMMP). The ESMMP forms one of several documents prepared to meet EBRD disclosure package, which also include the followings:

- Non-Technical Summary (NTS);
- Environmental and Social Impact Assessment (ESIA)
- Stakeholder Engagement Plan (SEP);
- Land Acquisition and Resettlement Framework (LARF); and
- Environmental and Social Action Plan (ESAP).



This ESMMP will be integral to the Project Environmental and Social Management System (ESMS) to identify and control environmental and social risks of the Project.

## 1.2. Objectives

The key objective of this ESMMP is to ensure compliance of the Project with the EBRD's 2014 ESP and Performance Requirements (PRs) and Mongolian environmental and social standards in managing identified environmental and social risks and impacts of the Project at each stage, i.e. during pre-construction, construction/post-construction handover and operation.

The specific objectives of the ESMMP are:

- To ensure that mitigation measures identified in the ESIA that need to be developed are set out for each stage of the Project;
- To set out measures for monitoring the environmental and social impacts of the project;
- To ensure that a Project ESMMP will be developed, adopted, and operated, according the EBRD PRs, the European Union (EU) Environmental Impact Assessment (EIA)<sup>1</sup> and relevant EU Directives, and the applicable Mongolian legislation and standards;
- To ensure that the roles and responsibilities in relation to the implementation of control, mitigation, and monitoring measures are identified; and
- To propose measures to ensure the compliance of the implementation of the Project ESMMP.

## 1.3. Scope

This ESMMP identifies:

- Necessary mitigation measures and management actions;
- Environmental monitoring requirements; and
- Auditing, monitoring and reporting procedures; and
- Roles and responsibilities in respect of management, monitoring and compliance.

It covers Project-related construction activities at Project sites, including construction camps, quarries and, if used, haul routes; and the operation of the Project.

This document should be read in conjunction with the ESIA, ESAP, SEP and the LARF; as well as the national Detailed EIA (DEIA) when available.

## 1.4. Intended Users

The aim of this ESMMP is to communicate the potential environmental and social issues associated with the Project, the mitigation measures, and monitoring requirements, that are required to be implemented during construction and operation of the Project.

The Client, with the support of the PIU, will update this ESMMP, to develop the Project ESMMP, prior to construction, to reflect the final design and the results of any additional survey work.

Before the construction starts, the Construction Contractor will develop a detailed Construction ESMMP based on the Project ESMMP, implementing environmental and social management during the construction phase of the Project. The requirements of the Construction ESMMP will be applicable to Project personnel, including the Construction Contractor, Subcontractors, and site visitors.

Before the end of the construction, at least three months before the operations will start, NPTG will develop the Operations and Maintenance (O&M) ESMMP, implementing the environmental and social management during the operations. The requirements of the O&M ESMMP will be applicable to all Project personnel, including the NPTG and O&M Contractors.

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<sup>1</sup> EU Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by 2014/52/EU (the EIA Directive).



## 1.5. Change Control

This ESMMP will be updated prior to construction to reflect final design and the results of additional survey work required pre-construction and will be called the Project ESMMP. This will include updating mitigation measures identified in this ESMMP to reflect any technical design changes. The Project ESMMP will form part of the tender documentation for Construction Contractor.

The Construction Contractor will be required to follow the Project ESMMP and prepare a detailed Construction ESMMP, for approval by the Client (the Construction ESMMP). The Construction ESMMP will include the results of pre-construction surveys and studies that have been identified as necessary. This may also include updating mitigation measures defined in this ESMMP due to survey work undertaken by the Contractor.

During construction, amendments may be required to the Construction ESMMP if any major changes occur to the Project's design, performance, environmental and social conditions or resulting from incidents or accidents. The process of Change Management will be the ultimate responsibility of the Construction Contractor and reviewed by the Client / PIU.

At least three months prior to the operation phase, the O&M ESMMP shall be finalised by the NPTG. This will be implemented by the NPTG and all O&M Contractors.

## 2. Organisational Structure

The broad role of each organisation involved in the Project is set out below; the detailed organisational structure for the Project delivery shall be developed once the ESIA Reports have been disclosed and once the Construction Contractor is appointed.

### 2.1. Lender

The EBRD is considering providing a sovereign loan to the Government of Mongolia to finance the construction of this Project. Responsibility for Project delivery will be with the Project Owner; however, reports will be required to be submitted to EBRD on the status of the ESAP, resolution of grievances and ESMS Project performance.

### 2.2. Project Owner

The MoE will be the Project Owner. They will have overall responsibility for the Project, including the construction phase and will assume overall responsibility for implementing the conditions of this ESMMP.

NPTG may be the implementing body and will operate the Project. During construction the Client will be responsible for ensuring that the Construction Contractor implements the Construction ESMMP; and the Client will be supported in this task by a PIU.

NPTG is a Governmental entity owned by the Ministry of Energy (70%) and the Government Agency for Policy Coordination on State Property (30%). NPTG operates within the Central Energy System (CES), which covers the electricity supply to 80% of the total territory of the country and 72% of the total population.

As the Project Operator, NPTG will be responsible for the operation of the Project. They will be responsible for developing and implementing the O&M ESMMP during operation.

### 2.3. Project Implementation Unit

A PIU will likely be set up to assist the Client in the delivery of the Project. The PIU will assist the Client through the management, implementation, and delivery of Project contracts in line with all applicable legislative and regulatory requirements.

Within the PIU, a person responsible for the Project ESMS will be appointed. This individual will be responsible for developing the ESMS, ensuring adequate training of the PIU staff and ensuring the Construction Contractor undertakes the works in compliance with the Project and Construction ESMMP.

The PIU will mainly focus on delivery of the ESMMP during construction, i.e. monitoring the effectiveness of Construction Contractor implementation of the ESMMP.

The PIU will undertake regular inspections and audits of the Construction Contractor to ensure compliance with the Project environmental and social mitigation measures.

### 2.4. Construction Contractor

A Construction Contractor will be selected and appointed for the construction of the Project. The Construction Contractor will be responsible for complying with all relevant national and international legislation and adhere to all mitigation measures specified in the Project ESMMP.

The Construction Contractor's organisation must have sufficient, adequate and competent resources available to fulfil the environmental and social requirements established in the Project ESMMP.

Prior to the commencement of construction works the Construction Contractor will be required to develop a detailed Construction ESMMP in accordance with the Project ESMMP.

During construction, the Construction Contractor will assume overall responsibility for implementation and monitoring of their Construction ESMMP (as well as wider contractual obligations). The Construction Contractor will be expected to undertake monitoring and inspections of their compliance with the Project ESMS.

The PIU will undertake regular inspections and audits of the Construction Contractor to ensure compliance with the Project environmental and social mitigation measures.

All Subcontractors must meet all requirements in relation to the Contractor discharge of their responsibilities in terms of ongoing management of potential environmental and social impacts of all contract activities.

## 2.5. Summary of Responsible Bodies

A summary of the relevant responsible bodies is summarised in **Table 2-1**.

**Table 2-1. Project Proponent and Project Organisations**

| Organisation                                  | Project Function   | Report to          |
|---|--|--------------------|
| <b>Ministry of Environment</b> (The Client)   | Loan beneficiary, responsible for developing and implementing the Project. Will update this ESMMP as the design develops.                        | Government<br>EBRD |
| NPTG  | Responsible for operation and maintenance activities. Will also develop and implement an O&M ESMMP.  | Government<br>EBRD |
| Local Provincial ( <i>aimag</i> ) governments | Support NPTG in all permanent and temporary acquisition of land for the Project. Liaise with local communities.                                  | The Client         |
| Regional Departments of various Ministries    | Project approval, issue of permits for various construction works.   | Ministries         |
| EBRD  | Potentially financing the construction of the Project.   | EBRD Board         |
| PIU   | General control of the project construction. Selection and control of contractor in accordance with contract conditions and schedule.            | EBRD, The Client   |
| Construction Contractor                       | Responsible for constructing the Project to tender specifications. Will prepare and implement a detailed Construction ESMMP during construction. | The Client, PIU    |
| Operation and maintenance (O&M) contractors   | Contractor for various O&M activities.   | NPTG               |
| Consultants                                   | Surveys and studies.   | The Client, EBRD   |

## 3. Environmental and Social Management System Structure

### 3.1. Introduction

The Project Environmental and Social Management System (ESMS) will provide a set of policies, procedures, tools and management plans to identify and control environmental and social risks of the Project. An overview of the ESMS and management plans required for this Project, throughout the pre-construction, construction and operation phases, is set out below and summarised in Figure 3-1.

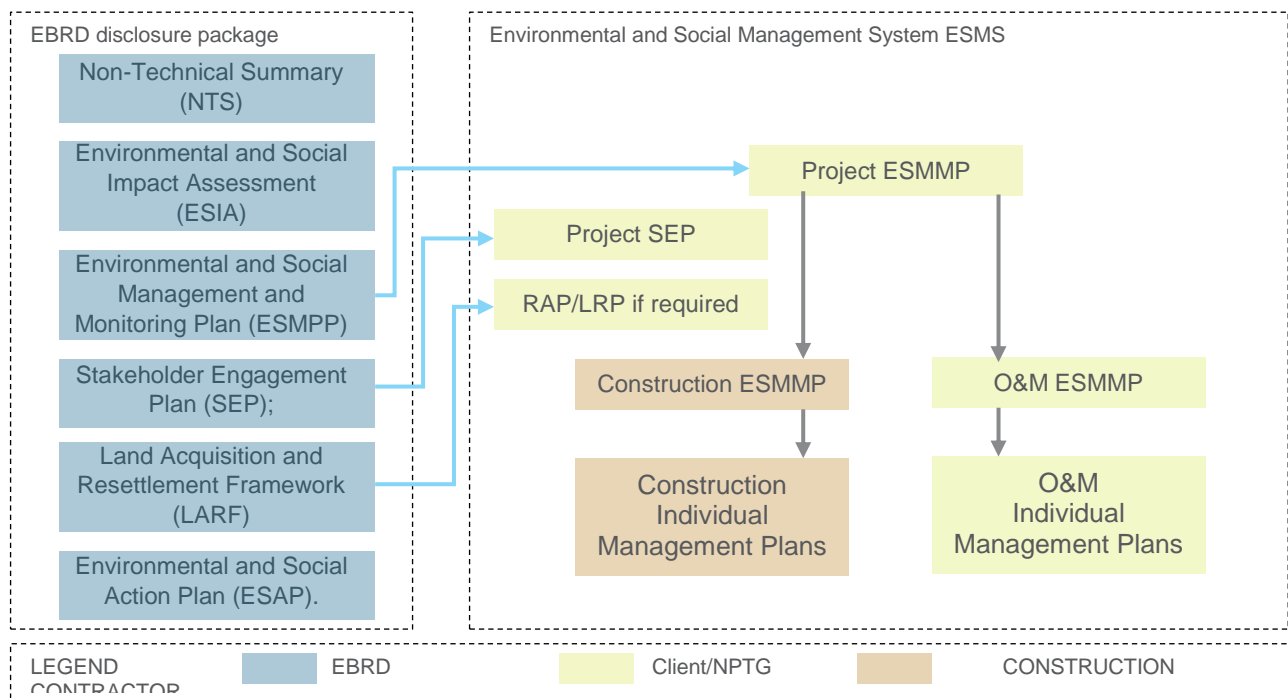


Figure 3-1. Simplified ESMS Structure

### 3.2. Environmental and Social Management System (ESMS)

An overarching Project ESMS will be developed by the NPTG for the management of the Project. The ESMS will include the following:

- Client Policies and procedures;
- Project ESMP;
- Legal and Permit Register;
- Project SEP;
- Line route survey report;
- Project Resettlement Action Plan (RAP) and/or Livelihoods Restoration Plan (LRP), if required;
- Client Roles and roles and responsibilities; and
- Project schedule/programme.

The policies to be covered include:

- Environmental and social policy;
- Human resources policy (covering labour and working conditions and community health and safety);
- Contractor/Supplier policy; and

- Project Code of Conduct.

### 3.3. Construction ESMMP

During construction, the Construction Contractor will be required to comply with all relevant Mongolian legislation and related standards as well as the measures set forth in the ESMS. The Construction Contractor will be required to undertake several pre-construction surveys, and to develop a detailed set of management plans forming a Construction ESMMP; that will follow and build on the requirements of the Project ESMS and Project ESMMP. The Construction ESMMP and associated documents will be to the approval of the PIU.

The implementation of the Construction ESMMP requirements during construction will be the responsibility of the Construction Contractor, monitored by the PIU.

The mitigation and management measures required to be implemented in the Construction ESMMP are presented in Section 0 of this document. The Monitoring Plan is set out in Section 8.

Post-construction/pre-handover, the Construction Contractor will also be responsible for delivering any post-construction measures to the approval of the PIU.

#### Pre-construction phase

Management plans and measures to be addressed during the pre-construction phase to be prepared by the Construction Contractor include:

- Updated Legal and Permit register;
- Construction SEP; and
- Archaeological and paleontological report.

#### Construction phase

The Construction Contractor will develop and adopt the Construction ESMMP, in compliance with the measures defined in Section 0 of this ESMMP, before the construction phase starts. The Construction ESMMP will include:

- Temporary land requirements
- Workers' Camp Management Plan
- Water Management Plan
- Materials use and Waste Management Plan (including quarries/borrow pits)
- Biodiversity Management Plan
- Emergency Preparedness and Response Plan
- Spill Prevention and Response Plan
- Traffic Management Plan
- Community Health and Safety Management Plan
- Labour Management Plan
- Occupational Health and Safety (OHS) Plan
- Cultural Heritage Management Plan and Chance Finds Procedure
- Soil Management and Site Rehabilitation Plan
- Air Quality, Noise and Vibration Management Plan
- Training Plan
- Construction SEP
- Security Management Plan
- Grievance Mechanism

Each of the above topic-specific management plans will contain:

- Roles and responsibilities

- General measures to be employed
- Site specific measures to be employed
- Inspection and monitoring requirements, including tools
- Inspections, audits and reporting
- Non-conformance and Accident/Incident procedures

#### Post-construction/pre-handover phase

A Reinstatement Plan will be prepared for the post-construction phase, prior to site handover, for adequate and effective rehabilitation of borrow pits and all land disturbed during construction.

#### 3.3.1. Operation and maintenance phase

The O&M ESMMP will contain the measures for implementing activities provided in this document for the operational phase of the Project. Prior to the start of operation, the NPTG shall prepare the O&M ESMMP. During operation, the NPTG and any of their O&M contractors will be required to comply with all relevant Mongolian legislation and related standards as well as the Project ESMS.

#### 3.3.2. Stakeholder Engagement Plan

A SEP has been prepared as part of the ESIA Disclosure Package. The SEP is a living document, so will be updated throughout the construction and operational phases of the Project.

During pre-construction and construction, the Client will manage the overall implementation of the stakeholder engagement process, including the development and adoption of a Project SEP, derived from the SEP part of the ESIA, to provide an overarching approach to engagement consistent across all Project organisations.

A Construction SEP will be developed by the Construction Contractor to define the measures required for the implementation of the Project SEP by the Construction Contractor.

During operation, the Project SEP implementation will be the responsibility of the Client.

#### 3.3.3. Land Acquisition and Resettlement Framework

A Land Acquisition and Resettlement Framework (LARF) has been prepared as part of the ESIA. The Client is responsible for the preparation of a RAP and/or LRP, as applicable to the final Project impacts, in accordance with the LARF.

The Construction Contractor will be responsible for ensuring that it has identified and secured all temporary land requirements (e.g. construction camps, borrow pits, haul roads, etc.) and obtained these sites through negotiated and voluntary transactions. Where this is not feasible, and involuntary displacement may occur, these sites should be notified to the Client so that they can be incorporated into the RAP/LRP.

## 4. Project Description

### 4.1. Introduction

This Chapter provides a description of the Project. It is primarily based on a Feasibility Study (FS) prepared by the Ministry of Energy in 2013<sup>2</sup> which looked at a wider transmission project, the Choir-Sainshand-Zamyn Uud transmission line and necessary substations, of which the proposed Project is a significant part; and updates from the technical review of the FS by the EBRD Technical Consultants, Mercados Aries International.<sup>3</sup>

### 4.2. Background

The Choir-Sainshand OHTL has been identified as the top priority project by the Ministry of Energy. The Project has been on the Government's Action Plan since 2008 and the approved State Policy on Energy for 2015-2030 has outlined the priority areas and strategic goals for Mongolian power sector that can be divided into three main groups aimed at improvement of efficiency, safety, and environment protection. Among the goals to be achieved are the following:

- Support innovation and advanced technology in energy sector, and implement conservation policy;
- Ensure energy safety and reliable supply;
- Develop mutually beneficial cooperation with regional countries; and
- Increase the production share of renewables and reduce negative environmental impact from traditional power generation and greenhouse gases.

The Policy envisages an increase of renewable energies share in generation up to 30% during 2024-2030. Rich in renewable energy resources, Mongolia has a viable alternative to coal-based power plants, which currently represent around 96% of the country's power generation pool. The role of a developed, stable and safe Transmission Grid in the achievement of these goals is crucial and the existing transmission network has to be updated in order to meet the challenges of the power sector modernization, as the Mongolian transmission network currently suffers from underinvestment with old and inefficient infrastructure and limited capacity to absorb additional power from new sources, especially Variable Renewable Energy (VRE) sources like Photovoltaic (PV) and Wind power plants.

### 4.3. Project Location

The location of the Project is shown in Figures 4-1 and 4-2. The Project starts at an existing substation in Choir (297069 E; 5134973 N), in the main city of Govi-Sumber *aimag* (province). The OHTL will run from this substation in a south-east direction to finish at a new 220/110/35 kV substation approximately 2.5 km north of the existing substation in the city of Sainshand (436771 E; 4975142 N), the capital of Dornogovi *aimag*.

In general, the OHTL route is sparsely populated and has vegetation characteristics of the Gobi Desert. The OHTL will run in the vicinity of the settlements of Sumber and Shiveegovi *soums* (districts) in Govi-Sumber *aimag* and Dalanjargalan, Airag, Saikhandulaan, Altanshiree and Sainshand *soums* in Dornogovi *aimag*.

The Trans-Mongolia railway runs between the cities of Choir and Sainshand to the east of the OHTL. There is an existing 110 kV OHTL which follows the road between Choir and Sainshand. There are also 35 kV distribution lines within the settlements along the road between Choir and Sainshand, and in Choir and Sainshand cities. Shivee-Ovoo coal mine, approximately 11 km to the east of the OHTL in Shivee-Govi *soum* in Govi-Sumber *aimag*, is one of the key coal suppliers to the central economic zone of Mongolia. The nearest national park is Choiriin Bogd Mountain, approximately 27 km to the northeast. Ikh Nart, also a national park and an Important Bird Area (IBA), is approximately 10 km southwest of the OHTL route, in Dalanjargalan *soum* of Dornogovi *aimag*.

<sup>2</sup> Ministry of Energy 2013. *Choir-Sainshand-Zamyn-Uud 220 kV Overhead Transmission Line Feasibility Study*.

<sup>3</sup> Mercados Aries International (22 May 2020), *Project Preparation Study for the Construction of the CHOIR-SAINSHAND Transmission Line, Mongolia – Inception Report*; and Mercados Aries International (30 September 2020), *Project Preparation Study for the Construction of the CHOIR-SAINSHAND Transmission Line, Mongolia – 2nd Interim Progress Report*





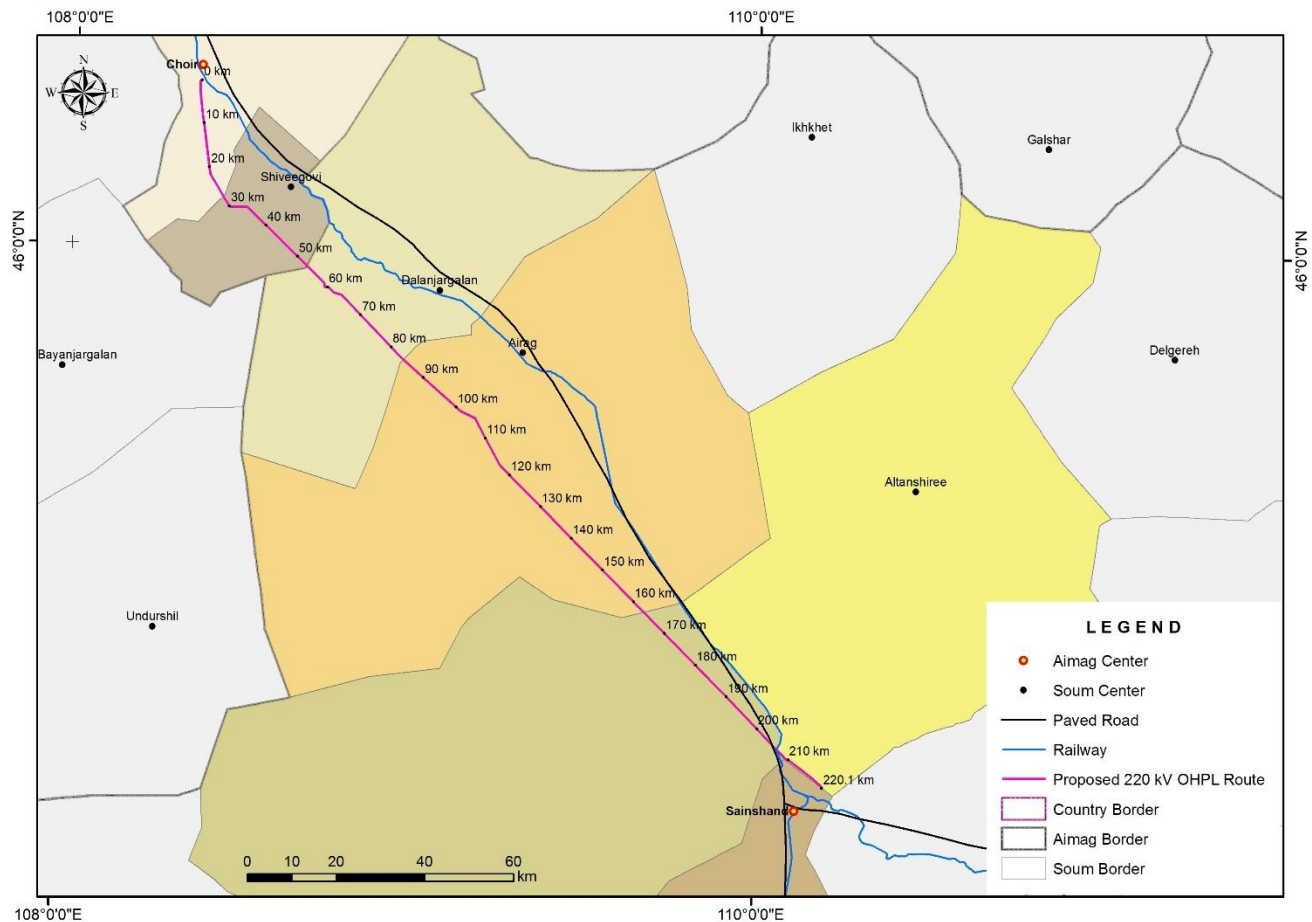


Figure 4-2. Transmission line route

## 4.4. Project Description

The Project comprises the following main components:

- Transmission line.** 220.2 km 220 kV double circuit overhead line will be constructed between the planned new substation in Sainshand and the existing substation in Choir. The OHTL will use LGJ-400/50 conductor wires and optical ground wire, OPGW-09A4 for lightning protection and system operation. This circuit will have no tee off connections at any point and will help to improve availability within Choir and Sainshand.
- Pylons.** The double circuit OHTL will be supported by a combination of twin steel poles in a portal formation with lattice towers where longer spans are required. It is planned that a total of 663 pylons will be used, using five different types of pylon (P220-2, Y220-2, Y220-2+5, Y220-2+9, Y220-2+14). The P220-2 intermediate poles and Y220-2 anchor poles will be predominantly used (Figure 4-3). Optimisation of the overhead line design, to be undertaken by the Construction Contractor, may identify other areas where lattice towers could be employed. The P220-2 and Y220-2 pylons foundations will have depths of 2.2 m and 3.2 m with corresponding widths of 12.2 m and 5.7 m, respectively (Figure 4-4).





- **Substations.** Extension of the existing substation in Choir. A new 220/110/35 kV substation will be built in Sainshand as part of the Project. The Sainshand substation characteristics and facilities are as follows<sup>4</sup>:
  - Two set of 220/110/35 kV autotransformers with 200 mega volt ampere (MVA) capacity;
  - 220 kV distribution equipment;
  - 110 kV distribution equipment;
  - 35 kV distribution equipment;
  - Transformer for internal use;
  - 0.4 kV distribution equipment;
  - Direct Current (DC) system;
  - Cables;
  - Lighting;
  - Lightning rod;
  - Control system;
  - Relay and automation system;
  - Security camera;
  - System for protecting natural disaster; and
  - Communications system.

A geotechnical field investigation performed in November 2013 indicates the existence of four different types of soil along the line route, which will define the types of foundations to be used in the Project. Conventional foundations are expected, however after the structure spotting is completed other types of foundations, such as piles foundations, could be considered necessary at some locations; this will be determined during the detailed design phase of the Project. Each tower will require four separate foundations for each “leg”.

The location of the planned substation in Sainshand is shown in Figure 4-5. The land for this substation has already been agreed with the Sainshand *soum* land authority.

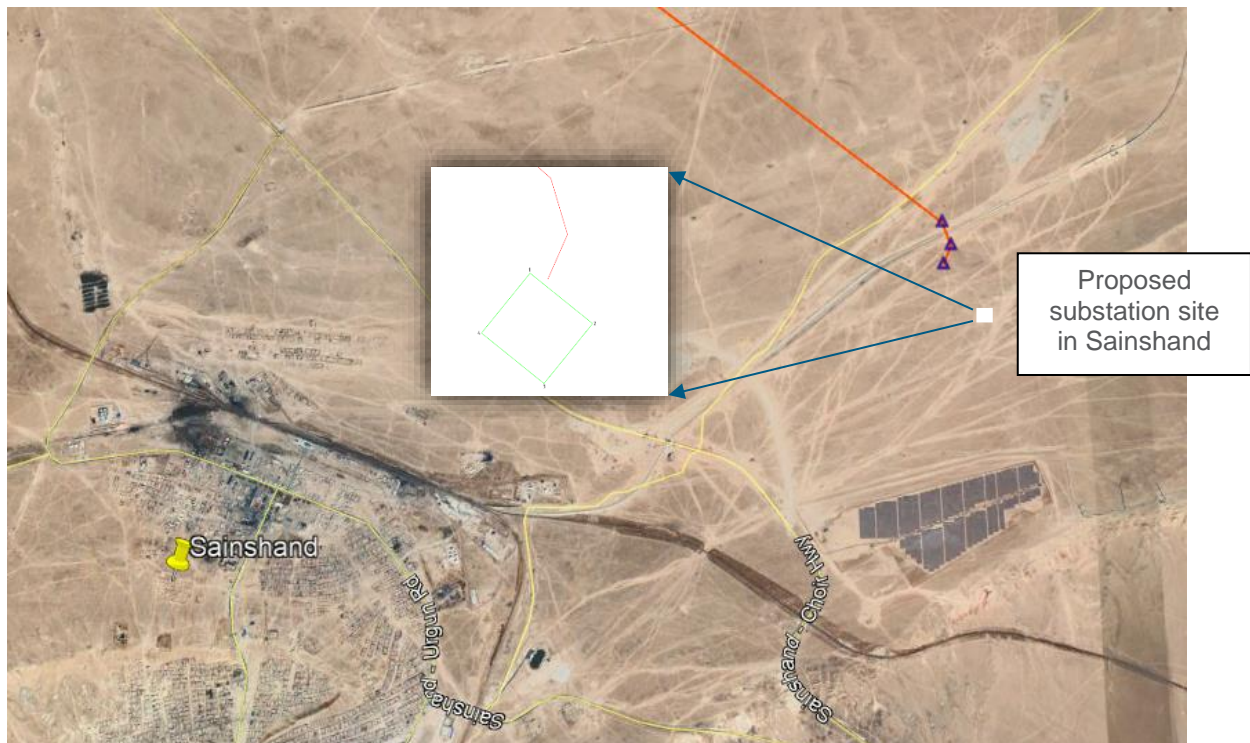


Figure 4-5. Location of Sainshand substation

<sup>4</sup> Ministry of Energy, 2013. *Choir-Sainshand-Zamyn-Uud 220 kV Overhead Transmission Line Feasibility Study*.

## 4.5. Establishment of the Right of Way

The Mongolian Law on Energy of 2001 (the Law of Energy) and Mongolian Government Resolution No. 97 of 18 March 2020, stipulates the establishment of protection zones or Right of Way (RoW) for transmission lines.

Articles 7.3 and 29.1.7 of the Law of Energy refer to the protection zone, and Article 33 (full article) is entitled "*Power transmission network protection zone*". The Energy Law does not specify the width of the ROW, however authorises governors of *aimags* and *soums* to set the RoW in accordance with safety rules for lines and determined RoW with by the Government resolution.

The Resolution sets out specific RoWs as provided in Table 4-1. The requirements for 220 kV lines are highlighted in yellow. Any activities that may interrupt energy transmission are prohibited within the RoW. This includes prohibition of infrastructure development within the RoW and any activities in the RoW area will require approval from the powerline owner.

No trees and any agricultural plantation are allowed within 25 m surrounding substations or any power distribution infrastructure. Owners of trees or shrubs planted or growing within the RoW shall be obliged to move or cut them, if the former may possibly cause damage to the network or obstruct inspection or maintenance of the powerlines.

**Table 4-1. RoW for transmission lines in Mongolia**

| Powerline, kV | Unpopulated areas               | Populated areas | Substation and distribution infrastructure | Forested areas and Parks        |
|---------------|---------------------------------|-----------------|--|---------------------------------|
|               | Both sides of the outer line, m |                 | Every direction, m                         | Both sides of the outer line, m |
| Up to 1 kV    |                                 | 1-1.5 m         |  |                                 |
| 1 – 20 kV     | 10 m                            | 2 m             | 10 m                                       | 2 m                             |
| 35 kV         | 15 m                            | 4 m             | 15 m                                       | 3 m                             |
| 110 kV        | 20 m                            | 5 m             | 20 m                                       | 3 m                             |
| 220 kV        | 25 m                            | 6 m             | 25 m                                       | 4 m                             |
| 330 -500 kV   | 30 m                            | 10 m            | 30 m                                       | 5 m                             |

## 4.6. Land Acquisition

As identified above, under law a RoW or protection zone can be set up by the NPTG. However, to secure this land, the NPTG must still obtain relevant letters from each *soum* and *aimag* to declare that the land has been provided for the Project.

All the *aimag* governments have allocated land for the Project and land permits to this effect have been issued. This includes the Sainshand *soum* land authority who have agreed to the location of the substation in Sainshand.

As of 2021, there are seven mining concession licences (for exploration and mining) along the route of the OHTL. The route has been adjusted since 2020 to avoid two of these sites (Eiku Sora, Modot uul). The route still passes across five sites; of these, agreements have been reached with four licence holders informing they have no objection to the OHTL passing through their license area (Kherlen golyn uils LLC, Batbadmaarag LLC, Mak tsement LLC, Olon ikht bayan LLC). With regard to the remaining licence area (held by Durvun talst erdene LLC), the licence expired on 31 July 2020 and the Ministry sent an official request to the Dornogovi Governor on 4 February 2021 requesting that the transmission line area be excluded from the exploration licence area on renewal. The Dornogovi Governor responded in a letter dated 19 February 2021 (Ref no. 1/208) that no mineral license will be granted along the OHTL route.

Within the OHTL route and RoW, there are no special needs areas or crops. There are also no residential structures within the OHTL and RoW, though there are some water wells and herder winter camps within a wider buffer zone of 6 km (3 km either side of the route centreline).

Within the new substation site and 25 m around both the existing and proposed new substation site, there are no buildings.

## 4.7. Proposed Programme

The start date for construction is not currently known, however, it is assumed that approximately 24 months for construction and will start in 2021.

## 4.8. Ancillary Facilities

During construction, access to all tower locations will be necessary to perform the civil works, structure erection and stringing of conductors and shield wires. These routes will be determined by the Construction Contractor; however, they will be obliged to use existing roads/tracks as much as possible to minimise the impact of the works. Where possible, the OHTL corridor will be used for haulage. Existing secondary roads will be used to access the route corridor, however it is likely that new roads will need to be built to support the traffic of Heavy Goods Vehicles (HGVs) to carry materials (structures, cable drums and others), equipment and personnel to site. These roads will be temporary and designed for light traffic.

The roads can be constructed as temporary (for construction phase only) or permanent roads (construction and operation phases). They would be such to permit double transmission loaded vehicles. Any temporary roads would be restored to the original condition after the end of the works; permanent roads would remain open until decommissioning.

In every case the construction of new access roads shall be avoided as much as possible. The use of existing roads and tracks is mandatory wherever possible. The Construction Contractor shall adapt the existing ones to the project needs and restore them to the initial condition or an improved one at the end of the works.

The requirement for and location of any borrow pits or quarries is not currently known and would be determined by the Construction Contractor.

During construction, the Construction Contractor will need to install site facilities to support the construction activities: Site Offices, storage areas, worker accommodation, parking areas, etc. Whilst this will be determined by the Construction Contractor and therefore details are not currently available, it is likely that this will comprise a main camp in an intermediate point of the line route. Secondary camp(s) may be installed within the two subsections. These secondary camps will be smaller and will be installed just during the period in which the close jobs are done. As an indicative number, one secondary camp per 100 km of route is a standard procedure, therefore a maximum of two or three camps are expected.

## 4.9. Project Phases

The Project phases are summarised in Table 4-2.

**Table 4-2. Project phases and activities**

| Project phase                         | Project activities  |
|---------------------------------------|---|
| <b>Pre-construction</b>               | <p>Line route and substation survey (detailed topographic and geotechnical survey) and design optimisation</p> <p>Preparation and submission of national EIA</p> <p>Establishment of a RoW and implementation of a Livelihoods Restoration Plan</p> <p>Clearing of access tracks - where possible, access to the site will be along the new RoW; however, it is likely that several temporary access tracks will be required along the route. Typical machinery required is a bulldozer.</p> <p>Vegetation clearance of the substation site</p>   |
| <b>Construction and commissioning</b> | <p>Establishment of site storage areas/compounds</p> <p>Transportation of equipment and workers to site</p> <p>Temporary power generation, if required</p> <p>Civil works and installation of substation</p> <p>Levelling and excavation of pole and tower foundations - topsoil will be stripped from areas of excavation prior to any further excavation which may be required. In most of the cases excavation will be mechanical, using excavators. Manual excavation will be performed where mechanical excavation is not possible. Concrete works will be undertaken following placement of the reinforced steel. The proposed pole/tower base areas will be levelled; where possible, backfilling will be undertaken using the excavated materials using hand tools, to level the site to design levels. Compaction works will be undertaken using small compacting machines due to the small dimensions of the compaction area.</p> <p>Erection of towers/poles - The towers/poles will have concrete footings with foundation depth of 2.2-3.2 m and widths of 12.2-5.7m or more depending on the nature of soils at the selected tower spots. The towers will be erected using small derricks, pulleys, winches and ropes or alternatively, if the site accessibility allows that, using mobile cranes.</p> |

| Project phase          | Project activities   |
|------------------------|--|
|                        | <p>Vegetation clearance of the RoW - prior to stringing works, the RoW will be cleared of trees and vegetation that might interfere with the construction of the line. Trees out of the ROW that might interfere with the line will be also cleared or trimmed. These works are undertaken using mechanical saws and light tools.</p> <p>Stringing of lines - once the towers/poles are erected, the conductors and shield wires will be strung and appropriately 'tensioned' to provide the minimum clearance between ground level and the wires. In most cases, conductors will be strung by manual labour and are performed by line sections. For each section, the stringing machine (tensioner and puller) should be positioned at the beginning and end of the section and conductor drums on supporters positioned at one of the ends.</p> <p>Waste management - the major waste stream will be the disposal of surplus spoil from the pylon sites. Other wastes will comprise general domestic waste including sanitary and food waste, organic material, small volumes of wastes arising from mobile plant, chiefly waste lubricating oil and packing materials.</p> <p>Testing and first operation of equipment - Once the poles/towers have been erected and the lines strung, tests and measurements will be carried out to ensure that the line performs as expected. Minimum distances such as clearance between the lines and the ground level shall be checked and the lines shall be 'tensioned' as per specifications.</p>   |
| <b>Operation</b>       | <p>Operation and maintenance of equipment based on accepted international standards and in accordance with national legislation and practices as set out by the Mongolian Ministry of Energy. The main activities to be carried out during the operation of the Project include: operation of the substations, surveillance of the condition of the overhead lines, towers and RoW; routine, planned and emergency maintenance and repairs; and vegetation control.</p> <p>Routine maintenance – to ensure the integrity and safety of the transmission line. This will include:</p> <ul style="list-style-type: none"> <li>– Foot patrol. Routine physical examination of the line and its component parts to ensure safety, security and integrity of the line.</li> <li>– Security patrol. To check on segments of the line close to populated areas for signs of vandalism, branches of trees interfering with lines, tampering, and general security of the lines. This should ensure early detection of and rapid response to acts of vandalism and to rectify such situations as promptly as possible; and</li> <li>– Pole/tower auditing and repairs. Annually 10% of all towers should be thoroughly examined. Detection and tightening of loose bolts on supports and hardware can reduce premature wear and indicate for replacement of worn components before failure.</li> </ul> <p>Planned maintenance - scheduled maintenance programmes that should be carried out on the overhead lines in accordance with manufacturer equipment specifications or due to the need to repair equipment. Some of the activities carried out under planned maintenance will include:</p> <ul style="list-style-type: none"> <li>– Replacement – insulation of sections of the overhead line;</li> <li>– Treatment of rust and re-painting of tower components;</li> <li>– Replacement of conventional bolts and nuts with anti-theft fasteners on older line sections;</li> <li>– Rehabilitation of access roads and tracks; and</li> <li>– Inspection and maintenance of switchgears, protection systems, etc.</li> </ul> <p>Emergency maintenance - activities relating to correction of unplanned events. This could include spectrum of minor faults (e.g. insulator failure) to major defects such as tower failures.</p> <p>Vegetation control and biodiversity (bird fatality) monitoring.</p> <p>Waste management.</p> |
| <b>Decommissioning</b> | Removal of equipment and structures.   |

The final position of the individual tower structures will be determined by the Construction Contractor, based on factors such as ground conditions, elevation, and distance between pylons. The Construction Contractor will need to undertake a detailed topographic and geotechnical survey of the ROW and substation sites to inform this micro-siting exercise.

Tower spotting will need to take place; this refers to the determination of individual sites for the installation of the pylons and will rely on the results of land acquisition surveys as set out in the LARF. Minor adjustments may be needed to account for local conditions including siting to avoid impacts on any assets; or where this is not possible, sited to minimise impacts.



Construction equipment that will likely be required on site may include:

- Excavators
- Bulldozers
- Dump trucks for transporting excavation soil, construction materials and equipment
- Cranes
- Forklifts
- Concrete mixers
- Trucks
- Scaffolding
- Compactors
- Mechanical saws
- Light tools

Construction raw materials will be influenced by the final design, however it can be assumed as a minimum raw materials will include: concrete for foundations; water; power supply; construction aggregate; and road materials. Concrete for foundations will either be provided via on-site small mixers (250 litres) or will be procured from batching plants available at a suitable distance – this will be determined by the Construction Contractor.

The main emissions during construction will be:

- Noise and vibration: from construction activities and movement of construction vehicles; and any concrete mixing/batching plant used; and
- Air emissions: exhaust emissions from onsite plant and construction traffic; dust and particulate matter may be generated by dust-raising activities on-site and the movement of HGVs on local roads; any concrete mixing/batching plant used.

The operation and maintenance of the OHTL and substation will be based on accepted international standards and in accordance with national legislation and practices as set out by the Ministry of Energy. The substation and line will be planned for operation on a 24 hour, 7 days a week basis. As identified in Table 4-2, maintenance will include routine, planned and emergency maintenance. Trees that could threaten the integrity of cables will be felled to prevent them from falling onto the overhead lines.

During operation, appropriate security fencing will be provided around the substation site. Gates will be manned by security guards and only authorised personnel will be permitted to enter. The substation will require periodic maintenance of the transformer equipment and of the site infrastructure, resulting in the generation of industrial waste including hazardous wastes such as used transformer oil. The day-to-day operation of substations will generate domestic waste and sewage and will require the supply of water and energy to the site.

The main emission during operation will be noise from the operation of the substation and, where thermal power is used, air emissions. Noise will be controlled by installing all the sound-producing equipment in sound-proof buildings. Air emissions will be controlled by ensuring that equipment used is to the latest standards and complies with national emissions standards, and ensuring that equipment, plant and vehicles used are maintained and running in good condition.

In terms of decommissioning of the Project in the future, since this would take place in excess of 30 years' time, it is not possible at present to identify with accuracy all decommissioning requirements. Ultimate responsibility for decommissioning will reside with the Client. In general management and mitigation during decommissioning will follow the same requirements as during construction. Before any closure and decommissioning activities are undertaken, a formal assessment of the requirements should be undertaken, based on the design at the point of decommissioning and potential issues which may arise at that time and will require management and mitigations. The potential issues and associated management and mitigation measures should be encompassed in a Decommissioning Plan, approved by the appropriate regulatory parties. Machinery, steel and dismantled materials would be recycled where possible and disposed of at licensed disposal sites.

## 5. Legislation

### 5.1. Introduction

The Project is subject to the environmental requirements of both EBRD and Mongolia. The policy, legal and institutional framework relevant to the Project, covering the EBRD requirements and the Mongolian administrative framework and national legislation, standards and guidelines are discussed in turn below.

### 5.2. EBRD Requirements

EBRD financed projects are expected to be designed, implemented and operated in accordance with the EBRD ESP (2014), which requires compliance with ten PRs, relevant EU standards, and national law.

#### 5.2.1. EBRD Environmental and Social Policy (2014)

The EBRD's ESP and related PRs guide the EBRD's commitment to promoting "*environmentally sound and sustainable development*" in the full range of its investment activities. The 2014 Policy<sup>5</sup> is relevant to this Project and aims to ensure that issues such as environmental and social sustainability, the rights of affected workers and communities and compliance with relevant regulatory requirements and good international practice are built in at every relevant stage of the project cycle.

#### 5.2.2. EBRD Performance Requirements

The Project must comply with the EBRD PRs. The PRs provide a solid base from which the sustainability of business operations can be delivered. Where possible, projects should avoid adverse impacts on workers, communities, and the environment. If avoidance is not possible, negative impacts should be reduced, mitigated or compensate for, as appropriate. The PRs identified as relevant to the Project are summarised in Table 5-1.

PR9 Financial Intermediaries is not relevant as it does not apply to this Project. PR7 is not considered relevant as there are no Indigenous Peoples in the Project Area, or indeed Mongolia.

**Table 5-1. Summary of EBRD Performance Requirements and their relevance to the Project**

| Performance Requirement  | Summary and Objectives  | Areas covered  | Relevance and compliance   |
|--|---|--|--|
| <b>PR1: Assessment and Management of Environmental and Social Impacts and Issues</b> | <p><u>Summary</u></p> <p>This PR applies to all projects directly financed by the EBRD and defines the importance of a systematic approach to the management of the environmental and social impacts associated with project activities and operations.</p> <p>The PR provides guidance on the client's responsibilities for managing and monitoring environment and social issues and how these will be assessed in relation to the Bank's Policy.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>• identify and evaluate environmental and social impacts and issues of the project</li> <li>• adopt a mitigation hierarchy approach to address adverse environmental or social impacts and issues to workers, affected communities, and the environment from project activities</li> <li>• promote improved environmental and social performance of clients through the effective use of management systems</li> <li>• develop an ESMS tailored to the nature of the project, for assessing and managing environmental and social issues and impacts in a manner consistent with relevant PRs.</li> </ul> | <p>ESIA</p> <p>Environmental and Social Management System (ESMS)</p> <p>Environmental and Social Policy</p> <p>Environmental and Social Management Plan</p> <p>Organisational capacity and commitment</p> <p>Supply chain management</p> <p>Project monitoring and reporting</p> | <p>The Project is a Category A and therefore an ESIA commensurate to the likely impacts and risks is required.</p> <p>The ESIA Report and associated documents have been prepared to meet the EBRD PRs, together with an ESAP identifying future actions required to ensure ongoing compliance with the PRs.</p> <p>A DEIA is being prepared alongside the ESIA.</p> <p>An ESMS will need to be set up for Project implementation.</p> <p>The Construction Contractor will be required to develop a detailed construction ESMMP.</p> |
| <b>PR2: Labour and Working Conditions</b>  | <p><u>Summary</u></p> <p>The EBRD required that projects comply, at minimum, with national labour, social security and occupational health and safety law, and the fundamental principles</p>   | <p>Management of worker relationships</p> <p>Human resources policies</p> <p>Working relationships</p>   | <p>This PR is mainly applicable to the construction phase of the Project, when additional</p>  |

<sup>5</sup> In 2019, an updated version of the 2014 ESP was approved by the EBRD Board of Directors on 25 April 2019. This applies to projects initiated after 1 January 2020 and therefore this Project is subject to the 2014 ESP.

| Performance Requirement  | Summary and Objectives  | Areas covered  | Relevance and compliance   |
|--|---|--|--|
|  | <p>and standards embodied in the International Labour Organisation (ILO) conventions.</p> <p>Throughout this PR, the terms 'workers' is used to refer to the employees of the client, including part-time, temporary, seasonal and migrant workers. The requirements should be articulated through appropriate policies, working conditions and equal opportunities.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>respect and protect the fundamental principles and rights of workers</li> <li>promote the decent work agenda, including fair treatment, non-discrimination and equal opportunities of workers</li> <li>establish, maintain and improve a sound worker-management relationship</li> <li>promote compliance with any collective agreements to which the client is a party, national labour and employment laws</li> <li>protect and promote the safety and health of workers, especially by promoting safe and healthy working conditions</li> <li>prevent the use of forced labour and child labour (as defined by the ILO) as it relates to project activities.</li> </ul> | <p>Child labour</p> <p>Forced labour</p> <p>Non-discrimination and equal opportunity</p> <p>Workers' organisations</p> <p>Wages, benefits and conditions of work</p> <p>Occupational health and safety</p> <p>Worker accommodation</p> <p>Retrenchment</p> <p>Grievance mechanism</p> <p>Non-employee workers</p> <p>Supply chain</p> <p>Security personnel requirements</p> | <p>suppliers and workers will be employed.</p> <p>It is also relevant to maintenance works in the O&amp;M phase.</p> <p>The number of workers likely to be employed for the Project is not currently known.</p> <p>Labour issues have been addressed as part of the ESIA, social impact assessment, and ESMMP.</p> <p>The ESMMP identifies the requirement for a Labour Management Plan and Labour Grievance Mechanism.</p> <p>Mongolian laws and regulations on employment and working conditions prohibit discrimination based on gender, age, physical ability, race, ethnical origins etc. Men and women are entitled for equal payment for the same job/work performed. The Labour Management Plan will need to comply with Mongolian and international requirements.</p> |
| <b>PR3: Resource Efficiency and Pollution Prevention and Control</b> | <p><u>Summary</u></p> <p>Projects must meet good international practice (GIP) with regard to resource efficiency and pollution prevention and control that are essential elements of environmental and social sustainability. The objectives of this PR are to identify project-related opportunities for energy, water and resource efficiency improvements and waste minimisation; to adopt the mitigation hierarchy approach; and to promote the reduction of project-related greenhouse gas emissions.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>identify project-related opportunities for energy, water and resource efficiency improvements and waste minimisation</li> <li>adopt the mitigation hierarchy approach to addressing adverse impacts on human health and the environment arising from the resource use and pollution released from the project</li> <li>promote the reduction of project-related greenhouse gas emissions</li> </ul>  | <p>Resource efficiency</p> <p>Pollution prevention and control</p> <p>Greenhouse gases</p> <p>Water</p> <p>Waste</p> <p>Safe use and management of hazardous substances and materials</p> <p>Pesticide use and management</p>  | <p>Construction works may give rise to pollution through, increased traffic, general construction practices, and construction wastes.</p> <p>Operation of high voltage lines may result in Electromagnetic field (EMF) risks.</p> <p>During operation, maintenance activities may also give rise to pollution risk and wastes.</p> <p>The ESIA assesses these risks and identifies mitigation measures for significant adverse effects. The ESMMP identifies measures for resource efficiency and pollution prevention to be implemented during the Project. The Construction Contractor will be required to prepare a detailed Construction ESMMP prior to construction.</p>  |
| <b>PR4: Health and Safety</b>  | <p><u>Summary</u></p> <p>This PR contains requirements for the client to take steps to identify and prevent accidents, injury and disease to workers and affected communities; to provide workers and affected communities with relevant information, guidance and training relating to health and safety hazards, risks, protective and preventive measures and emergency arrangements; and to</p>   | <p>General requirements for health and safety management</p> <p>Occupational health and safety</p> <p>Community health and safety</p>  | <p>The Project may give rise to adverse impacts on community health, safety and security during construction, for example, community health and safety impacts, including general construction impacts, electromagnetic</p>  |

| Performance Requirement  | Summary and Objectives  | Areas covered   | Relevance and compliance  |
|--|---|---|---|
|  | <p>investigate, document and analyse the findings and adopt the measures to prevent reoccurrence of accident, injury and diseases where any accident, injury and disease arises or occurs.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>protect and promote the safety and health of workers by ensuring safe and healthy working conditions and implementing a health and safety management system, appropriate to the relevant issues and risks associated with the project.</li> <li>anticipate, assess, and prevent or minimise adverse impacts on the health and safety of project-affected communities and consumers during the project life cycle from both routine and non-routine circumstances.</li> </ul>   | <p>Infrastructure, building and equipment design and safety</p> <p>Hazardous materials safety</p> <p>Product safety</p> <p>Services safety</p> <p>Traffic and road safety</p> <p>Natural hazards</p> <p>Exposure to disease</p> <p>Emergency preparedness and response</p>  | <p>fields and electrocutions, falling from heights.</p> <p>During operation, the Project will have a positive impact such as improved electricity supply including for small villages along the lines as well as the risk of EMFs.</p> <p>The ESIA and ESMMP set out the requirements for H&amp;S management. Contractor will be required to prepare a detailed Construction ESMMP prior to construction.</p>   |
| <b>PR5: Land Acquisition, Involuntary Resettlement and Economic Displacement</b> | <p><u>Summary</u></p> <p>This PR applies to physical or economic displacement, that can be full, partial, permanent, or temporary. The applicability of this PR to be determined during the environmental and social assessment process. Clients are encouraged to acquire land right through negotiated settlements even if they have the legal means to gain access to the land without the consent of the seller.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>avoid or, when unavoidable, minimise, involuntary resettlement by exploring alternative project designs</li> <li>mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons' use of and access to assets and land by: (i) providing compensation for loss of assets at replacement cost; and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected</li> <li>restore or, where possible, improve the livelihoods and standards of living of displaced persons to pre-displacement levels</li> <li>improve living conditions among physically displaced persons through the provision of adequate housing, including security of tenure at resettlement sites.</li> </ul> | <p>Avoid or minimise displacement</p> <p>Consultation</p> <p>Socio-economic assessment and census</p> <p>Compensation for displaced persons</p> <p>Grievance mechanism</p> <p>Resettlement and/or Livelihood Restoration Framework</p> <p>Monitoring</p> <p>Physical displacement</p> <p>Economic displacement</p> <p>Loss of public amenities</p> <p>Private sector responsibilities under government-managed resettlement</p> | <p>This PR is potentially applicable to the Project in relation to economic displacement, mainly in relation to temporary loss of access to land during construction and permanent loss of land during operation.</p> <p>No residential properties (winter camps) were identified during the June 2020 survey in the RoW. However, as herder households are transient, this will need to be surveyed in detail once the final route is selected.</p> <p>There are also water wells within the vicinity of the RoW. Currently it is not anticipated that temporary loss of access will result in livelihood impacts. However, the permanent footprint of the route will affect 8 mining licence areas and crosses two locally protected sites.</p> <p>A LARF has been prepared as part of this ESIA disclosure package. A survey of the final route RoW will be required and, where necessary, a RAP and/or LRP will need to be prepared and implemented by the Client. The Construction Contractor will need to select temporary construction sites based on negotiated and voluntary transactions wherever possible. Where this is not possible, the Client will need to assess the impact of the temporary displacement related to temporary Contractor sites as part of the RAP/LRP.</p> |
| <b>PR6: Biodiversity Conservation</b>  | <p><u>Summary</u></p> <p>This PR covers the conservation of biodiversity and sustainable management of living natural resources,</p>  | <u>Conservation of biodiversity</u>   | <p>There are two locally designated sites within the RoW and permanent</p>  |

| Performance Requirement                                       | Summary and Objectives  | Areas covered   | Relevance and compliance   |
|---|---|---|--|
| <b>and Sustainable Management of Living Natural Resources</b> | <p>and the balance with the potential for utilising the multiple economic, social and cultural values of biodiversity and living natural resources. It recognises the importance of maintaining core ecological functions of ecosystems and the biodiversity they support.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>Protect and conserve biodiversity using precautionary approach</li> <li>Adopt the mitigation hierarchy approach, with the aim of achieving no net loss of biodiversity, and where appropriate, a net gain of biodiversity</li> </ul> <p>Promote good international practice (GIP) in the sustainable management and use of living natural resources</p>  | <p>Biodiversity conservation requirements</p> <p>Legally protected and internationally recognised areas of biodiversity value</p> <p>Invasive alien species</p> <p>Sustainable management of living natural resources</p> <p>Crop and livestock production</p> <p>Fisheries and aquaculture</p> <p>Natural and plantation forestry</p> <p>Use of biomass fuel and biofuel production</p> <p>Supply chain</p> <p>Genetically Modified Organisms (GMOs)</p>                                 | <p>footprint of the Project.</p> <p>The nearest Important Bird Area (IBA) to the site is 10 km to the south west of the OHTL route. Several protected species of flora and fauna have been identified in the Project Area. These species could be affected by vegetation clearance and the permanent footprint of the Project, as well as operational impacts of the OHTL on birds that fly at the height of the line.</p> <p>Mitigation is proposed in the ESIA and ESMMP to minimise the potential impact on birds and habitats.</p> |
| <b>PR7: Indigenous Peoples</b>                                | <p><u>Summary</u></p> <p>Indigenous Peoples may be referred to in different countries by different terms. It is also recognised that the groups who might not be classified as Indigenous People in one country or region, may be classified as such in another.</p> <p>In the PR7 this term is used in a technical sense to refer to a social and cultural group, distinct from dominant groups within national societies. PR7 applies when a project is likely to affect Indigenous Peoples. Specific objectives of this PR include but not limited to enable Indigenous</p> <p>Peoples to benefit from projects in culturally appropriate manner, to recognise and respect the customary laws and customs of Indigenous Peoples and to take these into full consideration.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>to ensure that the transition process fosters full respect for the dignity, human rights, aspirations, cultures and natural resource-based livelihoods of Indigenous Peoples</li> <li>to both anticipate and avoid adverse impacts of projects on the lives and livelihoods of Indigenous Peoples' communities, or when avoidance is not feasible, to minimise, mitigate or compensate for such impacts</li> <li>to enable Indigenous Peoples to benefit from projects in a culturally appropriate manner</li> <li>to support the client to establish and maintain an ongoing relationship with the Indigenous Peoples affected by a project throughout the life of the project</li> <li>to foster good faith negotiation of the client with, and the informed participation of, Indigenous Peoples when projects are to be located on traditional or customary lands used by the Indigenous Peoples, when customary or non-traditional livelihoods will be affected by the project, or in the case of commercial exploitation of the Indigenous Peoples' cultural resources</li> <li>to recognise the principle, outlined in the UN Declaration on the Rights of Indigenous Peoples,<sup>3</sup> that the prior informed consent of affected Indigenous Peoples is required for the project-related activities identified in paragraphs 30-34 below, given the specific vulnerability of Indigenous Peoples to the adverse impacts of such projects<sup>4</sup></li> </ul> | <p>Assessment</p> <p>Avoidance of adverse effects</p> <p>Preparation of an Indigenous Peoples Development Plan</p> <p>Information disclosure, meaningful consultation and informed participation</p> <p>Grievance mechanism and prevention of ethnically based discrimination</p> <p>Compensation and benefit-sharing</p> <p>Impacts on traditional or customary lands under use</p> <p>Relocation of Indigenous Peoples from traditional or customary lands</p> <p>Cultural heritage</p> | <p>Not applicable, there are no indigenous peoples in the Project Area.</p>  |



| Performance Requirement  | Summary and Objectives   | Areas covered   | Relevance and compliance  |
|--|--|---|---|
|  | <ul style="list-style-type: none"> <li>to recognise the specific needs of men, women and children of Indigenous Peoples by addressing gender issues and mitigating potential disproportionate gender impacts of a project</li> <li>to recognise and respect the customary laws and customs of Indigenous Peoples and to take these into full consideration</li> <li>to respect and preserve the culture, knowledge and practices of Indigenous Peoples in accordance with their wishes.</li> </ul>   |   |   |
| <b>PR8: Cultural Heritage</b>                                  | <p><u>Summary</u></p> <p>This PR recognises the importance of cultural heritage for present and future generations. The aim is to protect cultural heritage and to guide clients in avoiding or mitigating adverse impacts on cultural heritage in the course of their business operations.</p> <p>PR8 covers both tangible and intangible cultural heritage. This PR is guided by applicable international conventions and other instruments.</p> <p><u>Objectives</u></p> <ul style="list-style-type: none"> <li>support the protection and conservation of cultural heritage</li> <li>adopt the mitigation hierarchy approach to protecting cultural heritage from adverse impacts arising from the project</li> <li>promote the equitable sharing of benefits from the use of cultural heritage in business activities</li> </ul>  | <p>Assessment process</p> <p>Screening for impacts on cultural heritage</p> <p>Avoiding impacts</p> <p>Assessing impacts that cannot be avoided</p> <p>Managing impacts on cultural heritage</p> <p>Chance finds procedure</p> <p>Consultation with affected communities and other stakeholders</p> <p>Project's use of cultural heritage</p> | <p>No direct impacts on known cultural heritage will occur as a result of the Project. However, there is a potential for unknown cultural heritage to be present in the project Area and therefore, the requirement for a Chance Finds Procedure has been identified and included in the ESMMP.</p> |
| <b>PR10: Information Disclosure and Stakeholder Engagement</b> | <p><u>Summary</u></p> <p>This PR identifies GIP relating to ongoing stakeholder engagement as an ongoing process which involves: (i) public disclosure of appropriate information; (ii) meaningful consultation with stakeholder; and (iii) an effective procedure or mechanism by which people can make comments or raise grievances.</p> <p><u>Objectives</u></p> <p>Outline a systematic approach to stakeholder engagement that will help clients build and maintain a constructive relationship with their stakeholders, in particular the directly affected communities</p> <ul style="list-style-type: none"> <li>promote improved environmental and social performance of clients through effective engagement with the project's stakeholders</li> <li>promote and provide means for adequate engagement with affected communities throughout the project cycle on issues that could potentially affect them and to ensure that meaningful environmental and social information is disclosed to the project's stakeholders</li> <li>ensure that grievances from affected communities and other stakeholders are responded to and managed appropriately</li> </ul> | <p>Engagement during project preparation</p> <p>Stakeholder identification</p> <p>Stakeholder Engagement Plan</p> <p>Information disclosure</p> <p>Meaningful consultation</p> <p>Disclosure and consultation on Category A projects</p> <p>Engagement during project implementation and external reporting</p> <p>Grievance mechanism</p>    | <p>The Project as a whole will be disclosed on the EBRD website for 120 days.</p> <p>The SEP identifies the requirements for stakeholder engagement prior to, during and following the construction phase.</p>  |

### 5.2.3. European Union Standards

The EBRD ESP requires the Project to meet all relevant EU substantive environmental standards. The key relevant EU Directives are set out below. The EBRD also observes the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and the Espoo Convention on Environmental Impact Assessment in a Transboundary Context. These conventions are also discussed below.

#### EU Directive 2011/92/EU Environmental Impact Assessment, amended in 2014 by Directive 2014/52/EU

The most relevant EU Directive in relation to the Project is *EU Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by 2014/52/EU (the EIA Directive)*. This Directive improves the level of environmental protection, with a view to making business decisions on public and private investments more sound, predictable and sustainable in the longer term. EIA is required for all projects in Annex I and for Annex II projects, national authorities have to decide whether an EIA

is needed. It also strengthens the need for effective public participation in decision-making, protection and promotion of cultural heritage and strengthen public access to information.

A review against the EIA Directive requirements has been undertaken, to assess whether the Project are listed in Annex I or II of the EIA Directive. The following is applicable in Annex I:

*“Construction of overhead electrical power lines with a voltage of 220 kV or more and a length of more than 15 km”. (Annex I, Article 4(1))”.*

It is considered that the Project falls under Annex I, which means that the Project should be subject to an EIA.

#### EU Directive 2009/147/EC on the Conservation of Wild Birds

The EU Directive on the conservation of wild birds (2009/147/EC), referred to as the Birds Directive, is relevant due to the presence of Ikh Nart, a national park and an Important Bird Area (IBA) within 10 km of the OHTL route. Article 1 applies the Directive to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies. It covers the protection, management and control of these species and lays down rules for their exploitation; and applies to birds, their eggs, nests and habitats. Article 5 requires the protection of nests and eggs and prohibits deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant having regard to the objectives of this Directive.

#### EU Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on Public Access to Environmental Information

The purpose of the Directive is to ensure that environmental information is systematically available and distributed to the public. The Directive requires Member States to ensure that public authorities are required to make the environmental information they hold available to any legal or natural person on request.

#### EU Framework Directive on Safety and Health at Work (89/391/EEC)

This Framework Directive lays down the main principles to encourage improvements in the safety and health of workers at work. It guarantees minimum safety and health requirements throughout Europe while Member States are allowed to maintain or establish more stringent measures.

#### EU Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (20th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) and repealing Directive 2004/40/EC (the EMF Framework Directive)

This Directive covers all known direct biophysical effects and other indirect effects caused by electromagnetic fields. The Directive currently only addresses short-term effects and does not concern possible long-term effects.

The employer shall eliminate or reduce to a minimum the risks that arise from EMFs at the workplace in line with the principles of the Framework Directive . If relevant action levels are and relevant exposure limit values may be exceeded, the employer shall implement an action plan in order to ensure that the latter is not exceeded. Certain derogations apply to limit values.

It requires that risks assessment of EMFs at the workplace (if necessary including measurements and calculations, if necessary) should be carried out in line with the Framework Directive . Assessment of occupational exposure is not required if evaluation for the general public has already been completed and if the specific equipment is intended for public use. The employer shall consider updating the risk assessment and the prevention measures if workers report transient symptoms in relation to their sensory/neural system.

#### EU Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on Energy Efficiency

The EU Directive on Energy Efficiency is not directly applicable, but some provisions are relevant. Particularly, Article 15 covers energy transformation, transmission and distribution. It requires an assessment of the energy efficiency potentials of electricity infrastructure, in particular regarding transmission, distribution, load management and interoperability, and connection to energy generating installations. Article 15 also requires identification of concrete measures and investment for the introduction of cost-effective energy efficiency improvements in the network infrastructure, with a timetable for their introduction.



### Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998 (Aarhus Convention)

The Aarhus Convention establishes a number of rights of the public (individuals and their associations) with regard to the environment. This Convention provides for:

- **Access to environmental information.** The right of everyone to receive environmental information that is held by public authorities. Applicants are entitled to obtain this information within one month of the request and without having to say why they require it. In addition, public authorities are obliged, under the Convention, to actively disseminate environmental information in their possession;
- **Public participation in environmental decision-making.** The right to participate in environmental decision-making. Arrangements are to be made by public authorities to enable the public affected and environmental non-governmental organisations to comment on, for example, proposals for projects affecting the environment, or plans and programmes relating to the environment. These comments to be taken into due account in decision-making, and information to be provided on the final decisions and the reasons for it;
- **Access to justice.** The right to review procedures to challenge public decisions that have been made without respecting the two aforementioned rights or environmental law in general.

### The Espoo Convention on Environmental Impact Assessment in a Transboundary Context, 1991

The Espoo (EIA) Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.

### The United Nations Convention on the Rights of the Child, 1990

According to the Article 32.1 the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development.

## 5.2.4. International Labour Organization (ILO) conventions

The EBRD PRs also requires the Project to meet the following International Labour Organization (ILO) conventions:

### C087 Convention on Freedom of Association and Protection of the Right to Organise, 1948

This is one of eight conventions that form the core of international labour law. Part 1 consists of ten articles which outline the rights of both worker and employers to join organisations of their own choosing without previous authorisation. Rights are also extended to the organizations themselves to draw up rules and constitutions, vote for officers, and organize administrative functions without interference from public authorities. Part 2 states that every ILO member undertakes to ensure "all necessary and appropriate measures to ensure that workers and employers may exercise freely the right to organise." Part 3 deals with technical matters related to the Convention. Part 4 also outlines provisions for denunciation of the Convention, including a ten-year cycle of obligation.

### C098 Convention on the Right to Organise and Collective Bargaining, 1949

Article 1 states that workers must be protected against discrimination for joining a union, particularly conditions of employers to not join a union, dismissal or any other prejudice for having union membership or engaging in union activities. Article 2 requires that both workers and employers' organisations (i.e. trade unions and business confederations) should not be interfered in their own establishment, functioning or administration. Article 2(2) prohibits, in particular, unions being dominated by employers through "financial or other means" (such as a union being given funding by an employer, or the employer influencing who the officials are). Article 3 requires each ILO member give effect to articles 1 and 2 through appropriate machinery, such as a government watchdog. Article 4 requires that the law promotes "the full development and utilisation of machinery for voluntary negotiation" between worker organisations and employer groups to regulation employment "by means of collective agreements." Article 5 states that national law can provide different laws for the police and armed forces, and the Convention does not affect laws that existed when an ILO member ratifies the Convention. Article 6 further gives an exemption for "the position of public servants engaged in the administration of the State".

### C029 Convention on Forced Labour, 1930 and its supplementing protocol P029, 2014

This Convention's objective is to suppress the use of forced labour in all its forms irrespective of the nature of the work or the sector of activity in which it may be performed. The Convention defines forced labour as "all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily", with few exceptions like compulsory military service.

### C100 Convention on Equal Remuneration, 1951

This Convention calls for equal pay for men and women for work of **equal** value. The Convention applies to basic wages or salaries and to any additional emoluments.

### C105 Convention concerning the Abolition of Forced Labour, 1957

This Convention cancels certain forms of forced labour still allowed under the Forced Labour Convention of 1930, such as punishment for strikes and as a punishment for holding certain political views. Each Member of the ILO which ratifies this Convention undertakes to suppress and not to make use of any form of forced or compulsory labour—

- a) as a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social or economic system;
- b) as a method of mobilising and using labour for purposes of economic development;
- c) as a means of labour discipline;
- d) as a punishment for having participated in strikes; and
- e) as a means of racial, social, national or religious discrimination.

### C111 Convention concerning Discrimination in Respect of Employment and Occupation, 1958

A fundamental convention relating to labour rights. With respect to this convention the term discrimination includes any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation.

### C138 Convention concerning Minimum Age for Admission to Employment (1973)

Countries are free to specify a minimum age for labour, with a minimum of 15 years. minimum age of 18 years is specified for work which "*is likely to jeopardise the health, safety or morals of young persons*".

### C182 Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour ("Worst Forms of Child Labour Convention"), 1999

By ratifying this Convention, a country commits itself to taking immediate action to prohibit and eliminate the worst forms of child labour. The term child shall apply to all persons under the age of 18. The worst forms of child labour include:

- All forms of slavery or practices similar to slavery;
- Commercial sexual exploitation of children;
- use, procuring or offering of a child by others for illegal activities; and
- Work, which by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

## 5.3. Mongolian Requirements

### 5.3.1. Institutional Framework

Mongolia is a parliamentary republic in which representatives of the State Great Khural (the national Parliament) are elected for 4 years by a direct popular vote. There are 76 seats in the State Great Khural, and presidential elections take place every 4 years. The 4<sup>th</sup> Constitution of Mongolia was adopted in 1992, which restructured the legislative branch of the government by creating a unicameral parliamentary legislature.

Governance of administrative and territorial units of Mongolia is organised by a combination of the principles of self-governance and central government. The self-governing bodies at the *aimag* (province), *soum* (district), and *bagh* (sub-district) levels are called Citizens Representative Khurals (CRKhs), or *hurals*. Representatives

of the CRKhs of *aimags*, the capital city, and soums are elected for a term of four years. The competencies of *soum* and district CRKhs include:

*“The right to discuss and make a decision on any economic, social and organisational matters other than those matters legally defined within the powers of the President, State Great Khural, Government, ministry and agency, CRKhs of higher level and other competent State authorities and officials” (MCRK 2019).*

The functions assigned to *aimag* and *soum* CRKhs include:

- Approving, reviewing, and evaluating the Governor’s activities;
- Monitoring and evaluating the Governor’s implementation of legislation and resolutions passed by the CRKh;
- Discussing, approving, and amending budgets; establishing and providing oversight of local development funds;
- Coordinating local socio-economic development strategies with regional strategies;
- Imposing fees and tariffs within the limits of the law;
- Approving land-use management plans and measures for environmental protection; and
- Exercising local property ownership rights.

The key institutions involved in policy making, managing and operating the energy sector at the national level according to the Energy Law as of 2001 are:

- **State Great Khural.** Mongolian Parliament which formulates state policy on energy;
- **Ministry of Energy.** The ministry is in charge of the development of policy, including the development of energy resources, energy use, import and export of energy, construction of power plants, transmission lines, energy conservation, use of renewable resources, regulation and international cooperation. It plays a key role in shaping the green development strategy for Mongolia.
- **Energy Regulatory Commission.** The body is in charge of issuing licenses, approving tariffs and protecting the rights of consumers and licensees.
- **The National Dispatching Centre.** The centre is responsible for coordinating daily system operation of all power and heat sector entities including real time coordination of power plant operation, transmission and distribution switching operation, and operation of the heat transmission network in coordination with combined heat and power operation. The NDC is also responsible for providing the information necessary for settlement of spot market transactions within the context of the wholesale electric power market.

In broad terms the responsibility for licensing is vested with the Ministry of Energy, and for price regulation with the Energy Regulatory Commission.

In addition, the institutions relevant to this Project are:

- **Central Energy System (CES).** The CES consists of five combined heat and power generation power plants, one transmission network and four distribution networks. It is one of five main energy systems in the electric power network of Mongolia.
- **National Power Transmission Grid State Owned Joint Stock Company (NPTG).** The NPTG owns and operates the 110 kV and 220 kV electricity transmission lines and substations within the CES region. The Company’s main business activity is to provide operational, maintenance, installation, performance testing and regime adjusting services for substations and electricity transmission lines and substations.
- **Baganuur and South-Eastern Region Power Distribution Grid (BSRDG).** BSRDG owns and operates power distribution lines within the south-eastern region of Mongolia.

### 5.3.2. National Energy Policies

The Government of Mongolia promulgated various environmental policies in the energy sector and the following are the main documents that form the base for legislative development:

- Mongolia State Policy on Energy 2015-2030
- National Program of Renewable Energy 2005-2020
- Mongolian Energy Sector Master Plan 2000-2020
- Mongolia’s Sustainable Energy Strategy 2002-2010

- National Program on Renewable Energy 2005
- Green Development Policy of 2014
- Mid-Term National Programme to Develop the State Policy on Energy 2018-2023
- Mongolian Integrated Power System program 2007-2040<sup>6</sup>
- National Development Policy of Mongolia based on the Millennium Development Objective 2008
- Centralized Energy System Program 2002

Governmental policy in energy sector is mainly implemented through the fundamental legal documents including the Energy Law (2001), Renewable Energy Law (2007), Centralized Energy System Program (2002), National Program on Renewable Energy (2005), National Development Policy of Mongolia based on the Millennium Development Objective (2008) and the Concession Law.

The State Policy on Energy 2015-2030 was approved by the Mongolian Parliament in 2015.<sup>7</sup> The Policy sets out the following strategic goals in the Governmental energy policy:

- Within the framework of ensuring the labour safety and operational security:
  - to ensure reliable energy supply and operational security;
  - to promote regional mutually beneficial cooperation in the energy sector; and
  - to improve workforce preparation system of the energy sector and strengthen its capacity.
- Within the framework of enhancing the efficiency of the energy sector:
  - to pursue policy on energy thrift and efficiency restoration;
  - to operate the energy sector relying on the principle of competitive market through increasing the private sector participation in the sector; and
  - to introduce innovative and advanced technology into the energy sector.
- Within the framework of environmental conservation:
  - to mitigate adverse environmental impacts and reduce the emission of greenhouse gas;
  - to increase the production of renewable energy; and
  - to promote new energy sources and environmentally-favourable technology.

### 5.3.3. National Environmental and Social Laws

Mongolia has enacted a comprehensive legal framework for environmental assessment and management which is comprised of policies, legislation and strategies. The hierarchy of policies and legislative provisions for environmental management in Mongolia comprises the Constitution, international treaties, and environment and resource protection laws. A fundamental principle of the Mongolian state environmental policy is that economic development must be in harmony with the extraction and utilization of natural resources and that air, water, and soil pollution is controlled.

The Government of Mongolia undertook a major environmental law reform in 1990 including the Law of Land, protected areas, water, forest, wildlife, and native flora resources and a further reform was undertaken in 2012.

All relevant environmental and social laws and regulations will be applied to the Project in Table 5-2.

**Table 5-2. Key Laws of Mongolia relating to transmission lines and environmental and social impacts**

| # | Name of the law                 | Year adopted | Year of amendment |
|---|---------------------------------|--------------|-------------------|
| 1 | The Constitution of Mongolia    | 1992         |                   |
| 2 | Law on Environmental Protection | 1995         | 2012              |
| 3 | Law on Land                     | 2002         | 2012              |
| 4 | Law on Sub-Soil                 | 1988         | 2015              |
| 5 | Law on Special Protected Areas  | 1994         | 2004              |
| 6 | Law on Fauna                    | 2000         | 2012              |
| 7 | Law on Natural Plants           | 1995         | 2015              |
| 8 | Law on Protection of Plants     | 1996         | 2007              |

<sup>6</sup> J. Janarbaatar, Senior Specialist of Policy and Planning Department, 2018. *Energy Sector of Mongolia, Country Report*. Available at: <https://eneken.iej.or.jp/data/8016.pdf>. Accessed March 2020.

<sup>7</sup> Ibid.

| #  | Name of the law  | Year adopted | Year of amendment |
|----|--|--------------|-------------------|
| 9  | Law on Water   | 1995         | 2012              |
| 10 | Law on Air   | 1995         | 2012              |
| 11 | Law on Environmental Impact Assessment   | 1998         | 2002, 2012        |
| 12 | Law on Waste   | 2003         | 2017              |
| 13 | Law on Toxic and Hazardous Chemicals   | 2006         | 2017              |
| 14 | Law on Protection of Cultural Heritage   | 2001         | 2016              |
| 15 | Law on Occupational Health and Safety  | 2008         | 2015              |
| 16 | Law on Social Insurance  | 1994         |                   |
| 17 | Law on Pensions Benefits provided by the Social Insurance Fund in Case of Industrial Accidents and Occupational Diseases | 1994         |                   |
| 18 | Law on Land Use Fee  | 1997         | 2019              |
| 19 | Civil Code   | 1994         | 2002              |
| 20 | Law on Allocation of Land to Mongolian Citizens for Ownership  | 2003         | 2005, 2008        |
| 21 | Energy Law   | 2001         | 2017              |
| 22 | Renewable Energy Law   | 2007         |                   |
| 23 | Law on Energy Conservation   | 2015         |                   |
| 24 | Law on Electricity, heat and coal tariff   | 1995         |                   |
| 25 | Government Resolution No. 97 on Rights of Way  | 2020         |                   |
| 26 | Law on Health  | 2011         |                   |
| 27 | Labour Code  | 1999         | 2012              |
| 28 | Law on Hygiene   | 2016         |                   |
| 29 | Law on minimum wage  | 2010         |                   |
| 30 | Mongolian Law on Licensing   | 2001         |                   |
| 31 | Law on Social Insurance  | 1994         |                   |
| 32 | Minister of Environment and Green Development, Ordinance A-117 (Inclusion of social impacts in DEIA)                     | 2014         |                   |
| 33 | Minister of Environment and Green Development, Ordinance A-03 (Public consultation procedure)                            | 2014         |                   |
| 34 | Law on Pastureland Management and Conservation   | 2019         |                   |

Source: ESIA Preparation Team

#### 5.3.3.1. Environmental Impact Assessment requirements

The EIA requirements of Mongolia are regulated by the Law on EIA (1998, amended 2002 and again in 2012) and the purpose of the EIA law is environmental protection, the prevention of ecological imbalance, the regulation of natural resource use, the assessment of environmental impacts of projects and procedures for decision-making regarding the implementation of projects. The terms of the law apply to all new projects, as well as rehabilitation and expansion of existing industrial, service or construction activities and projects that use natural resources. The Minister of Environment and Green Development, Ordinance A-117 of 2014 covers the need to include social impacts in the EIA using International best practices and International Finance Institution requirements/standards.

The type and size of the planned activity define responsibility as either Ministry of Environment and Tourism (MET) or *aimag* (provincial) government. A Detailed EIA (DEIA) is being prepared for this Project and will be submitted to the MET for approval.

#### 5.3.3.2. Key energy legislation

##### Energy Law (2001)

The primary statute to regulate energy generation, transmission, distribution, consumption and dispatching activities in Mongolia is the Energy Law, in force in 2001, amended in 2017.

The Energy Law provides the legal framework for the energy sector restructuring from being centrally planned to market-based. This Law introduced the independent energy regulator, the Energy Regulatory Authority, and vested powers and responsibilities to key institutions involved in managing and operating the energy sector. With the 2001 establishment of the Energy Regulatory Authority (Energy Regulatory Commission since 2012),



energy regulation has been in place for almost two decades. The Energy Law aimed to create competition and increase private participation and investment. It defines the roles of the Government, and State in the provision of energy, and defines the powers conferred to the *aimags* and *soums*.

The Energy Law fixes the power of the Energy Regulatory Commission to grant, extend, and repeal licenses for (not full list): electricity and/or heat generation; electricity transmission networks, defined as a network of high voltage power lines and substations of 110kV and higher generating main network for the transmission of electricity, as well as other power lines and substations that are connected to the network or technically and technologically required to be part of the network; and electricity distribution networks, defined as power lines and substations of 110 kV or less for distribution of electricity coming from substations of electricity transmission network to the consumer equipment. This law also defines the rules for the development and implementation of tariffs and pricing structures from the power facility.

#### [Mongolian Government resolution No. 120 of 1996 on the Regulation on the protection of power lines, amended by Government Resolution No. 263 of 2001](#)

The Resolution sets out specific RoW as provided in Section 2.7 in Chapter 2: Project Description.

#### [Law on Energy Conservation \(2015\)](#)

This Law regulates matters associated with efficient use of energy and its conservation. The main provisions of the Law include:

- Powers of central and local regulators on the energy conservation matters;
- Rights and obligations of energy users;
- Incentives of energy savings;
- Professional services for energy conservation measures; and
- Designation of Energy Manager position for those whose energy use exceeds Government allocated limit.

#### [Law on electricity, heat and coal tariff \(1995\)](#)

This law regulates mandatory payment by users for their electricity, heat energy, and coal supply services agreed by contractual obligations.

#### [Energy procedures](#)

Several procedures have also been developed and approved for regulating the energy sector, such as:

- Operational guidance for energy infrastructures and equipment. Approved by the Minister of Infrastructure Development. Order #125 of 06 June 2003.
- Procedure for energy infrastructures and equipment installation and operation. Approved by order of the Minister for Energy. Order #87 of 10 November 2005.
- Safety Guidance for electrical infrastructure operation. Approved by the Minister for Energy. Order #101 of 22 August 2014.

#### [5.3.3.3. Land, land use and expropriation](#)

##### [Mongolian Constitution, 1992](#)

Under the Mongolian Constitution, 1992 all land, except that given to the citizens of Mongolia for private ownership, subsoil, natural resources and water are the property of the State. The Constitution allows the State to grant ownership of land to Mongolian citizens, but they shall not transfer such land to foreign entities. Land may be leased to foreign entities.

##### [Law on Land \(in force on 1 January 2003; amended 2 May 2019\)](#)

This law regulates the 'ownership', 'possession' and 'use' of land. The following definitions are important in the context of the law:

- Land includes the surface of land and airspace above it.
- The 'ownership' of land means to have control over land and a right to dispose of it.
- The 'possession' of land means to have control over land in accordance with a contract that sets out the permitted use and other terms of possession.

- The 'use of land' means the right to right undertake legitimate and concrete activity on a land parcel to utilise some of the useful characteristics of the land in accordance with a contract granted by those who 'own' or 'possess' the land.
- A 'certificate of land use' means a certificate granting the right to use land to foreign legal entities.

Land must be monitored, protected, restored and used efficiently for its permitted use. Any activities that may cause damage to human health; nature and ecological balance; or national security are prohibited. Foreign countries, international organisations, legal entities and citizens may become users of land for a specific purpose and a specific time period subject to contract conditions and in compliance with the law.

According to Article 3 of the Law on Land there are three main categories of land rights, including ownership, possession, and usage:

- Article 3.1.2 establishes private ownership of land for Mongolian citizens without time limits (comparable to freehold). Land ownership rights can be granted on special terms to Mongolian citizens only, but not to legal entities. Land ownership rights can be transferred and sold only among Mongolian citizens based on an approval of the land authority. Furthermore, as provided under Article 6.2 of the Constitution of Mongolia, all lands, except those owned by Mongolian citizens, are owned by the State of Mongolia. Hence, Mongolian and foreign legal entities cannot own land.
- Article 3.1.3 defines 'to possess land' as being in legitimate control of the land in accordance with the purpose of its use and any terms and conditions specified in respective contracts (persons with this right can apply for the right of ownership). This regime is comparable to leasehold. In this case, the state retains ownership of the land. Possession may be limited in time (15 to 60 years), with possible extensions up to 40 years. Only Mongolian citizens and legal entities may possess land, and size limits apply for specific uses. Contracts for possession must be registered in the national registry. In accordance with the Land Law, the holder of a land possession right can allow a third-party to use the whole or part of the land held under its possession, transfer it to a third-party with approval of the local governor and only pledge the land possession right as security to Mongolian citizens and legal entities without foreign investment.
- Article 3.1.4 defines 'to use land' as to undertake a legitimate and concrete activity to make use of some of the land's characteristics in accordance with contracts made with owners or possessors of land. Land use rights can be given to Mongolian citizens or foreign nationals and foreign legal entities (i.e., companies with more than 25% ownership by foreign individuals or legal entities), for five years and are renewable for five years at a time. As provided under the Land Law, land use right cannot be transferred to any third-party or pledged as a security.

The Law of Mongolia on Land also addresses land use planning and expropriation.

The Ministry of Construction and Urban Development has the power to implement legislation and policy on land use and to determine land use classifications subject to government approval. CRKhs and Governors of aimags, the Capital City, soums and districts have powers to:

- Enforce land legislation and ratify general land MPs;
- Take land from citizens for the special needs of aimags, the capital city and soums on submission of such proposals by corresponding level governors; and
- Determine the size and boundaries of land to be taken from Citizens and approve the use of such land; and
- make decisions on granting compensation in respect of land taken.

Governors of aimags, the capital city, soums and districts have the following powers with respect to land issues:

- To enforce land use laws;
- To prepare land use MPs;
- To submit to Citizens' Representatives Khurals proposals regarding taking land for special needs, upon prior agreement with the possessor of the land and the governor of the corresponding level;
- To evict people from land if they cause significant land degradation; and
- To override land use decisions made by lower level governors if there is a legal ground.

Soum and District Governors have the power to grant rights to citizens to use and possess land in accordance with annual land MPs approved by CRKhs. CRKhs and Governors of *baghs* and *khoroos* have powers to regulate and protect common tenure land. Governors of *baghs* and *khoroos* have the powers to enforce land



use and land protection legislation including the implementation of decisions of higher-level authorities. A separate Law on Land Fees imposes fees on the possession and use of land (1 July 1997).

#### Law on Land Fee (in force on 1 July 1997 and amended on 2 May 2019)

This law regulates the relations concerning the imposition of fees for the possession and use of state-owned land for citizens, business entities and organizations as well as the payment of such fees to budget.

#### Law on Allocation of Land to Mongolian Citizens for Ownership, 2003

The purpose of this law is to govern the “...allocation of land to citizens for ownership and related relations arisen out of such allocation”. According to this law, land shall be allocated to citizens for the following purposes:

- For family needs;
- For agricultural purposes; or
- For other purposes.

#### Civil Code of Mongolia, 2002

The Civil Code of Mongolia (2002) is applicable to land acquisition by an entity, insofar as it regulates transactions and contracts.

Chapter 10 of the Civil Code defines property and assets, including land and other immovable property. Chapter 11 details provisions for their possession by legal acquisition and Chapter 12 for property ownership by individuals and other legal persons. The Civil Code in Article 101 provides general terms for the possession, use and disposal of property (further elaborated in Articles 109 to 112), but refers to the subsequently enacted Land Law and Land Allocation Law with regard to land ownership and possession. A number of special provisions pertaining to common property ownership (Article 108), common property of family members (Articles 126 and 128) and easements (servitude) (Article 151) may be applicable to specific cases in any particular project. Central to a negotiated agreement on transfer of land are the stipulations regarding contracts in Chapter 15.

#### Law on Pastureland Management and Conservation, 2019

This Law is currently subject to final approvals. The law is expected to regulate the relationship that protects pastureland soil and the user rights thereof. The draft law specifies pastureland classification (common pasture area, reserved pasture area, shared pasture area and contracted pasture area) criteria on pasture usage, agreement conditions, rights and duties, information rights of herders, government organisations’ mandates, and conflict resolution, among others. There are expected changes on current pasture management in the law that ensure livestock numbers are balanced with pastureland capacity, and that there is clear classification of pasture areas (State Great Khural 2019).

#### Customary Land Use

Customary “law” develops over time through accepted patterns of behaviour within societies that become accepted as law within such communities. Customary law is still used in Mongolia for the allocation of grazing rights between herder families and communities. Grazing rights may be acquired under customary law through the:

- Use of land for generations;
- Construction of animal shelters;
- Possession of a well close to grazing land; and
- Possession of cropland close to grazing land.
- Pasture use issues among communities are settled via consultation with neighbours.

Customary land use rights will need to be considered in the event of impacts on herder water supplies or resettlement of herders.

#### 5.3.3.4. Key employment and working conditions laws

#### Labour Code, 14 May 1999 (amended 13 December 2012)

The Labour Code sets out the rights and duties of employers and employees including collective agreement, collective bargaining, collective and individual labour disputes, labour conditions, terms and conditions of work, liabilities for breach of the legislation, and to ensure gender equality.

This law provides for the rights of employees to be provided with labour conditions that comply with health and safety laws and regulations; to receive payment for work done; to holiday; to freely assemble with other employees for the purpose of protecting the rights and legitimate interests including through representative organisations and collective agreements; to strike in certain circumstances; to receive a pension, an entitlement to social insurance and death in service benefits and to other benefits as may be provided in employment and collective agreements.

Additionally, the law prohibits discrimination in the workplace based on nationality, race, sex, social origin or status, wealth, religion, or ideology, but women are prevented from undertaking certain forms of work as set out in separate regulations. Women with children are protected from discrimination and are entitled to maternity leave. Parents with children under three years old may take childcare leave and employers must re-engage such employees on their return to work. Collective agreements may be concluded within professions or economic sectors and registered with the applicable regulator. The Labour arbitration court settles collective labour disputes and a court or commission settles individual labour disputes.

#### Law on Occupational Safety and Hygiene, 2008 (amended in 2015)

This law sets out provisions in relation to the rights of workers; rights and duties of employers; use of machinery and equipment; use of toxic chemicals, explosives, radioactive and biological substances; fire safety; medical examinations of workers; protective equipment; workers with disabilities; registration, handling and investigation of accidents and diseases; sanctions for non-compliance; and division of powers between different government bodies.

Employers are required to maintain safe and healthy working conditions. The law has detailed instructions for employers with regard to use of machinery and equipment, machineries for lifting, delivering and transporting as well as fire safety requirements. Employers are required to arrange free of cost preliminary and periodic medical check-ups (related to their work performance) for all workers.

Workers also have a right to work at safe and healthy workplaces, have medical insurance to cover industrial accidents, and suspend work in the face of imminent danger.

#### Law on Social Insurance (1994)

The purpose of this law is to define the types and forms of social insurance, and the scope of its effect, to determine the legal basis for payment of insurance premiums, formation of the social insurance fund and its administration, social insurance institutions and the activities of social insurance inspectors, and to regulate relations related to their implementation.

As prescribed by this law, employees are subject to mandatory social security withholdings. Social security contributions cover pension insurance, benefits insurance, health insurance, and unemployment insurance.

In addition to the abovementioned contributions, the employers also contribute industrial accidents or occupational diseases insurance.

#### Law on Pensions Benefits provided by the Social Insurance Fund in Case of Industrial Accidents and Occupational Diseases (1997)

Under the law, sick leave is compensated from the Government-run social insurance program, except for the first five days of the leave. Leave is provided as determined by the designated medical commission at the local hospital. The compensation rate is determined by the social security legislation and depends on the number of years the employee has worked. The first five days of the leave are to be paid by the employer. Employment of a worker is secure during the term of sick leave.

There is provision for benefits in the case of industrial accidents and occupational diseases if the accident occurred at workplace or in discharge of duties elsewhere, before or after work and on the way to and from work. The law provides the following benefits to the insured persons: Disability pension; Dependent's pension; Temporary disability benefit; and Rehabilitation costs.

### 5.3.4. Environmental Standards

Mongolian national standards applicable to the Project are listed in Table 5-3.

**Table 5-3. List of Mongolian national standards (MNS) applicable to the Project**

| # | Name of Mongolian National Standard (MNS)   |
|---|---|
| 1 | MNS 17.5.13. 1980. Environmental Protection: Rehabilitation of eroded land, terms and definitions |
| 2 | MNS 5914:2008. Environment. Land reclamation. Terms and definitions                               |

| #  | Name of Mongolian National Standard (MNS)  |
|----|--|
| 3  | MNS 5916:2008. Environment Requirements for fertile soil removing and its temporary storage during the earth excavation                              |
| 4  | MNS 5918:2008. Environment. Re-vegetation of destroyed land. General technical requirements  |
| 5  | MNS 4585:2016. Air quality. General technical requirements   |
| 6  | MNS 4991:2000. Occupational safety and health. Requirement for method of determination of toxic substances concentration in the air of working zone  |
| 7  | MNS 5885:2008. Acceptable concentration of air pollutant elements. General technical requirements  |
| 8  | MNS 6063:2010. Air quality. Acceptable concentration of pollutant elements for atmospheric air in public area  |
| 9  | MNS 5803:2007. Occupational safety and health. General requirements for lead content in workplace air and the workplace                              |
| 10 | MNS 4586:1998. Water quality. General requirements   |
| 11 | MNS 3342:1982. General requirement for preventing from groundwater pollution   |
| 12 | MNS ISO 5667-11:2000. Water quality. Sampling. Part 4: Guidance on sampling of groundwater   |
| 13 | MNS 6148:2010. Water quality. Maximum limit of substance contaminating the ground water  |
| 14 | MNS 4943:2015. Water quality. Effluent treated wastewater. General requirements  |
| 15 | MNS 6230:2010. Identification of wastewater discharge point. General requirements  |
| 16 | MNS 5924:2015. Pit latrine and sewage pit. Technical requirements  |
| 17 | MNS 3475:2003. Plant quarantine. Terms and definitions.  |
| 19 | MNS 5850:2008. Soil quality. Soil pollutants elements and substance  |
| 20 | MNS 3298:1991. Soil. General requirements for sampling   |
| 21 | MNS 2305:1994. Soil. Procedure for sampling, packaging, transportation and storage.  |
| 22 | MNS 5546:2005. General requirements for assessment of soil erosion and degradation of vegetation cover in pasture lands.                             |
| 23 | MNS 3297:1991. Environment protection. Soil. The norm for sanitary condition of soil in town and residential areas                                   |
| 24 | MNS 4643:1998. Occupational safety and operational security signs. Colour of safety signs.   |
| 25 | MNS 4994:2000. Occupational safety and health. Vibration. Requirement for general safety.  |
| 26 | MNS 4994:2000. General requirements for measuring vibration.   |
| 27 | MNS 5029:2011. Occupational safety and health. Label and marking of toxic and hazardous chemicals  |
| 28 | MNS 5079:2001. General safety requirements for loading and unloading.  |
| 29 | MNS 5105:2001. Occupational safety. Industrial hygiene. Hygiene protection areas norm, general requirements.   |
| 30 | MNS 5146:2002. Occupational safety. Industrial hygiene. Electric safety. Protective conductive earth, neutraling.                                    |
| 31 | MNS 5390:2004. Occupational safety and health. Fire safety of electricity. General requirements.   |
| 32 | MNS 4930:2000. Safety of machinery. General requirements.  |
| 33 | MNS 4969:2000. Organization of a training. Basic rules.  |
| 34 | MNS 4643:1998. Occupational safety. Color of safety signs.   |
| 35 | MNS 4994:2000. Occupational safety and health. Vibration. Requirement for general safety.  |
| 36 | MNS 0012.4.005:1985. Device and method for protection from noise.  |
| 37 | MNS 5003:2000. General requirements for the measurements of noise.   |
| 38 | MNS 5150:2002. Electric safety. General requirement.   |
| 39 | MNS 5145:2002. Electric safety. Maximum voltage and maximum level of current.  |
| 40 | MNS 5149:2002. Industrial hygiene. Power frequency electric fields. Permissible levels of field strength and requirements for control at workplaces. |
| 41 | MNS 5002:2000. Occupational safety and health. Noise. Requirements for general safety.   |
| 42 | MNS 4931:2000. Personal protective equipment. Types and general requirements.  |
| 43 | MNS 5388:2004. Hearing protection equipment (ear plug, earmuff). General technical requirements.   |

| #  | Name of Mongolian National Standard (MNS)   |
|----|---|
| 44 | MNS 5389:2004. Eye protection equipment-Goggles.  |
| 45 | MNS 5621:2006. Head protection equipment-Hard hat.  |
| 46 | MNS 5622:2011. Safety gloves. General requirements.   |
| 47 | MNS 5623:2006. Foot protection equipment. Safety boots.   |
| 48 | MNS 5344:2011. General requirements for transportation of domestic waste.   |
| 49 | MNS 5282:2003. Fire safety of petroleum products. General requirements.   |
| 50 | MNS 5566:2005. Protection against fire. Fire protection instrument for building. Technical requirements.                                    |
| 51 | MNS 4244:1994. Fire safety. General requirements.   |
| 52 | MNS 3629:1983. Petroleum, petroleum product. Packaging, labelling and transportation.   |
| 53 | MNS 4596:2014. Use of road signage, traffic light, protective bracket, and direction signs.   |
| 54 | MNS 5645:2006. Transportation of construction materials in pieces and bulk. Classification, transportation condition. General requirements. |
| 55 | MNS 6515:2015. Passages for wild ungulates altogether highways and railways in steppe and gobi areas. General requirements.                 |

Source: ESIA Preparation Team

### 5.3.5. National permits

Mongolian national permits for electricity generation and transmission are as follows:

- Construction of Energy Infrastructures
- Electricity Generation
- Electricity Transmission
- Dispatching
- Electricity Distribution
- Coordinated Electricity Provision
- Un-coordinated Electricity Provision
- Electricity Import and Export

### 5.3.6. International conventions

Mongolia has adopted a number of international conventions with regard to environment as shown in Table 5-4.

**Table 5-4. International environmental and social conventions signed by Mongolia**

| #                                | Convention   | Year of Accession |
|----------------------------------|--|-------------------|
| <b>Environmental Conventions</b> |  |                   |
| 1                                | Convention on Biological Diversity   | 1993              |
| 2                                | UN Framework Convention on Climate Change (UNFCCC)   | 1994              |
| 3                                | Kyoto Protocol   | 1999              |
| 4                                | UN Convention to Combat Desertification  | 1996              |
| 5                                | Convention on the Protection of Wetlands of International Importance especially as Waterfowl Habitat (Ramsar)                      | 1998              |
| 6                                | Vienna Convention for the Protection of the Ozone Layer  | 1996              |
| 7                                | Montreal Protocol (regulating substances that deplete the ozone layer)   | 1996              |
| 8                                | Convention on International Trade in Endangered Species of Fauna and Flora (CITES)   | 1996              |
| 9                                | Convention on the Transboundary Movement of Hazardous Waste (Basel)  | 1997              |
| 10                               | Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade | 2000              |
| 11                               | Stockholm Convention on Persistent Organic Pollutants  | 2004              |

| #                                    | Convention  | Year of Accession |
|--------------------------------------|---|-------------------|
| 12                                   | Convention on the Conservation of Migratory Species of Wild Animals   | 1999              |
| 13                                   | MoU concerning the Conservation of Migratory Birds of Prey in Africa and Eurasia  | 2008              |
| 14                                   | Paris Climate Accord  | 2016              |
| <b>Cultural Heritage Conventions</b> |   |                   |
| 15                                   | Convention for the protection of cultural property during armed conflict  | 1964              |
| 16                                   | World Heritage and Natural Heritage Convention  | 1990              |
| 17                                   | Convention on the prevention measures of illegal entry and release of cultural heritage, as well as prohibition of cultural heritage ownership transfer | 1991              |
| 18                                   | Convention on the Safeguarding of Intangible Cultural Heritage  | 2005              |
| 19                                   | Convention for the protection and promotion of the diversity of cultural expressions  | 2005              |

Source: ESIA Preparation Team

Although Mongolia is not a signatory, the EBRD also observes the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, the Espoo Convention on Environmental Impact Assessment in a Transboundary Context and the ILO conventions.

Mongolia has been a member of the ILO since 1968 and has ratified 20 ILO Conventions, of which 18 are in force, including all eight fundamental conventions, and one convention has been denounced. Ratified conventions are listed in Table 5-5.

**Table 5-5. ILO Conventions ratified by Mongolia**

| Convention Name  | Ratification date by Mongolia |
|--|-------------------------------|
| Freedom of association, collective bargaining, and industrial relations                          |                               |
| C087 – Freedom of Association and Protection of the Right to Organize Convention, 1948 (No.87)   | 03 June 1969                  |
| C098 – Right to Organize and Collective Bargaining Convention, 1949 (No.98)                      | 03 June 1969                  |
| C135 – Workers’ Representatives Convention, 1971 (No.135)  | 08 Oct 1996                   |
| Forced Labour  |                               |
| C029 – Forced Labour Convention, 1930 (No.29)  | 15 Mar 2005                   |
| C105 – Abolition of Forced Labour Convention   | 15 Mar 2005                   |
| Elimination of child labor and protection of children and young persons                          |                               |
| C123 – Minimum Age (Underground Work) Convention, 1965 (No.123) Minimum age specified: 18 years, | 03 Dec 1981                   |
| C138 – Minimum Age Convention, 1973 (No.138)   | 16 Dec 2002                   |
| C182 – Worst Forms of Child Labour Convention, 1999 (No.182)                                     | 26 Feb 2001                   |
| Equal opportunity and treatment  |                               |
| C100 – Equal Remuneration Convention, 1951 (No.100)  | 03 Jun 1969                   |
| C111 – Discrimination (Employment and Occupation) Convention, 1958 (No.111)                      | 03 Jun 1969                   |
| Employment policy and promotion  |                               |
| C088 – Employment Service Convention, 1948 (No.88)   | 17 Apr 2015                   |
| C122 – Employment Policy Convention, 1964 (No.122)   | 24 Nov 1976                   |
| C159 – Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No.159)     | 03 Feb 1998                   |
| C181 – Private Employment Agencies Convention, 1997 (No.181)                                     | 17 Apr 2015                   |
| Occupational safety and health   |                               |
| C155 – Occupational Health and Safety Convention, 1981 (No.155)                                  | 03 Feb 1998                   |
| C176 - Safety and Health in Mines Convention, 1995 (No.176)                                      | 26 Nov 2015                   |
| Maternity protection   |                               |
| C103 – Maternity Protection Convention, 1952 (No.103)  | 03 Jun 1969                   |



| Convention Name   | Ratification date by Mongolia |
|---|-------------------------------|
| Tripartite consultation   |                               |
| C144 – Tripartite Consultation (International Labour Standards) Convention, 1976 (No.144) | 10 Aug 1998                   |

Source: ILO

## 6. Summary of Environmental and Social Impacts and Risks

### 6.1. Construction Phase

A summary of environmental and social impacts and effects during the construction phase as identified in the ESIA is provided in Table 6-1.

**Table 6-1. Summary of environmental and social impacts and effects during the construction phase**

| Construction Activity / Sources of Impact  | Potentially Sensitive Receptors  | Potential Residual Effects  |
|--|--|---|
| <b>Soils</b>   |  |   |
| Removal of soils during earthworks<br>Clearance of vegetation (though minimal in the Aol, it still has a binding property)<br>Construction vehicle movements<br>Temporary access roads<br>Temporary land take for site storage/compounds and work camps, if required<br>Stockpiling<br>Use of machinery<br>Construction wastes and wastewater<br>Borrow sites and quarries, if used<br>Previously contaminated land  | Topsoil<br>Herder households and their livestock<br>Flora and fauna<br>Surface water bodies  | <b>Soil loss and quality deterioration</b><br>Minor Adverse<br>Land will be disturbed during the construction period, however the relative permanent land take (pylon and substation footprint) will be limited. Land take for camps and construction will be temporary and will be rehabilitated (e.g. borrow sites contoured). When construction is completed, it is intended that all topsoil will be reused and therefore not lost.<br><b>Compaction of soils</b><br>Minor Adverse<br>As above<br><b>Soil contamination</b><br>Minor Adverse<br>Impacts identified for the most part will be localised and are manageable through the implementation of best practice measures, particularly during the construction phase. Provided that the mitigation measures are implemented, it is expected that overall there will be minor adverse to negligible residual effects.<br><b>Rehabilitation of soils</b><br>Negligible to Positive<br>The rehabilitation of works should have a neutral (restoration to baseline conditions) to a positive effect (improvements over the baseline). |
| <b>Water Resources</b>   |  |   |
| Sources of potential groundwater impacts include: <ul style="list-style-type: none"> <li>Accidental damage to above ground well infrastructure</li> <li>Water demand for construction activities and workers</li> <li>Accidental release of contaminants</li> </ul> Sources of potential surface water impacts include: <ul style="list-style-type: none"> <li>Accidental release of contaminants</li> <li>Construction around dry river channel features</li> </ul> | Hydrology regime, including dry rivers and groundwater<br>Communities that use surface water and groundwater<br>Nomadic herder households and their livestock, who use surface waters and groundwater water for drinking/watering<br>Construction workers and camp residents | <b>Groundwater resources depletion and water demand</b><br>Minor to Moderate Adverse<br>It is assumed with permits in place and efficient use of water, water demand will be managed to acceptable levels however, there will still be a demand that needs to be met for construction purposes. With protection in place, there should be no impact on herders.<br><b>Ground water accessibility</b><br>Minor Adverse to Positive<br>Wells will be identified and protected. Any loss of wells to be relocated/replaced, in accordance with the LARF.<br>Potential increased herder accessibility to groundwater when any construction wells are and handed over.<br><b>Surface water hydrology</b><br>Negligible<br>With construction outside the surface water channels, impacts on hydrology are not anticipated.<br><b>Water resources pollution</b><br>Minor Adverse<br>With appropriate construction methods in place, spills should be avoided and, if they do occur, they should be   |

| Construction Activity / Sources of Impact   | Potentially Sensitive Receptors   | Potential Residual Effects  |
|---|---|---|
|   |   | <p>cleaned up quickly in accordance with the spill management plan.</p> <p><b>Flood Risk</b></p> <p>Minor Adverse</p> <p>With construction outside the surface water channels the risk of damage to construction infrastructure or health and safety from flooding is minimised.</p>  |
| <b>Air Quality and Climate</b>  |   |   |
| <p><b>Dust generating sources</b></p> <p>Excavations of foundations and earth moving activities</p> <p>Preparation and use of temporary haul roads</p> <p>Concrete batching plant</p> <p>Construction and worker vehicle movements</p> <p>Topsoil storage piles</p> <p>Rehabilitation of temporarily disturbed areas</p> <p><b>Gaseous emission sources</b></p> <p>Gaseous and GHG emissions from construction equipment/machinery</p> <p>Gaseous and GHG emissions from construction vehicle movements</p> | <p>Herder households who camp near the OHTL corridor or ancillary construction sites on a permanent or seasonal basis</p> <p>Flora and fauna, including livestock</p> <p>Communities and businesses living and working in Choir and Sainshand near the OHTL corridor/substation sites</p> | <p><b>Air quality / Dust</b></p> <p>Minor to Moderate Adverse</p> <p>Mitigation measures cannot fully control dust in an existing dusty and windy environment therefore dust is anticipated throughout the entire construction period.</p> <p><b>Air quality / Gaseous emissions and GHGs</b></p> <p>Minor Adverse</p> <p>With relevant mitigation measures in place and considering the short-term nature of the impact on receptors, it is concluded that gaseous emission on air quality will be low during construction.</p>  |
| <b>Noise and Vibration</b>  |   |   |
| <p>Construction equipment during site preparation</p> <p>Excavations e.g. for tower foundations</p> <p>Construction of the Sainshand Substation</p>   | <p>Herder households who camp near the OHTL corridor or ancillary construction sites on a permanent or seasonal basis</p> <p>Flora and fauna, including livestock</p> <p>Communities and businesses living and working in Choir and Sainshand near the OHTL corridor/substation sites</p> | <p><b>Noise and vibration disturbance</b></p> <p>Negligible (local communities along the Choir-Sainshand road and in Sainshand)</p> <p>No noise sensitive receptors sufficiently close to the works to generate significant noise impacts.</p> <p>Minor to Moderate Adverse (Herder households and local community/businesses near Choir substation)</p> <p>Noise will be generated during the construction period that could affect herder households within 50 m of construction works and local businesses/communities close to Choir substation. These impacts will be temporary and, with mitigation in place, likely Minor. However, taking a precautionary approach and the potential for noise impacts to be cumulative due to natural wind noise baseline, the impact is assessed as up to Moderate Adverse with mitigation for these noise sensitive receptors.</p> |
| <b>Traffic and Transport</b>  |   |   |
| <p>Movement of construction-related vehicles and equipment</p> <p>Creation of access roads</p>  | <p>Local communities along the main Choir-Sainshand road and local access roads to the substation sites</p> <p>Herder households (and their livestock) near access roads and the RoW where it is used as a haul road</p> <p>Road users</p>  | <p><b>Transport and accessibility</b></p> <p>Minor Adverse</p> <p>With the mitigation measures in place, no significant effects on traffic and transport are anticipated.</p>   |
| <b>Biodiversity, Flora and Fauna</b>  |   |   |

| Construction Activity / Sources of Impact   | Potentially Sensitive Receptors   | Potential Residual Effects   |
|---|---|--|
| <p><b>Flora</b></p> <p>Increased movement of people and materials along the RoW and access roads</p> <p>Establishment and use of camp and associated facilities</p> <p>Clearance of vegetation along the RoW</p> <p>Tower foundation earthworks and substation construction</p> <p>Use of heavy machinery and equipment for construction</p> <p>Use of quarries and borrow pit</p> <p>Accidental spillage of contaminants</p> <p>Introduction of invasive species</p> <p>Indirect dust impacts arising from earth works at the pylons and vehicle movement</p> <p><b>Fauna</b></p> <p>Increased movement of people and materials along the RoW and access roads</p> <p>Increased presence of humans i.e. construction workers and temporary construction camps</p> <p>Presence of the construction sites;</p> <p>Use of heavy machinery and equipment for construction</p> <p>Temporary and permanent vegetation clearance for camp establishment, OHTL construction, earthworks and potential borrow pits and quarries</p> | <p><b>Flora</b></p> <p>Shardalan (<i>Tugarinovia mongolica</i>) Mongolian Red List 'Vulnerable' and 'Very rare' category species by Mongolian regulatory designation.</p> <p>Desert living cistanche (<i>Cistanche deserticola</i>). Mongolian Red List 'Endangered' and "very rare" category species by the Mongolian regulatory designation.</p> <p>All other plant species are considered to have low receptor sensitivity due to their conservation status and existing land use disturbance.</p> <p><b>Mammals</b></p> <p>Goitered gazelle (<i>Gazella subgutturosa</i>). Both IUCN and Mongolian Red List 'Vulnerable' category species</p> <p>Mongolian gazelle (<i>Procapra gutturosa</i>). Mongolian Red List 'Endangered' category species</p> <p>Argali (<i>Ovis ammon</i>). Mongolian Red List 'Endangered' category species</p> <p>Siberian ibex (<i>Capra Sibirica</i>). Mongolian regulatory designated 'Rare' mammal</p> <p><b>Birds</b></p> <p>Swan goose (<i>Anser cygnoid</i>). IUCN Red List 'Vulnerable' category species</p> <p>Great bustard (<i>Otis tarda</i>). IUCN Red List 'Vulnerable' category species</p> <p>Steppe eagle (<i>Aquila nipalensis</i>). IUCN Red List 'Endangered' category species</p> <p>Saker falcon (<i>Falco cherrug</i>). IUCN listed 'Endangered' and Mongolian Red List 'Vulnerable' category species</p> <p>Cinereous vulture (<i>Aegypius monachus</i>). IUCN Red List 'Near-threatened' category species; prone to OHTL collision and electrocution and present in high numbers</p> <p>Tree pipit (<i>Anthus trivialis</i>). Mongolian regulatory designated 'Rare' bird</p> <p>Pallas's sandgrouse (<i>Syrrhaptes paradoxus</i>). Most common and vulnerable species to OHTL collision in the Project Area</p> <p>Oriental plovers (<i>Charadius veredus</i>). Species of socio-economic value. Prone to OHTL collision</p> <p>All other nesting species</p> | <p><b>Flora</b></p> <p><b>Direct loss and disturbance</b></p> <p>Minor Adverse</p> <p>With mitigation in place, the siting of any temporary facilities can be such to avoid adverse effects on vegetation species. However, clearance of the RoW will still occur and it is possible that final tower foundations could impact the two identified sensitive flora species.</p> <p><b>Indirect loss through increased dust deposition on plants</b></p> <p>Minor Adverse</p> <p>With mitigation in place, dust impacts are considered Minor as a direct result of the Project.</p> <p><b>Direct impact through increased harvesting of the species by project personnel</b></p> <p>Negligible</p> <p>With mitigation in place, it is anticipated that Project personnel will not harvest local species.</p> <p><b>Contamination of soil by accidental spillage</b></p> <p>Minor Adverse</p> <p>With mitigation in place, there remains a low risk of contamination which, if it occurred, could result in an adverse effect on identified sensitive species.</p> <p><b>Mammals</b></p> <p><b>Direct impact - Vehicle collision</b></p> <p>Negligible to Minor Adverse</p> <p>With the mitigation measures proposed, it is considered that the overall effect can be reduced to Minor Adverse due to the low numbers of such species and the existing presence of the road and other barriers (the railway).</p> <p><b>Indirect impacts - Habitat avoidance and increased hunting pressure</b></p> <p>Negligible</p> <p><b>Bird mitigation</b></p> <p>Negligible to Minor Adverse</p> <p>Construction workers will be required to work in designated areas only. Visits to hotpots and other areas with high bird activity will be prohibited by construction staff during construction and therefore overall, it is considered that impacts on birds and their key habitats during construction will be mitigated to Minor Adverse.</p> |
| <b>Material and Waste Management</b>  |   |  |
| Earthworks including excavating, site clearance and land levelling  | Construction workers  | <p><b>Materials Use</b></p> <p>Minor Adverse</p>   |

| Construction Activity / Sources of Impact  | Potentially Sensitive Receptors   | Potential Residual Effects  |
|--|---|---|
| <p>Construction works, including construction equipment repair and maintenance</p> <p>Workers' accommodation camp</p> <p>Borrow pits and quarries</p>  | <p>Project and third-party materials and waste facilities</p> <p>Local communities close to potential borrow pits and quarries</p> <p>Herder households along the OHTL route</p> <p>Flora and fauna (including livestock)</p> <p>Surface water bodies and ground water</p> <p>Soils</p>   | <p>Regardless of the mitigation measures, the Project will still require use of natural resources for the Project.</p> <p><b>Waste Management and Disposal – Non-hazardous waste</b></p> <p>Minor to Moderate Adverse</p> <p>Waste will be produced throughout construction, though can be limited through good planning of construction activities and recovery rates. However, the lack of waste management infrastructure means mitigation through sound disposal cannot necessarily be implemented.</p> <p><b>Waste Management and Disposal – hazardous waste</b></p> <p>Minor Adverse</p> <p>Due to the low level of hazardous wastes, overall with mitigation in place the effect is considered Minor.</p>  |
| <b>Land Use, Tenure and Displacement</b>   |   |   |
| <p>Permanent land take for the new substation in Sainshand and the 25 m RoW around the substation</p> <p>25 m RoW around the existing substation in Choir</p> <p>Permanent land take for the footprint of the OHTL foundations</p> <p>Permanent land classification in the RoW of the OHTL route (25 m in rural areas and 6 m in Choir and Sainshand cities)</p> <p>Construction working areas including any temporary or permanent access roads</p> <p>Construction works, including movement of construction workers and construction-related vehicles and equipment</p> | <p>Communities living near the substations and OHTL route in the seven <i>soums</i>, in particular communities in <i>Bagh IV</i> in <i>Sumber soum</i> of <i>Govi-Sumber aimag</i>, <i>Bagh II</i> in <i>Shiveegovi soum</i> of <i>Govi-Sumber aimag</i>, <i>Bagh V</i> in <i>Dalanjargalan soum</i> of <i>Dornogovi aimag</i>, <i>Bagh I</i> and <i>III</i> in <i>Airag soum</i>, in <i>Dornogovi aimag</i>, <i>Bagh III</i> in <i>Saikhandulaan soum</i> of <i>Dornogovi aimag</i>, <i>Bagh III</i> in <i>Altanshiree soum</i> in <i>Dornogovi aimag</i>, and <i>Bagh IV</i> in <i>Sainshand soum</i> of <i>Dornogovi aimag</i></p> <p>Herder households with permanent structures in 6 km buffer zone</p> <p>Users of pastures from other <i>soums</i> and neighbouring <i>aimags</i></p> <p>Local business and business organizations</p> | <p><b>Land use, tenure and displacement</b></p> <p>Negligible (herders)</p> <p>Overall, permanent landtake is relatively small and temporary landtake will be for the short term only. Localised access restrictions will occur during the construction phase however, this will not result in an economic impact on herders. No structures have been identified within the 25 m RoW that require relocation. Overall, the residual effects are assessed as Negligible.</p> <p>Negligible to Minor Adverse (mining concessions)</p> <p>As these are exploration licences, the loss of the small area under the OHTL route is not considered to materially affect potential future mining opportunities, assuming that exploration indicates that there are viable mining options in these areas. The impact would be negligible if there are not suitable deposits to mine.</p> <p>Negligible to Minor Adverse (locally protected sites)</p> <p>Overall, the residual effects are assessed as Negligible to Minor Adverse depending on the location and number of towers in relation to the designated sites.</p>   |
| <b>Economy, Employment and Livelihoods</b>   |   |   |
| <p>Footprint requirements of the Project</p> <p>Construction employment</p> <p>Demand for services and products</p>  | <p>National, regional and local government and administrations</p> <p>Communities living near the substations and the OHTL route in the seven <i>soums</i></p> <p>Herder households within the 6 km buffer zone of the OHTL</p> <p>Users of summer pastures from other <i>soums</i> and neighbouring <i>aimags</i></p> <p>Potential workers from the Central region and/or other regions</p> <p>Local business and business organizations</p>   | <p><b>Employment and economy</b></p> <p>Moderate Positive (direct effects on the local economy and employment)</p> <p>Receptor (local communities and businesses) sensitivity is high to medium and the impact can be enhanced through the proposed mitigation measures such as employing the local workforce and youth.</p> <p>Minor to Moderate Positive (indirect effects on the local economy and employment)</p> <p>Receptor (local businesses) sensitivity is medium. The potential indirect effects could be enhanced if local companies are employed during construction and local business are promoted for use by contractors.</p> <p>Minor Positive (direct and indirect effects on the wider economy and employment)</p> <p>The national receptors are of lower sensitivity and less goods are likely to be procured from sources outside the Project Area, therefore overall benefits at regional and national scales is considered minor during construction.</p> <p><b>Livelihoods</b></p> <p>Moderate Positive (local communities)</p> <p>The potential effects on livelihoods will be positive during the construction period. Through the implementation of the mitigation measures, in particular employing local people and purchasing local goods, the overall positive effect can be enhanced.</p> <p>Negligible (mining)</p> |



| Construction Activity / Sources of Impact  | Potentially Sensitive Receptors   | Potential Residual Effects  |
|--|---|---|
|  |   | <p>Adverse economic impacts on Concession holders are not anticipated as a result of the Project.</p> <p>Negligible (herder households)</p> <p>Adverse livelihood impacts on herders (or other groups) are not anticipated as a result of Project construction.</p>   |
| <b>Community Health, Safety and Security</b>   |   |   |
| <p>Construction employment</p> <p>Construction sites and works</p> <p>Movement of construction-related vehicles and equipment</p> <p>Influx of construction workers</p> <p>Use of power, water and local services e.g. health services</p> | <p>Communities living near the substations and the OHTL route in the seven soums</p> <p>Herder households within the 6 km buffer zone of OHTL</p> <p>Users of summer pastures from other soums and neighbouring aimags</p> <p>Livestock</p> <p>Local road users</p> <p>Local services</p> <p>Local businesses</p> | <p><b>Community health, safety and security</b></p> <p>Minor Adverse (health and safety)</p> <p>With awareness programmes in place and appropriate mitigation measures to address air emissions, noise, traffic, etc. which will reduce the impact, the significance of the adverse effect will be reduced.</p> <p>Minor Adverse (safety and security)</p> <p>Even with mitigation such as the Code of Conduct and training and awareness campaigns (local communities and contractors/workers), there remains a risk in large infrastructure projects for conflict with the local community and the spread of Sexually Transmitted Infections (STIs). The residual effect on the local community in terms of safety and security is Minor</p> <p>Minor Adverse (health and demand on local services)</p> <p>The Contractor will work with local services to manage demand during the construction phase whilst this should help manage demand on local services, inevitably there will remain an increased demand during the construction phase.</p> |
| <b>Labour and Working Conditions</b>   |   |   |
| <p>Construction employment</p> <p>Construction sites and works</p> <p>Movement of construction-related vehicles and equipment.</p>   | <p>Construction workers</p> <p>Third party suppliers</p>  | <p><b>Labour conditions</b></p> <p>Minor Adverse</p> <p>It is expected that the Contractor will be in compliance with the Labour Code on working hours, working condition, occupational health and safety and management of non-employee relations and grievances. The Contractor will also be required to ensure that labour conditions, working procedures, camp conditions and supply chain is undertaken in accordance with EBRD PR2, and this compliance will be monitored by the Client/PIU.</p> <p><b>Workers' camps</b></p> <p>Minor Adverse</p> <p>As above</p> <p><b>Occupational health and safety</b></p> <p>Minor Adverse</p> <p>The sensitivity of the workers to increased OHS risks is high with mitigation measures in place, the risk should be reduced to Minor. However, in the event that an accident does occur, the effect could still be significant.</p>   |
| <b>Cultural Heritage</b>   |   |   |
| <p>Footprint requirements of the project</p> <p>Construction working areas including any temporary or permanent access roads</p> <p>Movement of construction-related vehicles, equipment and personnel</p>                                 | <p>Tangible cultural heritage (known and unknown)</p> <p>Intangible Cultural Heritage</p>   | <p>Minor Adverse</p> <p>Whilst the unanticipated discovery of previously unknown cultural resources during construction could have a permanent impact, this will be mitigated through survey work and implementation of the Chance Finds Procedure.</p>   |

### 6.3. Operation Phase

A summary of environmental and social impacts during the operation phase as identified in ESIA is provided in Table 6-2.

**Table 6-2. Summary of environmental and social impacts during the operation phase**

| Operation Activity / Sources of impact   | Potentially Sensitive Receptor   | Potential Impacts and Effects  |
|--|--|--|
| <b>Terrestrial Biodiversity, Flora and Fauna</b>   |  |  |
| Presence of linear infrastructure<br>Presence of high voltage OHTL in the landscape  | <b>Mammals</b><br>Goitered gazelle ( <i>Gazella subgutturosa</i> ). Both IUCN and Mongolian Red List 'Vulnerable' category species<br>Mongolian gazelle ( <i>Procapra gutturosa</i> ). Mongolian Red List 'Endangered' category species<br><b>Birds</b><br>Swan goose ( <i>Anser cygnoid</i> ). IUCN Red List 'Vulnerable' category species<br>Great bustard ( <i>Otis tarda</i> ). IUCN Red List 'Vulnerable' category species<br>Steppe eagle ( <i>Aquila nipalensis</i> ). IUCN Red List 'Endangered' category species<br>Saker falcon ( <i>Falco cherrug</i> ). IUCN listed 'Endangered' and Mongolian Red List 'Vulnerable' category species<br>Cinereous vulture ( <i>Aegypius monachus</i> ). IUCN Red List 'Near-threatened' category species; prone to OHTL collision and electrocution and present in high numbers<br>Tree pipit ( <i>Anthus trivialis</i> ). Mongolian regulatory designated 'Rare' bird<br>Pallas's sandgrouse ( <i>Syrhaptes paradoxus</i> ). Most common and vulnerable species to OHTL collision in the Project Area<br>Oriental plovers ( <i>Charadius veredus</i> ). Species of socio-economic value. Prone to OHTL collision | <b>Bird collision</b><br>Minor to Moderate Adverse<br>Whilst the measures will result in a reduced risk of collision, studies show that these can be effective to around 80%. Therefore, there remains a risk of bird collision as a result of the Project.  |
| <b>Noise and Vibration</b>   |  |  |
| Overhead line operation<br>Wind blowing through conductors and other structures<br>Substation equipment<br>Routine and non-routine maintenance | Herder households who camp near the OHTL corridor on a permanent or seasonal basis<br>Flora and fauna, including livestock<br>Businesses near Choir substation (no businesses or local community are located within proximity to the Sainshand substation)   | <b>Noise</b><br>Negligible<br>Assuming design to Good International Practice (GIP) and the location of Noise sensitive receptors in relation to the operational infrastructure, no significant adverse effects on Noise sensitive receptors are anticipated. |
| <b>Waste Management</b>  |  |  |
| O&M activities, mainly at the substations  | O&M workers<br>Project and third-party waste facilities<br>Herder households along the OHTL route<br>Flora and fauna (including livestock)<br>Surface water bodies and ground water<br>Soils   | <b>O&amp;M Waste</b><br>Minor Adverse<br>With appropriate storage, handling and disposal options in place, the overall effect should be Minor.   |
| <b>Land Use</b>  |  |  |
| Permanent footprint of the Project, including the RoW and<br>O&M activities such as clearance of the RoW.                                      | Communities living near the substations in Choir and Sainshand cities and the OHTL route in the seven <i>soums</i> and <i>Baghs</i><br>Herder households with permanent structures in the 6 km buffer zone of the OHTL   | <b>Land Use</b><br><b>Negligible.</b><br>A small area of the overall exploration licenced areas will be affected. There are no operational mines affected.   |

| Operation Activity / Sources of impact   | Potentially Sensitive Receptor   | Potential Impacts and Effects  |
|--|--|--|
|  | <p>Users of summer pastures from other <i>soums</i> and neighbour <i>aimags</i></p> <p>Mining concessionaires</p>  | <p>A Negligible effect on the designated sites is anticipated.</p> <p>Moderate Positive</p> <p>The provision of a more reliable transmission network will indirectly support developments in land use in the Project Area.</p>   |
| <b>Economy, Employment and Livelihoods</b>   |  |  |
| <p>Provision of a more reliable transmission network</p> <p>O&amp;M employment</p> <p>Demand for O&amp;M services and products</p>                                       | <p>National, regional and local government and administrations</p> <p>Communities living near the substations and OHTL route in the seven <i>soums</i></p> <p>Herder households within the 6 km buffer zone of OHTL</p> <p>Users of summer pastures from other <i>soums</i> and neighbouring <i>aimags</i></p> <p>Local business and business organizations</p> <p>O&amp;M contractors</p> | <p><b>Employment and economy</b></p> <p>Moderate Positive</p> <p>Local and regional economic is considered to of medium sensitivity and, given the role energy plays in the economy, especially in this region, is considered to be medium therefore a Moderate Positive effect is predicted. Improved and more reliable energy transmission may also stimulate the development of economic activities in the <i>aimags</i> with positive knock on effects on spend in the local economy.</p> <p><b>Livelihoods</b></p> <p>Moderate Positive</p> <p>Local community sensitivity is medium and the overall magnitude should be a medium. Improved and more reliable energy transmission should also stimulate the development of businesses with increased employment opportunities, contributing to local livelihoods.</p> |
| <b>Community Health, Safety and Security</b>   |  |  |
| <p>Presence of the OHTL infrastructure</p> <p>Operation of a high tension line</p> <p>Operation of the substations</p> <p>Movement of O&amp;M vehicles and equipment</p> | <p>Communities living near the substations and OHTL route in seven <i>soums</i></p> <p>Herder households within the 6 km buffer zone of OHTL</p> <p>Users of summer pastures from other <i>soums</i> and neighbouring <i>aimags</i></p> <p>Livestock</p> <p>Local road users</p> <p>Local services</p> <p>Local businesses</p>   | <p><b>Community health, safety and security</b></p> <p>Minor Adverse (local community safety and security)</p> <p>There will be a low residual effect on communities, including herder households.</p> <p>Appropriate design and ongoing maintenance will ensure reduction in EMFs – where necessary additional measures could be employed such as shielding with specific metal alloys; modifications to size, spacing and configuration of towers to address any localised issues.</p> <p>Negligible</p> <p>No residential structures are within the 20 m guidance distance and it is unlikely that a herder will stay stationary within this zone for more than 4 hours.</p>  |
| <b>Labour and Working Conditions / Occupational Health and Safety</b>  |  |  |
| <p>Operation of the substations</p> <p>Operation of the OHTL</p> <p>Maintenance activities</p>   | <p>Substation workers</p> <p>OHTL O&amp;M staff</p> <p>Third party suppliers</p>   | <p><b>Labour and working conditions</b></p> <p>Minor Positive</p> <p>Assuming that management systems are implemented to meet Mongolian standards and EBRD PR2, this will ensure that there is an effective approach to the management of O&amp;M staff and contractors. Overall, this is likely to have a positive effect in relation to labour aspects.</p> <p><b>OHS</b></p> <p>Negligible</p> <p>Assuming that management systems are implemented to meet Mongolian standards and EBRD PR2, this will ensure that there is an effective approach to the management of O&amp;M staff and contractors. Overall, this is likely to avoid adverse effects arising.</p> <p><b>EMFs</b></p> <p>Negligible</p>  |

| Operation Activity / Sources of impact | Potentially Sensitive Receptor | Potential Impacts and Effects  |
|--|--------------------------------|--|
|  |                                | Assuming appropriate design and monitoring, no adverse effects on workers are considered likely. |

## 7. Environmental and Social Management Measures

The aim of the ESMMP is to specify and combine all topic-related commitments, actions and legal, including permit and licence, requirements. This ESMMP is set out for each stage of the Project, i.e. pre-construction, construction, post-construction/pre-handover, and operation in Table 7-1 to Table 7-4, respectively and cover the following:

- Mitigation and control measures
- Source of commitment, i.e. DEIA or ESIA
- Regulation if available, i.e. Mongolian National Standards (MNS) or Mongolian laws
- Responsible party;
- Management Plan, if applicable;
- Verification method/Compliance monitoring; and
- Reporting format.



**Table 7-1. Pre-construction phase environmental and social mitigation and control measures**

| Mitigation and Control Measure  | Source                  | Regulation (if available)                    | Responsible party       | Management Plan, if applicable | Verification Method / Monitoring of Compliance                          | Reporting Format   |
|---|-------------------------|--|-------------------------|--------------------------------|---|--|
| <b>ESMS and ESMMP</b>   |                         |  |                         |                                |   |  |
| Preparation of ESMS including: <ul style="list-style-type: none"> <li>Project policies and procedures;</li> <li>Project ESMMP.</li> <li>Legal and Permit Register;</li> <li>Project SEP;</li> <li>Project RAP/LRP, if required.</li> </ul> The Project ESMMP is based on the update of this ESMMP following completion of: <ul style="list-style-type: none"> <li>DEIA Report;</li> <li>Line route survey including final siting of pylons and temporary facilities, any wells and structures within the RoW.</li> </ul>  | DEIA, ESIA, ESAP, ESMMP | Law on Protection of Cultural Heritage, 2001 | Client                  | ESMS, ESMMP                    | Availability of ESMS, policies, ESMMP                                   | Inspection records   |
| Develop Project policies and Code of Conduct within ESMS, covering as minimum: <ul style="list-style-type: none"> <li>Environmental and Social policy</li> <li>Human resources policy (covering labour and working conditions and community health and safety)</li> <li>Contractor/Supplier policy</li> <li>Code of Conduct – to include prohibition of any construction worker using herder wells.</li> <li>Labour Management Plan for each Contractor, covering temporary workers' accommodation and gender-based violence and harassment (GBVH) – prior to start of construction works</li> </ul>    | ESIA, ESAP, ESMMP       |  | Client                  | ESMS, ESMMP                    | Availability of ESMS, policies, ESMMP                                   | Inspection records   |
| Undertake pre-construction surveys: <ul style="list-style-type: none"> <li>Final line route survey including final siting of pylons and temporary facilities, any wells and structures within the RoW</li> <li>Hire professional organization to conduct archaeological and paleontological survey and, as necessary. For any sites identified, the measures proposed by the professional organization will be implemented; this may include optimisation of the route to avoid the site; or if this is not possible, removal/relocation of the object in liaison with the relevant parties.</li> </ul> | ESIA, ESAP, ESMMP       |  | Construction Contractor | ESMMP                          | Line survey report<br>Archaeological and palaeontological survey report | Line survey report<br>Archaeological and paleontological survey report |
| Adoption of the ESMS and development of the Construction ESMMP. This should cover: <ul style="list-style-type: none"> <li>Workers' Camp Management Plan</li> <li>Water Management Plan</li> </ul>   | ESIA, ESAP, ESMMP       |  | Construction Contractor | ESMS, ESMMP                    | Adoption of ESMS and availability of Construction ESMMP.                | Inspection records   |

| Mitigation and Control Measure  | Source          | Regulation (if available) | Responsible party       | Management Plan, if applicable | Verification Method / Monitoring of Compliance   | Reporting Format                           |
|---|-----------------|---------------------------|-------------------------|--------------------------------|--|--|
| <ul style="list-style-type: none"> <li>Material Use and Waste Management Plan (including quarries/borrow pits)</li> <li>Biodiversity Management Plan</li> <li>Emergency Preparedness and Response Plan</li> <li>Spill Prevention and Response Plan</li> <li>Traffic Management Plan</li> <li>Community Health and Safety Management Plan</li> <li>Labour Management Plan (including construction camps, temporary accommodation, and GBVH)</li> <li>Supply chain management</li> <li>Occupational Health and Safety Plan</li> <li>Cultural Heritage Management Plan Chance Finds Procedure</li> <li>Soil Management Plan</li> <li>Air Quality, Noise and Vibration Management Plan</li> <li>Grievance mechanism</li> <li>Training Plan</li> <li>Security Management Plan</li> <li><b>Temporary land requirements</b></li> </ul> |                 |                           |                         |                                |  |  |
| <b>Legal and Permit Register</b>  |                 |                           |                         |                                |  |  |
| Legal and Permit Register to be developed and provided to Construction Contractor.  | ESIA, ESAP      |                           | Client                  | ESMS                           | Legal and Permit Register  | Legal and Permit Register                  |
| All necessary permits to be in place prior to the start of permitted activities.  | ESIA, ESAP      |                           | Construction Contractor | ESMS                           | Permits obtained   | Permit documentation                       |
| <b>Stakeholder engagement</b>   |                 |                           |                         |                                |  |  |
| Development an overarching "Project SEP" approach to stakeholder engagement that manages interfaces related to delivery of stakeholder.   | SEP, ESAP       |                           | Client                  | Project SEP                    | Availability of Project SEP, Grievance Mechanism and Grievance Register  | Project SEP Grievance mechanisms           |
| Ensure early notice to villages and residents prior to major project activities (e.g. RoW clearance and construction works sites) that could affect them.   | SEP, ESAP       |                           | Client                  | Project SEP                    | Meetings held and recorded<br>Notices displayed  | Engagement register<br>Minutes of meetings |
| Develop Construction SEP, for approval by PIU.  | SEP, ESAP       |                           | Construction Contractor | Construction SEP               | Appointment of Community liaison officer or equivalent<br>Availability of Construction SEP, Grievance Mechanism and Grievance Register | Engagement register<br>Minutes of meetings |
| Engagement with the local government and herders  | ESIA, SEP, ESAP |                           | Construction Contractor | Construction SEP               | Meetings held and recorded<br>Notices displayed  | Engagement register<br>Minutes of meetings |

| Mitigation and Control Measure  | Source                  | Regulation (if available) | Responsible party       | Management Plan, if applicable | Verification Method / Monitoring of Compliance   | Reporting Format                           |
|---|-------------------------|---------------------------|-------------------------|--------------------------------|--|--|
| The timing of the works will be such to minimize impact on herders, where possible e.g. during summer months when there are fewer herders present.  | ESIA, SEP, ESAP         |                           | Construction Contractor | Construction SEP               | Meetings held and recorded<br>Notices displayed  | Engagement register<br>Minutes of meetings |
| Undertake public education/awareness raising sessions in high risk areas and with high risk groups (e.g. herders, for example, encourage herders not to leave small livestock unattended).  | SEP, ESAP               |                           | Construction Contractor | Construction SEP               | Meetings held and recorded<br>Number of grievances recorded  | Construction SEP<br>Grievance mechanism    |
| <b>Land Tenure and Displacement</b>   |                         |                           |                         |                                |  |  |
| A line route survey is required to identify the specific location of towers. The final corridor and pylon locations should be reviewed, and the assessment updated. In selecting final locations, the Project and Contractor will consult with local authorities, mining concessionaires and herders. Due attention to be given to herders owning Possession Certificates.                  | ESIA, ESMMP, LARF, ESAP |                           | Construction Contractor | Line route survey              | Pylon Location Optimisation Report   | Inspection records                         |
| A full survey of assets (winter camps, wells, other structures) along the route of the OHTL that may have been omitted or relocated within the 25 m RoW or 500 m either side since the ESIA survey will be undertaken and recorded.   | ESIA, ESMMP, LARF, ESAP |                           | Client                  | RAP / LRP                      | Pre-construction OHTL survey report  | Inspection records                         |
| Engagement with the local government and herders, including confirmation of a cut-off date (to avoid herders using the final corridor).   | ESIA, SEP, ESAP         |                           | Client                  | Project SEP                    | Meetings held and recorded<br>Notices displayed  | Engagement register<br>Minutes of meetings |
| If there are any displacement impacts, preparation of a RAP/LRP, if necessary.  | ESIA, ESAP, ESMMP       |                           | Client                  | RAP / LRP                      | Availability of Project RAP/LRP  | Inspection records                         |
| In the siting of any temporary sites such as camps and access road, the Contractor will consult with local authorities, mining concessionaires and herders. Maintain records of voluntary agreements made with land owners for temporary use of land.<br><br>The Contractor will undertake their own surveys of wells to ensure these wells are not affected during the construction works. | LARF, ESAP, RLAP        |                           | Construction Contractor | RAP / LRP                      | Records of voluntary agreements made with land owners/users, as applicable<br><br>Review of the Wells and Structures Survey Report | Inspection records                         |

**Table 7-2. Construction phase environmental and social mitigation management measures**

| Mitigation Measure   | Source | Regulation                                       | Responsible party       | Management Plan, if applicable | Verification method / Monitoring of Compliance   | Reporting format     |
|--|--------|--|-------------------------|--------------------------------|--|----------------------|
| <b>Air Quality, Dust</b>   |        |  |                         |                                |  |                      |
| Work camps, construction facilities, laydown and storage areas and access roads will be located at least 500 m from herder winter camps or other structures sites.   | ESIA   |  | Construction Contractor | Air Quality Management Plan    | Site survey  | Inspection records   |
| Inform herder households of construction schedule at least 3 months in advance of activities starting (assuming the construction period will occur between April and October) Community grievance mechanism in place.  | ESIA   | Law on Environmental Protection<br>MNS 4585:2007 | Construction Contractor | Construction SEP               | Availability of Construction SEP<br>Minutes of meetings<br>Availability of grievance mechanism<br>Number of grievances | Consultation records |
| Contractor to Comply with Mongolian dust emission standard (MNS 4585: 2007).   | ESIA   | MNS 4585:2007                                    | Construction Contractor | Air Quality Management Plan    | Monthly analysis   | Monitoring records   |
| Mixing plant, if used, shall be located at a distance of at least 500 m downwind of sensitive receptors.   | ESIA   |  | Construction Contractor | Air Quality Management Plan    | Daily visual inspection  | Inspection records   |
| Regular dust suppression (watering based on 2-4 litres/m2) along roads and the earthwork sites.  | ESIA   | MNS 4585:2007                                    | Construction Contractor | Air Quality Management Plan    | Daily visual inspection  | Inspection records   |
| Enforce speed limits for all construction vehicles of no more than 20 km/h.  | ESIA   |  | Construction Contractor | Traffic Management Plan        | Availability of Traffic Management Plan<br>Continuous control  | Inspection records   |
| Avoid unpaved haul roads wherever possible. Construction vehicles will strictly follow approved routes to avoid creating multiple earth tracks. Erect visible signs informing site road traffic of permissible routes. | ESIA   | MNS 4596:2007                                    | Construction Contractor | Traffic Management Plan        | Availability of Traffic Management Plan<br>Continuous control  | Inspection records   |
| Earth material transporting trucks shall be covered with tarpaulin.  | ESIA   |  | Construction Contractor | Air Quality Management Plan    | Daily visual inspections/checks  | Inspection records   |
| PPE will be provided to workers exposed to dust.   | ESIA   |  | Construction Contractor | OHS Management Plan            | Daily visual inspection  | Inspection records   |
| All project staff including drivers to be inducted for environmental awareness and site procedures, for example vehicle speed, use of designated roads to reduce suspension of dust.                                   | ESIA   |  | Construction Contractor | Air Quality Management Plan    | Availability of environmental awareness and site procedures<br>Check the training records                              | Training records     |

| Mitigation Measure   | Source | Regulation                                | Responsible party       | Management Plan, if applicable | Verification method / Monitoring of Compliance  | Reporting format  |
|--|--------|---|-------------------------|--------------------------------|---|---|
| Soil stripping during windy periods will be prohibited where this does not constrain the construction programme; or water dousing will be employed. Fertile soil stockpiles will be designed in accordance with Mongolian standards GIP. | ESIA   |   | Construction Contractor | Soil Management Plan           | Availability of the Reinstatement Management Plan<br>Inspections during soil stripping prior to the start of construction | Inspection records  |
| Avoid site runoff of water or mud from site compounds by providing appropriate temporary drainage.   | ESIA   |   | Construction Contractor | Water Management Plan          | Check temporary drainage constructions<br>Weekly visual inspections   | Inspection records  |
| Where practicable, implement a wheel washing system dislodge accumulated dust and mud prior to leaving the sites.  | ESIA   |   | Construction Contractor | Air Quality Management Plan    | Check wheel washing system is in place<br>Weekly visual inspections   | Inspection records  |
| Rehabilitate disturbed areas as soon as practicable.   | ESIA   |   | Construction Contractor | Soil Management Plan           | Visual inspection of the status/conditions of each construction site/disturbed land plot at the end of use of site        | Inspection records  |
| Where necessary, i.e. prior to and during known dust-generating construction activities and/or on receipt of valid complaints, dust monitoring will be undertaken.   | ESIA   |   | Construction Contractor | Air Quality Management Plan    | Weekly visual inspections to determine monitoring needs<br>Number of grievances   | Inspection records  |
| Vehicles and machinery that meets the emission standard only shall be allowed to operate.  | ESIA   | Law on Air MNS 4585:2007<br>MNS 5885:2008 | Construction Contractor | Air Quality Management Plan    | Inspection of the construction vehicles before the start of the construction<br>Monthly inspection                        | Machinery and equipment inspection records<br>Construction vehicle inspection records |
| Construction vehicles, machinery and equipment shall be inspected at the start of construction and regularly to ensure the vehicles meet relevant emission standards.  | ESIA   | Law on Air MNS 4585:2007<br>MNS 5885:2008 | Construction Contractor | Air Quality Management Plan    | Inspection of the construction vehicles before the start of the construction  | Machinery and equipment inspection records<br>Construction vehicle inspection records |
| Prohibit idling of road construction machinery.  | ESIA   |   | Construction Contractor | Air Quality Management Plan    | Daily inspection<br>Continuous control  | Inspection records  |
| Parked construction vehicles and equipment will not be located close to sensitive receptors (e.g. herder camp).  | ESIA   |   | Construction Contractor | Air Quality Management Plan    | Daily inspection<br>Continuous control  | Inspection records  |
| Prohibit burning of flammable materials.   | ESIA   |   | Construction Contractor | Air Quality Management Plan    | Visual inspection<br>Continuous control   | Inspection records of any evidence of flammable materials burning                     |



| Mitigation Measure   | Source | Regulation  | Responsible party       | Management Plan, if applicable                       | Verification method / Monitoring of Compliance  | Reporting format         |
|--|--------|---|-------------------------|--|---|--------------------------|
| <b>Noise and vibration</b>   |        |   |                         |  |   |                          |
| Advance warning should be given to local communities regarding construction activities (e.g. construction schedule). Community grievance mechanism must be put in place and disclosed.   | ESIA   | Law on Environmental Protection<br>MNS<br>4585:2007 | Construction Contractor | Construction SEP                                     | Availability of Construction SEP<br>Number of grievances  | Inspection records       |
| Ensure all staff and operatives are briefed on the requirement to minimise noise nuisance.   | ESIA   |   | Construction Contractor | Noise and Vibration Management Plan<br>Training Plan | Availability of the Noise and Vibration Management Plan<br>Availability of the Training Plan<br>Training Register | Inspection records       |
| Use of attenuation measures such as silencers/enclosures where appropriate.  | ESIA   | MNS<br>4585:2007                                    | Construction Contractor | Noise and Vibration Management Plan                  | Availability of the Noise and Vibration Management Plan<br>Daily visual inspection                                | Inspection records       |
| Avoidance of unnecessary hooting of horns.   | ESIA   |   | Construction Contractor | Noise and Vibration Management Plan                  | Availability of the Noise and Vibration Management Plan<br>Daily visual inspection                                | Inspection records       |
| Establishment of agreed criteria whilst undertaking significantly noisy or vibration-causing operations near to sensitive locations e.g. herders and their livestock.  | ESIA   |   | Construction Contractor | Noise and Vibration Management Plan                  | Availability of the Noise and Vibration Management Plan<br>Daily visual inspection                                | Inspection records       |
| Work at night should be avoided where possible, especially where in proximity to herder households and local business properties/community in Choir. Where this is not possible, advance warning should be given to those potentially affected | ESIA   | Law on Environmental Protection<br>MNS<br>4585:2007 | Construction Contractor | Noise and Vibration Management Plan                  | Availability of the Noise and Vibration Management Plan<br>Daily visual inspection                                | Inspection records       |
| Where necessary, monitoring of noise at noise sensitive receptors.   | ESIA   |   | Construction Contractor | Noise and Vibration Management Plan                  | Availability of the Noise and Vibration Management Plan<br>Daily visual inspection                                | Inspection records       |
| Maximum speed limit for all construction vehicles is 20 km/h.  | ESIA   |   | Construction Contractor | Traffic Management Plan                              | Availability of the Noise and Vibration Management Plan<br>Continuous control                                     | Daily inspection records |

| Mitigation Measure   | Source | Regulation   | Responsible party                 | Management Plan, if applicable                                       | Verification method / Monitoring of Compliance   | Reporting format   |
|--|--------|--|-----------------------------------|--|--|--|
| <b>Work camps, construction facilities, laydown and storage areas and access roads will be located at least 500 m from herder winter camps or other structures sites.</b>  | ESIA   |  | Client<br>Construction Contractor | Workers' Camp Management Plan<br>Noise and Vibration Management Plan | Availability of the workers camps management plan<br>Visual observations   | Workers' Camp Management Plan<br>Visual observation records        |
| All construction machinery and equipment will be in conformance with relevant national or international standards, directives or recommendations on noise or vibration emissions.  | ESIA   | Law on Environmental Protection<br>Law on Occupational Safety<br>MNS 4585:2007 | Construction Contractor           | Noise and Vibration Management Plan                                  | Availability of the Noise and Vibration Management Plan<br>Review of the technical specifications of the machinery and equipment<br>Monthly monitoring<br>Number of grievances | Technical report<br>Noise monitoring records<br>Grievance register |
| All construction machinery and equipment will be modern and maintained regularly, paying attention to all noise-reducing devices, silencers or mufflers.   | ESIA   |  | Construction Contractor           | Noise and Vibration Management Plan                                  | Availability of the Noise and Vibration Management Plan<br>Review of the technical specifications of the machinery and equipment<br>Monthly monitoring<br>Number of grievances | Technical report<br>Noise monitoring records<br>Grievance register |
| All construction machinery and equipment will be subject to preventive inspections and planned maintenance in order to maintain in good condition with regards to minimising environmental noise and vibration as well as workers exposure to harmful noise and vibration. | ESIA   |  | Construction Contractor           | Noise and Vibration Management Plan                                  | Availability of the Noise and Vibration Management Plan<br>Review of the technical specifications of the machinery and equipment<br>Monthly monitoring                         | Technical report<br>Noise monitoring records                       |
| All construction machinery and equipment will be positioned appropriately to minimise noise at sensitive locations.  | ESIA   |  | Construction Contractor           | Noise and Vibration Management Plan                                  | Availability of the Noise and Vibration Management Plan<br>Review of the technical specifications of the machinery and equipment<br>Monthly monitoring<br>Number of grievances | Technical report<br>Noise monitoring records<br>Grievance register |
| All construction machinery and equipment will be Started up sequentially rather than all together.   | ESIA   |  | Construction Contractor           | Noise and Vibration  | Availability of the Noise and Vibration Management Plan  | Technical report   |

| Mitigation Measure  | Source | Regulation    | Responsible party       | Management Plan, if applicable      | Verification method / Monitoring of Compliance   | Reporting format   |
|---|--------|---------------|-------------------------|-------------------------------------|--|--|
|   |        |               |                         | Management Plan                     | Review of the technical specifications of the machinery and equipment<br>Monthly monitoring<br>Number of grievances  | Noise monitoring records<br>Grievance register                     |
| All construction machinery and equipment not revved unnecessarily and turned off when not in use.   | ESIA   |               | Construction Contractor | Noise and Vibration Management Plan | Availability of the Noise and Vibration Management Plan<br>Review of the technical specifications of the machinery and equipment<br>Monthly monitoring<br>Number of grievances | Technical report<br>Noise monitoring records<br>Grievance register |
| <b>Soils</b>  |        |               |                         |                                     |  |  |
| Contractor will prepare a Soil Management Plan showing the areas and type of topsoil and any subsoil to be stripped, haul routes, the methods to be used, and the location, type and management of each soil stockpile.                             | ESIA   |               | Construction Contractor | Soil Management Plan                | Availability of Soil Management Plan   | Inspection records   |
| Contractor will plan construction haul roads and acquire any necessary approvals from <i>Soum</i> authority to avoid multiple earth tracks.   | ESIA   |               | Construction Contractor | Soil Management Plan                | Maps with worker camp locations, haul roads, construction lay down areas   | Inspection reports   |
| Contractor will, where practicable, implement a wheel washing system dislodge accumulated dust and mud prior to leaving the sites.  | ESIA   |               | Construction Contractor | Soil Management Plan                | Availability of Soil Management Plan<br>Check wheel washing system is in place<br>Weekly visual inspections  | Inspection records   |
| Construction activities will be timed to avoid the rainy season.  | ESIA   |               | Construction Contractor | Construction ESMMP                  | Check timing of rainy season   | Inspection records   |
| Contractor will strip topsoil and store in accordance with Mongolian standards MNS 5916: 2008 (stripping and storage of fertile soil during earthworks) and protect against wind and rain erosion and contamination with waste and other materials. | ESIA   | MNS 5916:2008 | Construction Contractor | Soil Management Plan                | Availability of Soil Management Plan<br>Weekly visual inspections  | Inspection records   |
| Contractor will not strip soil during windy periods where this does not constrain the construction programme; or water dousing will be employed   | ESIA   |               | Construction Contractor | Soil Management Plan                | Availability of the Soil Management Plan<br>Inspections during soil stripping prior to the start of construction   | Inspection records   |

| Mitigation Measure  | Source | Regulation    | Responsible party       | Management Plan, if applicable  | Verification method / Monitoring of Compliance  | Reporting format                       |
|---|--------|---------------|-------------------------|---|---|--|
| Contractor will store stripped topsoil separately in topsoil stockpiles for a short a time period as possible   | ESIA   |               | Construction Contractor | Soil Management Plan  | Availability of Soil Management Plan<br>Weekly visual inspections   | Inspection records                     |
| Contractor will ensure that the following parameters have been met for any topsoil stockpile: <ul style="list-style-type: none"> <li>– maximum height is 2 m,</li> <li>– length is 30-50 m;</li> <li>– lateral slopes shall not exceed 20 degrees, and</li> <li>– the top compacted.</li> </ul> | ESIA   | MNS 5916:2008 | Construction Contractor | Soil Management Plan  | Availability of Soil Management Plan<br>Weekly visual inspections   | Inspection records                     |
| Contractor will ensure topsoil stockpiles are used for rehabilitation   | ESIA   |               | Construction Contractor | Soil Management Plan  | Availability of Soil Management Plan<br>Weekly visual inspections   | Inspection records                     |
| Contractor to develop and implement detailed traffic management plans for construction vehicles to prevent driving on unauthorised/unplanned areas.   | ESIA   |               | Construction Contractor | Traffic Management Plan   | Adoption of Traffic Management Plan   | Inspection records                     |
| Contractor to train all drivers and ensure suppliers are aware of the correct and approved haul roads and to avoid creating multiple earth trucks.  | ESIA   | MNS 4596:2007 | Construction Contractor | Traffic Management Plan   | Adoption of Traffic Management Plan<br>Availability of environmental awareness and site procedures<br>Check training records  | Training records                       |
| Contractor will follow the requirements of the Emergency Response and Preparedness Plan and will develop and implement detailed Spill Management Plan for the management of all chemicals, fuels and oils used during the Project, including the septic tanks and diesel generator.             | ESIA   |               | Construction Contractor | Spill Prevention and Response Plan<br>Emergency Preparedness and Response Plan<br>Training Plan | Availability of procedures for safe handling of fuels and lubricants<br>Availability of Emergency Preparedness and Response Plan and Spill Prevention and Response Plan<br>Weekly inspections of machinery/equipment maintenance and repair areas | Inspection records<br>Training records |
| Contractor will train all staff and third-party suppliers in the emergency procedures.  | ESIA   |               | Construction Contractor | Emergency Preparedness and Response Plan<br>Training Plan                                       | Availability of Emergency Preparedness and Response Plan  | Inspection records<br>Training records |

| Mitigation Measure   | Source | Regulation  | Responsible party       | Management Plan, if applicable      | Verification method / Monitoring of Compliance   | Reporting format  |
|--|--------|---|-------------------------|-------------------------------------|--|---|
| Contractor will ensure spill kits are kept in accessible locations at all times during construction, and employees trained in their use and disposal.  | ESIA   |   | Construction Contractor | Materials and Waste Management Plan | Check the Materials and Waste Management Plan<br>Weekly inspection of waste storage areas – check the availability of fire extinguishers and spill kits  | Materials and Waste Management Plan<br>Inspection records |
| Contractor will ensure all vehicles, machinery and equipment are maintained and refuelled on hard standing and will develop and adopt procedures to minimise the risk of spills to the environment.  | ESIA   |   | Construction Contractor | Spill Prevention and Response Plan  | Availability of procedures for safe handling of fuels and lubricants<br>Availability of Emergency Preparedness and Response Plan<br>Weekly inspections of machinery/equipment maintenance and repair areas | Inspection records  |
| Contractor will develop a detailed Waste Management Plan to include solid and liquid wastes to reduce risk of soil contamination. Wastes generated during the construction activities that have the potential to pollute will be stored within appropriate storage facilities (bundled, secondary containment) and procedures will be implemented for handling, storage, transport and transfer, subject to a full method statement to address construction risks and avoid impacts. | ESIA   | Road construction norm БНБД 32-02-00". Clause 109.<br><br>MNS 3297:1991<br><br>Law on Soil Protection and Prevention from Desertification | Construction Contractor | Materials and Waste Management Plan | Availability of Materials and Waste Management Plan and procedures for handling, storage, transportation and transfer of waste<br><br>Weekly inspections of bulk materials and waste points                | Inspection records<br>Waste transfer notes                |
| Maintenance of machinery and equipment will be conducted in a designated area where the conditions are not adverse to the soil and the environment.  | ESIA   |   | Construction Contractor | Soil Management Plan                | Availability of Soil Management Plan<br>Weekly inspection  | Inspection records  |
| <b>Surface water and groundwater</b>   |        |   |                         |                                     |  |   |
| <b>Contractor will prepare and implement a detailed Water Management Plan which identifies a water needs and supply assessment; water saving good practices; and obtain necessary permits for water abstraction. Ongoing monitoring will be required to ensure that any construction groundwater abstraction is not affecting herder well water availability, in accordance with permit requirements.</b>  | ESIA   |   | Construction Contractor | Water Management Plan               | Availability of the Water Management Plan  | Inspection records  |
| Contractor will not use surface or groundwater without prior permissions in place, including when ephemeral streams are in full flow.  | ESIA   |   | Construction Contractor | Water Management Plan               | Inspection of ephemeral or permanent streams and drainage  | Inspection records  |



| Mitigation Measure  | Source | Regulation | Responsible party       | Management Plan, if applicable            | Verification method / Monitoring of Compliance   | Reporting format  |
|---|--------|------------|-------------------------|---|--|---|
|   |        |            |                         |   | channels with regard to the use of water   |   |
| Contractor will not use herder wells; and will ensure all wells that could be impacted (e.g. near access road) are protected from construction works.   | ESIA   |            | Construction Contractor | Water Management Plan                     | Identification of herders' wells<br>Inspection of the herders' wells adjacent to the construction site<br>Inspection of the local herders' wells after the completion of the construction works each construction site | Map with locations of herders' wells<br>Inspection records            |
| Contractor will monitor water use / extraction from any permitted groundwater wells used.   | ESIA   |            | Construction Contractor | Water Management Plan                     | Availability of the Water Management Plan<br>Monitor water use / extraction from any groundwater well on monthly basis   | Water use/extraction volumes  |
| Contractor will undertake regular training of workers on measure to conserve water during construction and within any work camps required.  | ESIA   |            | Construction Contractor | Water Management Plan                     | Availability of the Water Management Plan  | Water use/extraction volumes  |
| Construction workers will be provided with potable water from approved sources i.e. urban water supply source.  | ESIA   |            | Construction Contractor | Occupational Health and Safety (OHS) Plan | Availability of the Potable Water for Workers  | Inspection records  |
| <b>Contractor will map local herder wells within final Project footprint and/or adjacent Project works. Any loss of wells to be relocated/replaced, in accordance with the LARF.</b><br><b>Any wells adjacent to construction works should be visibly and clearly demarcated and protected from damage.</b> | ESIA   |            | Construction Contractor | Water Management Plan<br>RAP/LRP          | Identification of herders' wells<br>Inspection of the herders' wells adjacent to the construction site<br>Inspection of the local herders' wells after the completion of the construction works each construction site | RAP/LRP<br>Map with locations of herders' wells<br>Inspection records |
| Contractor will not cause any change to the flow or channel morphology of ephemeral streams. Contractor will not site any pylon foundations in ephemeral streams.   | ESIA   |            | Construction Contractor | Water Management Plan                     | Availability of Water Management Plan<br>Visual inspection of water channel crossings after completion of the construction   | Inspection records  |
| Contractor will not cause any change to natural run off routes for surface water flow through siting of construction camps or laydown areas.  | ESIA   |            | Construction Contractor | Water Management Plan                     | Availability of Water Management Plan  | Inspection records  |
| Fuels and chemicals: Contractor will store them in designated containers with accidental spill control measures including storage   | ESIA   |            | Construction Contractor | Materials Use and Waste                   | Availability of Materials Use and Waste Management Plan  | Inspection records  |

| Mitigation Measure  | Source | Regulation | Responsible party       | Management Plan, if applicable  | Verification method / Monitoring of Compliance  | Reporting format                       |
|---|--------|------------|-------------------------|---|---|--|
| on impermeable surface, clear labels, bonding in an area that can contain 110% of the largest container volume. Storage areas will be a minimum of 100 m from any surface water feature including dry rivers.                       |        |            |                         | Management Plan   | Weekly inspections of fuel and oil products storage areas   |  |
| Fuel trucks to carry spill kits.  | ESIA   |            | Construction Contractor | Spill Prevention and Response Plan<br>Emergency Preparedness and Response Plan                  | Availability of procedures for safe handling of fuels and lubricants<br>Availability of Emergency Preparedness and Response Plan and Spill Prevention and Response Plan<br>Weekly inspections of machinery/equipment maintenance and repair areas | Inspection records<br>Training records |
| Refuel vehicles outside any surface water features.   | ESIA   |            | Construction Contractor | Spill Prevention and Response Plan<br>Emergency Preparedness and Response Plan                  | Availability of procedures for safe handling of fuels and lubricants<br>Availability of Emergency Preparedness and Response Plan and Spill Prevention and Response Plan<br>Weekly inspections of machinery/equipment maintenance and repair areas | Inspection records                     |
| Train all fuel and chemicals handling staff to use spill kits work according to the emergency preparedness and response plan  | ESIA   |            | Construction Contractor | Spill Prevention and Response Plan<br>Emergency Preparedness and Response Plan<br>Training Plan | Availability of procedures for safe handling of fuels and lubricants<br>Availability of Emergency Preparedness and Response Plan and Spill Prevention and Response Plan<br>Weekly inspections of machinery/equipment maintenance and repair areas | Inspection records<br>Training records |
| Vehicle and equipment wash to be undertaken at designated areas where all wastewater can be collected and disposed of by an approved contractor. No direct or indirect discharge to the site or surface water features is permitted | ESIA   |            | Construction Contractor | Materials Use and Waste Management Plan   | Availability of Materials Use and Waste Management Plan<br>Wastewater collection license<br>Weekly inspections of the vehicle and equipment wash areas  | Inspection records                     |
| Wastewater treatment to be implemented in construction camps as depth to groundwater under camp(s) cannot be confirmed.   | ESIA   |            | Construction Contractor | Materials Use and Waste   | Availability of Materials Use and Waste Management Plan   | Inspection records                     |

| Mitigation Measure   | Source | Regulation | Responsible party       | Management Plan, if applicable                                   | Verification method / Monitoring of Compliance   | Reporting format  |
|--|--------|------------|-------------------------|--|--|---|
|  |        |            |                         | Management Plan  | Wastewater collection license<br>Weekly inspections of the vehicle and equipment wash areas                                  |   |
| Contractor will prohibit waste or litter entering surface water features.  | ESIA   |            | Construction Contractor | Materials Use and Waste Management Plan<br>Water Management Plan | Availability of Materials Use and Waste Management Plan and Water Management Plan<br>Weekly inspections water bodies         | Inspection records  |
| Contractor will not allow any permanent or temporary construction related activities to take place in or within 50 m of dry river beds or dry lakes.                       | ESIA   |            | Construction Contractor | Water Management Plan  | Availability of Water Management Plan<br>Weekly inspections water bodies   | Inspection records  |
| Contractor will ensure no flood risk exacerbation through careful consideration of construction drainage and flood risks to local properties from construction activities. | ESIA   |            | Construction Contractor | Water Management Plan  | Availability of Water Management Plan<br>Inspection of the construction sites liable to be subject to surface water/flooding | Inspection records  |
| Contractor will assess flood risk daily in periods of high rainfall through contact with meteorological stations and soum authorities.                                     | ESIA   |            | Construction Contractor | Water Management Plan  | Availability of Water Management Plan<br>Daily inspections when high rainfall  | Inspection records  |
| <b>Traffic and Transport</b>   |        |            |                         |  |  |   |
| Contractor will prepare and implement a detailed Traffic Management Plan.  | ESIA   |            | Construction Contractor | Traffic Management Plan  | Availability of Traffic Management Plan  | Inspection records  |
| Wherever possible, the RoW should be used as the haul road, minimising the need for new access roads.  | ESIA   |            | Construction Contractor | Traffic Management Plan  | Availability of Traffic Management Plan<br>Weekly inspections of the construction site haul roads used                       | Inspection records  |
| Where new temporary or permanent roads are required for access, they should as far as possible use existing tracks.  | ESIA   |            | Construction Contractor | Traffic Management Plan  | Weekly inspections of the construction site haul roads used  | Inspection records  |
| Appropriate ingress/egress will be provided where construction traffic requires to move to/from the haul road to the public road.  | ESIA   |            | Construction Contractor | Traffic Management Plan  | Check availability and nature of ingress/egress  | Inspection records<br>Incidents and Accidents Form and Register |

| Mitigation Measure  | Source | Regulation | Responsible party       | Management Plan, if applicable                | Verification method / Monitoring of Compliance  | Reporting format  |
|---|--------|------------|-------------------------|---|---|---|
| Advance warning to herders and, where necessary, traffic marshals will be in place during HGV deliveries to site.   | ESIA   |            | Construction Contractor | Traffic Management Plan                       | Check availability of traffic marshall at ingress/egress when deliveries                        | Inspection records<br>Incidents and Accidents Form and Register |
| <b>Biodiversity, Flora and Fauna</b>  |        |            |                         |   |   |   |
| Undertake a disturbance survey to identify if any of the sensitive receptor flora species exist under the final Project footprint.  | ESIA   |            | Construction Contractor | Biodiversity Management Plan                  | Appointment of Ecologist<br>Verify Disturbance Survey Report                                    | Inspection records  |
| Develop and deliver biodiversity awareness training to Project personnel on sensitive biodiversity species and Project commitments.   | ESIA   |            | Construction Contractor | Training Plan<br>Biodiversity Management Plan | Training Register   | Inspection records on training register                         |
| Where possible, existing tracks and the RoW will be used. Where this is not possible (i.e. a new access road is required), the new access routes will be selected with minimal disturbance to vegetation species including the two sensitive species. | ESIA   |            | Construction Contractor | Traffic Management Plan                       | Weekly inspections of the construction site haul roads used                                     | Inspection records  |
| Contractors to develop and implement detailed traffic management plans for construction vehicles to prevent driving on unauthorised/unplanned areas.  | ESIA   |            | Construction Contractor | Traffic Management Plan                       | Weekly inspections of the construction site haul roads used                                     | Inspection records  |
| Working areas will be clearly demarcated and not works outside of designated areas will be permitted  | ESIA   |            | Construction Contractor | Biodiversity Management Plan                  | Weekly inspections of the construction areas  | Inspection records  |
| Contractor will undertake progressive rehabilitation according to the Project standards.  | ESIA   |            | Construction Contractor | Reinstatement Plan                            | Weekly inspections of the implementation of the Reinstatement Plan<br>Verify Reinstatement Plan | Inspection records  |
| Limit all Project related vehicles speed on earth tracks to avoid excessive dust.   | ESIA   |            | Construction Contractor | Traffic Management Plan                       | Weekly inspections of the construction site   | Inspection records  |
| Contractor will plan and undertake earth work and materials transport activities during less windy times as practicable   | ESIA   |            | Construction Contractor | Traffic Management Plan                       | Daily inspection when high wind conditions e.g. >10m/s  | Inspection records  |
| Contractor will water earth works sites and tracks as necessary.  | ESIA   |            | Construction Contractor | Air Quality Management Plan                   | Weekly inspections of the construction site   | Inspection records  |
| Prohibit all Project personnel to collect, purchase or damage sensitive flora species. Punitive action will be taken if this commitment is ignored.   | ESIA   |            | Construction Contractor | Biodiversity Management Plan                  | Weekly inspections of the construction site   | Inspection records  |

| Mitigation Measure  | Source | Regulation | Responsible party                 | Management Plan, if applicable                | Verification method / Monitoring of Compliance     | Reporting format                      |
|---|--------|------------|-----------------------------------|---|--|---------------------------------------|
| Toolbox talks on sensitive flora species information.   | ESIA   |            | Construction Contractor           | Biodiversity Management Plan<br>Training Plan | Training Register                                  | Inspection records                    |
| Contractor will prepare and implement a Soil Management Plan.   | ESIA   |            | Construction Contractor           | Soil Management Plan                          | Availability of Soil management Plan               | Inspection records                    |
| Contractor will develop and deliver biodiversity awareness training to Project personnel on sensitive biodiversity species and Project commitments, and penalties for breaching wildlife commitments and statutory regulations. | ESIA   |            | Construction Contractor           | Biodiversity Management Plan<br>Training Plan | Training Register                                  | Inspection records                    |
| Only designated roads will be used for construction traffic, and vehicle speed limits will be enforced to minimise the risk of road accidents with wildlife.  | ESIA   |            | Construction Contractor           | Traffic Management Plan                       | Weekly inspections of the construction site        | Inspection records                    |
| Construction vehicle movement will be restricted to daylight hours wherever possible to minimise risks of collision.  | ESIA   |            | Construction Contractor           | Traffic Management Plan                       | Weekly inspections of the construction site        | Inspection records                    |
| Construction deliveries will be organised in convoys to reduce impacts to mammals.  | ESIA   |            | Construction Contractor           | Traffic Management Plan                       | Weekly inspections of the construction site        | Inspection records                    |
| Contractor will provide driver education and enforcement.   | ESIA   |            | Construction Contractor           | Traffic Management Plan<br>Training Plan      | Training Register                                  | Inspection records                    |
| Contractor will plan and undertake construction activities during the daytime wherever possible, when wildlife movement is lower.   | ESIA   |            | Construction Contractor           | Construction ESMMS                            | Weekly inspections of the construction site        | Inspection records                    |
| Vehicle movements will be restricted to daylight hours only wherever possible.  | ESIA   |            | Construction Contractor           | Traffic Management Plan                       | Weekly inspections of the construction site        | Inspection records                    |
| Vehicles will be prohibited from parking alongside access roads, or leaving access roads, except in an emergency or to manage fatigue.  | ESIA   |            | Construction Contractor           | Traffic Management Plan                       | Weekly inspections of the construction site        | Inspection records                    |
| The Code of Conduct will include a ban on the purchase of wildlife products, which will be enforced through periodic inspection and penalties for anyone breaking the rules.  | ESIA   |            | Construction Contractor<br>Client | ESMS  | Periodic inspections                               | Inspection records                    |
| Contractor will engage with local community and government regulators to monitor illegal wildlife products being sold associated with Project personnel.  | ESIA   |            | Construction Contractor           | Project SEP<br>Grievance mechanism            | Review the Community Grievance Forms and Registers | Community Grievance Form and Register |

| Mitigation Measure   | Source | Regulation | Responsible party       | Management Plan, if applicable                           | Verification method / Monitoring of Compliance   | Reporting format   |
|--|--------|------------|-------------------------|--|--|--|
| Bird species hotspots (i.e. the Rocky valley area at KM50, ephemeral lake and any other temporary surface water areas) to be included in the biodiversity awareness training for Project personnel.  | ESIA   |            | Construction Contractor | Biodiversity Management Plan<br>Training Plan            | Verify that the Training Plan includes it<br>Training records  | Inspection records   |
| Contractor to manage works to avoid critical times (migration, nesting, and breeding) of the sensitive receptor birds, as far as possible.   | ESIA   |            | Construction Contractor | Biodiversity Management Plan                             | Inspections to verify  | Inspection records   |
| Construction workers will be required to work in designated areas only. Visits to hotspots and other areas with high bird activity (for example, the breeding sites of the Oriental plovers) will be prohibited by construction staff during the construction period.  | ESIA   |            | Construction Contractor | Biodiversity Management Plan                             | Weekly inspections of the construction site  | Inspection records   |
| Pre-disturbance site examination by trained specialist to avoid bird nests in construction areas.  | ESIA   |            | Construction Contractor | Biodiversity Management Plan                             | Appointment of Bird Expert<br>Verify Bird Hotspots Report  | Inspection records   |
| No unnecessary idling of heavy equipment in the vicinity of the bird hotspots and any other areas with high bird activity.   | ESIA   |            | Construction Contractor | Biodiversity Management Plan                             | Weekly inspections of the construction site  | Inspection records   |
| <b>Materials Use and Waste Management</b>  |        |            |                         |  |  |  |
| Contractor shall prepare and implement a detailed Materials Use and Waste Management Plan.   | ESIA   |            | Construction Contractor | Materials Use and Waste Management Plan                  | Availability of Materials Use and Waste Management Plan  | Inspection records   |
| The waste hierarchy shall be applied in project planning to ensure efficient use and management of resources so that priority is to prevent generation of waste at source (i.e. smart purchase approach by estimating the amount correctly and efficient use of materials so that no surplus material that might end up as a waste) and facilitate waste recovery wherever possible. | ESIA   |            | Construction Contractor | Materials Use and Waste Management Plan                  | Availability of Materials Use and Waste Management Plan<br>Waste hierarchy included in the Plan      | Inspection records<br>Evidence/records of recycling and re use |
| Provide project employees with training on waste management to improve knowledge and awareness on reducing waste generation, waste types and their classification, and project waste management rules.   | ESIA   |            | Construction Contractor | Materials Use and Waste Management Plan<br>Training Plan | Check that waste training program/environmental awareness programme is in place and training records | Waste management/<br>environmental awareness training records  |
| Disposal of wastes without a permit shall be prohibited.   | ESIA   |            | Construction Contractor | Materials Use and Waste Management Plan                  | Availability of waste permitting documentation   | Waste permit   |
| Designated waste storage area will be located away from surface water drains and areas which discharge directly to the water environment. Each designated waste storage area will be   | ESIA   |            | Construction Contractor | Materials Use and Waste                                  | Availability of Materials and Waste Management Plan  | Waste storage areas inspection records                         |



| Mitigation Measure  | Source | Regulation   | Responsible party       | Management Plan, if applicable                        | Verification method / Monitoring of Compliance   | Reporting format   |
|---|--------|--|-------------------------|---|--|--|
| equipped with waste skips, containers or bins for temporary storage before recycling, treatment or disposal off site.   |        |  |                         | Management Plan                                       | Inspection of the waste storage areas  |  |
| Periodic inspections of waste storage areas will be conducted; inspection findings will be documented.  | ESIA   |  | Construction Contractor | Materials Use and Waste Management Plan               | Availability of Materials and Waste Management Plan<br>Weekly inspections of waste storage containers  | Inspection records   |
| Temporary storage areas for inert and non-hazardous waste will: <ul style="list-style-type: none"> <li>– be placed in areas with minimum fire and explosions risks;</li> <li>– be easily identifiable and clearly signed;</li> <li>– have periodic inspections and findings documented.</li> </ul>  | ESIA   |  | Construction Contractor | Materials Use and Waste Management Plan               | Availability of Materials and Waste Management Plan<br>Weekly inspections of the temporary storage areas for inert and non-hazardous waste   | Inspection records   |
| Waste storage containers will be: <ul style="list-style-type: none"> <li>– clearly labelled – to describe the contents using the appropriate waste labels which shall be completed;</li> <li>– old labels shall be removed to avoid confusion;</li> <li>– appropriate to the waste they contain;</li> <li>– appropriately sealed (e.g. with a lid or cover);</li> <li>– not emitting any harmful gases or generating heat.</li> </ul> | ESIA   |  | Construction Contractor | Materials Use and Waste Management Plan               | Availability of Materials and Waste Management Plan<br>Weekly inspections of waste storage containers  | Inspection records   |
| Food waste shall be disposed to a designate collection points protected with fencing in order to prevent from animal poisoning.   | ESIA   |  | Construction Contractor | Materials Use and Waste Management Plan               | Weekly visual inspections of the waste collection and storage areas, including food waste collection points  | Inspection results   |
| The burning of waste will be prohibited.  | ESIA   |  | Construction Contractor | Materials Use and Waste Management Plan Training Plan | Continuous control<br>Weekly inspections of waste collection points - evidence of waste burning (if it took place)<br>Waste training program/ environmental awareness programme in place | Inspection records<br>Waste management/ environmental awareness training records |
| Hazardous waste transportation will comply with the "Regulation on Classification, Collection, Packing, Temporary Placement, Transport, Safety, and Completion of Hazardous Wastes" and "Law on Waste" (May 2012). Hazardous waste will be transported from the construction site to appropriately licenced/permitted facilities for treatment, recycling, re-use or disposal.  | ESIA   | Regulation on Classification, Collection, Packing, Temporary Placement, Transport, Safety, and Completion of | Construction Contractor | Materials Use and Waste Management Plan               | Availability of Materials use and Waste Management Plan<br>Check that the companies responsible for hazardous waste transportation have required licenses                                | Inspection records   |

| Mitigation Measure  | Source | Regulation                              | Responsible party       | Management Plan, if applicable          | Verification method / Monitoring of Compliance  | Reporting format  |
|---|--------|---|-------------------------|---|---|---|
|   |        | Hazardous Wastes (2012)<br>Law on Waste |                         |   |   |   |
| Waste will be stored in a manner that: <ul style="list-style-type: none"> <li>– prevents a contact between incompatible wastes, and</li> <li>– allows for inspection between containers to monitor leaks or spills.</li> </ul>  | ESIA   |   | Construction Contractor | Materials Use and Waste Management Plan | Availability of Materials Use and Waste Management Plan<br>Weekly inspections of hazardous waste storage areas  | Inspection records  |
| Hazardous waste will be stored in closed containers away from direct sunlight, wind and rain.   | ESIA   |   | Construction Contractor | Materials Use and Waste Management Plan | Availability of Materials Use and Waste Management Plan<br>Weekly inspections of hazardous waste storage areas  | Inspection records  |
| Secondary containment systems will be constructed with materials appropriate for the wastes being contained and adequate to prevent loss to the environment. Secondary containment is included wherever liquid wastes are stored in volumes greater than 220 litres. The available volume of secondary containment will be at least 110% of the total storage capacity, or 25% of the total storage capacity. | ESIA   |   | Construction Contractor | Materials Use and Waste Management Plan | Availability of Materials Use and Waste Management Plan<br>Visual inspection of the secondary containment systems   | Inspection records  |
| Adequate ventilation will be provided where volatile wastes are stored.   |        |   |                         | Materials Use and Waste Management Plan | Availability of Materials Use and Waste Management Plan<br>Visual inspection of the secondary containment systems   |   |
| Readily available information on chemical compatibility to employees will be provided, including labelling each container to identify its contents.   | ESIA   |   | Construction Contractor | Materials Use and Waste Management Plan | Weekly inspections of the chemicals and hazardous waste storage areas to check the availability of the information on chemical compatibility and labelling                    | Inspection records  |
| The hazardous waste storage area will be clearly identified and demarcated, including on a facility map or site plan. Access to hazardous waste storage areas will be limited to employees who have received proper training.   | ESIA   |   | Construction Contractor | Materials Use and Waste Management Plan | Availability of Materials Use and Waste Management Plan<br>Weekly inspections of the hazardous waste storage areas<br>Review of the hazardous waste handling training records | Hazardous waste handling training records<br>Inspection records |

| Mitigation Measure  | Source     | Regulation | Responsible party       | Management Plan, if applicable  | Verification method / Monitoring of Compliance  | Reporting format                      |
|---|------------|------------|-------------------------|---|---|---------------------------------------|
| Spill response and emergency plans will be prepared to address their accidental release. For spills, once the sand absorbs oil, it shall be disposed designated waste disposal area. Before removing contaminated soils, take special containers or plastic bags to avoid pollution.  | ESIA       |            | Construction Contractor | Spill Prevention and Response Plan  | Availability of the Spill Prevention and Response Plan, waste permitting documentation in relation to disposal of sand contaminated by oil<br>Waste permitting documentation/licenses             | Inspection records                    |
| Storage areas will be provided with fire extinguishers, spill kits according to the type and quantity of stored hazardous waste. Waste containers will be secured and labelled with the contents and associated hazards, be properly loaded on the transport vehicles and be accompanied by a shipping paper with the description of the load and its associated hazards. | ESIA       |            | Construction Contractor | Materials Use and Waste Management Plan<br>Spill Prevention and Response Plan | Availability of Materials Use and Waste Management Plan and Spill Prevention and Response Plan<br>Weekly inspection of waste containers<br>Review of hazardous waste loading process as necessary | Inspection records<br>Shipping paper  |
| <b>Land Tenure and Displacement</b>   |            |            |                         |   |   |                                       |
| The RoW clearance and construction works sites and timings will be announced in advance to affected land users to allow them to take adequate actions.  | LARF, ESAP |            | Client                  | RAP / LRP   | Review of the Wells and Structures Survey Report<br>RAP / LRP   | Inspection records                    |
| The timing of the works will be such to minimize impact on herders, where possible e.g. during summer months when there are fewer herders present.  | ESIA       |            | Construction Contractor | Construction ESMMP  | Construction Schedule   | Inspection reports                    |
| The Contractor shall ensure the reuse of existing paths and tracks for access roads wherever possible. Any temporary roads should be reinstated after use.  | ESIA       |            | Construction Contractor | Traffic Management Plan   | Maps with worker camp locations, haul roads, construction lay down areas  | Inspection reports                    |
| Clearance and construction works shall be restricted to within designated working areas.  | ESIA       |            | Construction Contractor | Construction ESMMP  | Maps with worker camp locations, haul roads, construction lay down areas  | Inspection reports                    |
| Contractor shall undertake regular watering of earth/haul roads.  | ESIA       |            | Construction Contractor | Water Management Plan   | Daily inspections   | Inspection reports                    |
| A grievance mechanism shall be put in place.  | ESIA       |            | Construction Contractor | Grievance mechanism   | Review the Community Grievance Forms and Registers  | Community Grievance Form and Register |
| <b>Economy, Employment and Livelihoods</b>  |            |            |                         |   |   |                                       |
| A Labour Management Plan shall be prepared by the Contractor to manage labour processes.  | ESIA       |            | Construction Contractor | Labour Management Plan  | Availability of Labour Management Plan  | Labour Management Plan                |

| Mitigation Measure   | Source | Regulation | Responsible party       | Management Plan, if applicable                | Verification method / Monitoring of Compliance  | Reporting format  |
|--|--------|------------|-------------------------|---|---|---|
| Contractor shall develop a local procurement and recruitment policy that enhances purchase of local content, use of local workers and women, and promotes the use of local goods and services.   | ESIA   |            | Construction Contractor | Labour Management Plan                        | Policy included in the Labour Management Plan   | Labour Management Plan                                      |
| Contractor shall ensure their recruitment process is fully disclosed to the public and open to all people locally of working age and ability, including women. The process should be based on appointment by merit rather than by any political, clan, or class affiliation but should be affirmative with regard to promoting opportunities to less advantaged and more vulnerable people locally. Contractor shall collaborate with local authorities to reduce discrimination against local workers in the community. | ESIA   |            | Construction Contractor | Labour Management Plan<br>Grievance mechanism | Review the job advertising and recruitment process<br>Review the Community Grievance Forms and Registers<br>Check that the collaboration with local authorities took place<br>Evidence of collaboration/ meetings with local authorities, meeting notes etc | Inspection records<br>Community Grievance Form and Register |
| Contractor shall procure goods locally wherever possible, including perishable goods provided by stall holders who could adversely affected by the Project.  | ESIA   |            | Construction Contractor | Labour Management Plan                        | Availability of Supply Chain Management procedure<br>Procurement Registers  | Inspection records  |
| Contractor shall ensure employment and training of the local workforce.  | ESIA   |            | Construction Contractor | Labour Management Plan                        | Availability and disclosure of Labour Management Plan<br>Availability of Training Plan<br>Review the Community Grievance Forms and Registers  | Labour/recruitment reports                                  |
| Contractor shall consider possibilities of purchasing local content (preferably from the affected herder households).  | ESIA   |            | Construction Contractor | Labour Management Plan                        | Availability of Supply Chain Management procedure<br>Procurement Registers  | Inspection records  |
| A Grievance Mechanism shall be established during the construction phase to ensure that local communities and stakeholders have an adequate channel to voice concerns. This will also cover any unforeseen impacts on herder livelihoods.  | ESIA   |            | Construction Contractor | Project SEP<br>Grievance mechanism            | Review the Community Grievance Forms and Registers  | Community Grievance Form and Register                       |
| <b>Community Health, Safety and Security</b>   |        |            |                         |   |   |   |
| Contractor shall prepare a detailed Community Health, Safety and Security Plan.  | ESIA   |            | Construction Contractor | Community Health and Safety Management Plan   | Availability of Community Health and Safety Management Plan   | Inspection records  |
| Management of haul roads, access roads and haul traffic. Construction vehicles to keep to agreed access routes, minimise risk and disruption road users and herders, and adhere to speed limits.   | ESIA   |            | Construction Contractor | Traffic Management Plan                       | Check presence of traffic marshal<br>Review the Community Grievance Forms and Registers   | Inspection records  |

| Mitigation Measure   | Source | Regulation | Responsible party                              | Management Plan, if applicable                               | Verification method / Monitoring of Compliance  | Reporting format  |
|--|--------|------------|--|--|---|---|
|  |        |            | Grievance mechanism                            |  |   | Incidents and Accidents Form and Register                       |
| Appropriate management of interaction of construction traffic with public road users, such as use of traffic marshals/flagmen.   | ESIA   |            | Construction Contractor<br>Grievance mechanism | Traffic Management Plan                                      | Check presence of traffic marshal<br>Review the Community Grievance Forms and Registers   | Inspection records<br>Incidents and Accidents Form and Register |
| Complex traffic control to be coordinated in liaison with the Road Police.   | ESIA   |            | Client   | Traffic Management Plan                                      | Availability and the content Traffic Management Plan  | Inspection records<br>Incidents and Accidents Form and Register |
| Construction sites and camps will be fenced off.   | DEIA   |            | Construction Contractor                        | Construction ESMMP   | Weekly visual inspection of the borrow pits   | Inspection records  |
| Access to construction sites and facilities will be restricted to authorised personnel only.   | DEIA   |            | Construction Contractor                        | Construction ESMMP   | Weekly visual inspection of the fences  | Inspection records  |
| Equipment and materials will be properly secured. When not in use, machinery will be stored in compounds of guarded.   | DEIA   |            | Construction Contractor                        | Construction ESMMP   | Weekly visual inspection of the plant compounds   | Inspection records  |
| Tower base excavations will be clearly marked and made inaccessible to the public.   | DEIA   |            | Construction Contractor                        | Construction ESMMP   | Weekly visual inspection of the fences  | Inspection records  |
| Speed limits shall be imposed on construction traffic to minimise risk of accidents, especially where construction traffic is using the public road and at entrance/egress points onto the public road; and along access roads.  | ESIA   |            | Construction Contractor                        | Traffic Management Plan                                      | Weekly inspection of the availability of the signs indicating speed limits on construction traffic using the public road and at entrance/egress points onto the public road | Inspection records<br>Incidents and Accidents Form and Register |
| Contractor shall undertake community liaison in advance of works to ensure that the local community and road users are aware of the constructions works and associated risks. Warning signs will be erected at appropriate sites near local access roads and bagh centres. | ESIA   |            | Construction Contractor                        | Construction SEP   | Availability of Construction SEP and evidence of meetings held  | Minutes of meetings   |
| All Contractor employees will be issued with a Code of Conduct addressing expectations and punitive measures concerning their discipline and behaviour (including for inappropriate sexual fraternisation) in project-affected communities.                                | ESIA   |            | Construction Contractor                        | Community Health and Safety Management Plan<br>Training Plan | Availability and content of community awareness and responsibility training, and training records/register<br>Availability of Code of Conduct                               | Training records/register<br>Grievance form and register        |

| Mitigation Measure   | Source | Regulation | Responsible party                 | Management Plan, if applicable   | Verification method / Monitoring of Compliance  | Reporting format  |
|--|--------|------------|-----------------------------------|--|---|---|
|  |        |            |                                   | Code of Conduct<br>Construction SEP  | Check whether training has been included in induction training<br>Number of community grievances  |   |
| Employee awareness and responsibility training (that includes instruction on sexual harassment, conduct, and health, gender and local culture and traditions) will be included as part of the induction programme for all Contractor workers.  | ESIA   |            | Construction Contractor           | Community Health and Safety Management Plan<br>Training Plan<br>Code of Conduct<br>Project/ Construction SEP | Availability and content of community awareness and responsibility training, and training records/register<br>Availability of Code of Conduct<br>Check whether training has been included in induction training<br>Number of community grievances | Training records/register<br>Grievance form and register      |
| Contractor will be required to locate the construction camps and access tracks at least 500 m from herder shelters/camps in unpopulated rural areas.   | ESIA   |            | Construction Contractor           | Construction ESMMP<br>Construction SEP<br>Grievance mechanism  | Availability of SEP and Construction ESMMP<br>Check the presence and movements of herders along the route are mapped out<br>Review the Community Grievance Forms and Registers  | Inspection records<br>Community Grievance Form and Register   |
| Contractor will be required to undertake a due diligence investigation for all security personnel and organisations to be used.  | ESIA   |            | Construction Contractor           | Labour Management Plan   | Check whether the due diligence investigation has been undertaken   | Due diligence record for security personnel and organisations |
| Contractor and Project will develop and implement a fully coordinated community grievance mechanism. This will provide a simple complaint and reporting procedure. This shall be widely disclosed, publicised and accessible to all community members to support the reporting and redress of any transgressions, sexual or otherwise as well as other Project grievances. | ESIA   |            | Client<br>Construction Contractor | Project/ Construction SEP  | Check whether stakeholder grievance mechanism has been disclosed and implemented<br>Number and type of grievances<br>Check that the grievances and resolutions are reported to PIU on monthly basis   | Grievance form and register                                   |
| An Emergency Response Plan will be prepared, that will consider impacts on local communities and how local communities may need to respond in the case of an emergency.  | ESIA   |            | Construction Contractor           | Emergency Preparedness and Response Plan   | Availability and content of the Emergency Preparedness and Response Plan  | Inspection records  |
| <b>Labour and working conditions</b>   |        |            |                                   |  |   |   |



| Mitigation Measure  | Source | Regulation                      | Responsible party                 | Management Plan, if applicable   | Verification method / Monitoring of Compliance   | Reporting format  |
|---|--------|---------------------------------|-----------------------------------|--|--|---|
| Contractor shall adopt a detailed HR policy and Labour Management Plan, in line with applicable national labour laws and EBRD PR2, PR4 and general GIP to be approved by <b>Client</b> /PIU.  | ESIA   | Applicable national labour laws | Client<br>Construction Contractor | Labour Management Plan   | Availability and content of the Labour Management Plan and HR Policy   | Labour Management Plan<br>Inspection records              |
| Contractor's HR policy and Labour Management Plan will be readily available and understandable to all employees, and set out its approach to managing employees, including rights under Mongolian labour and employment law, and employee rights to join worker organisations and bargain collectively. | ESIA   | Applicable national labour laws | Construction Contractor           | Labour Management Plan   | Availability of HR policy and Labour Management Plan and HR Policy<br>Availability of Employee Grievance Mechanism                                     | Inspection record<br>Employee Grievance Form and Register |
| Opportunities to maximise gender equality should be taken where possible by the Contractor.   | ESIA   |                                 | Construction Contractor           | Labour Management Plan   | Availability of HR policy and Labour Management Plan<br>Number of women employed as % of construction workforce  | Inspection records  |
| A formal Project and Contractor Project labour grievance mechanism to be set up and maintained. Reporting of grievances and resolutions proposed to be reported to <b>Client</b> /PIU as a minimum in monthly reports.  | ESIA   |                                 | Construction Contractor           | Labour Management Plan   | Availability of Employee Grievance Mechanism<br>Number of grievances<br>Check that the grievances and resolutions are reported to PIU on monthly basis | Employee Grievance Form and Register                      |
| Worker camps will be established in accordance with EBRD/IFC guidance: Workers' accommodation: processes and standards. The Contractor will prepare for approval by PIU a Camp Management Plan prior to construction.   | ESIA   |                                 | Construction Contractor           | Workers' Camp Management Plan<br>Code of Conduct<br>Labour Management Plan | Availability of Workers' Camp Management Plan and Code of Conduct<br>Availability of Employee Grievance Mechanism<br>Number of grievances              | Inspection record<br>Employee Grievance Form and Register |
| Security shall be hired to guard camps and shall be available for prompt communication with workers.  | ESIA   |                                 | Construction Contractor           | Labour Management Plan   | Check that security staff is hired and available   | Inspection record   |
| Worker camps will be established in accordance with EBRD/IFC guidance: Workers' accommodation: processes and standards. The Contractor will prepare for approval by PIU a Camp Management Plan prior to construction.   | ESIA   |                                 | Construction Contractor           | Workers' Camp Management Plan<br>Code of Conduct                           | Availability of Workers' Camp Management Plan and Code of Conduct<br>Availability of Employee Grievance Mechanism<br>Number of grievances              | Inspection record<br>Employee Grievance Form and Register |

| Mitigation Measure  | Source | Regulation | Responsible party              | Management Plan, if applicable            | Verification method / Monitoring of Compliance   | Reporting format  |
|---|--------|------------|--------------------------------|---|--|---|
|   |        |            |                                | Labour Management Plan                    |  |   |
| Code of Conduct will include measures for construction camp living.   | ESIA   |            | Client Construction Contractor | Code of Conduct<br>Labour Management Plan | Availability of Workers' Camp Management Plan and Code of Conduct  | Inspection record   |
| Security shall be hired to guard camps and shall be available for prompt communication with workers.  | ESIA   |            | Construction Contractor        | Labour Management Plan                    | Check that security staff is hired and available   | Inspection record   |
| Ensure food safety, drinking water quality and hygiene and impose regular control.  | ESIA   |            | Construction Contractor        | Workers' Camp Management Plan             | Check that the food and potable water have been supplied by licensed organisations<br>Check documentation confirming that the potable water meets potable water standards Check that the hygiene | Inspection record   |
| Contractor management systems will follow the Project ESMS and be aligned with international standard ISO 45001 and developed in alignment with EBRD PR2 – Labour and Working conditions and PR4.   | ESIA   |            | Construction Contractor        | Labour Management Plan                    | Check that the management system meets the ESMS and is aligned with ISO 45001 and EBRD PR2 and PR4   | Inspection records  |
| Provide, implement and disseminate an OHS plan. Requirements to include (but not to be limited to): <ul style="list-style-type: none"> <li>Site Rules</li> <li>Job and task specific hazard analysis and controls for all activities.</li> <li>Requirements for and enforcement of PPE use.</li> <li>Safety training for personnel.</li> <li>Develop and implement an emergency response procedure.</li> <li>Oversight of contractor OHS development / implementation, including mandatory reporting to PIU.</li> <li>Maintain statistics of total work hours, lost time, incidents, injuries, near misses etc.</li> <li>Toolbox talks to share information on risks, accident prevention, etc.</li> <li>Ensure no prohibited materials such as asbestos containing materials (e.g. pipes) are procured or used.</li> </ul> | ESIA   |            | Construction Contractor        | OHS Plan                                  | Availability and content of the OHS plan   | Inspection records<br>Incidents and Accidents Form and Register |
| <ul style="list-style-type: none"> <li>Contractor will provide, implement and disseminate a detailed Emergency Preparedness and Response Plan detailing preventative measures for all types of incidents covered in the plan. This plan should be developed and implemented in</li> </ul>   | ESIA   |            | Construction Contractor        | Emergency Preparedness                    | Availability and content of the Emergency Preparedness and Response Plan   | Inspection records  |

| Mitigation Measure  | Source | Regulation | Responsible party                 | Management Plan, if applicable  | Verification method / Monitoring of Compliance  | Reporting format                                |
|---|--------|------------|-----------------------------------|---|---|---|
| <p>liaison with local community members, authorities and emergency services, and cover the requirements of PR4. This Plan be in place prior to construction commences on site. It should include as a minimum:</p> <ul style="list-style-type: none"> <li>Identification of potential emergencies and risk assessments e.g. spills, fires, collisions, worker injury</li> <li>Roles and responsibilities</li> <li>Development of procedures to respond to identified emergencies</li> <li>Equipment required e.g. first aid facilities, firefighting equipment, etc.</li> <li>Testing and inspection regimes for emergency equipment</li> <li>Muster points. evacuation routes</li> <li>Training requirements</li> <li>Communication protocols to workers, public and other affected parties</li> <li>Location of nearest medical facilities</li> </ul> <ul style="list-style-type: none"> <li>Update and review cycle</li> </ul> |        |            |                                   | and Response Plan   |   | Incidents and Accidents Form and Register       |
| <b>Cultural Heritage</b>  |        |            |                                   |   |   |   |
| Contractor will put in place a Chance Finds Procedure and conduct training in its implementation.   | ESIA   |            | Construction Contractor           | Cultural Heritage Management Plan<br>Chance Find Procedure<br>Training Plan | Availability of cultural heritage awareness training program, and training records<br>Check that Cultural Heritage Chance Finds Procedure is in place | Cultural heritage awareness<br>Training records |
| Code of Conduct will include prohibiting worker interaction with cultural heritage.   | ESIA   |            | Client<br>Construction Contractor | Code of Conduct<br>Labour Management Plan                                   | Availability of Workers' Camp Management Plan and Code of Conduct   | Inspection record                               |
| If chance finds occur construction works shall be stopped immediately, and the soum Governor, the police and the relevant authorities notified; and hire professionals to identify the findings.  | ESIA   |            | Construction Contractor           | Heritage Management Plan<br>Chance Finds Procedure                          | Availability of Cultural Heritage Chance Finds Procedure, and chance finds register/reports (if applicable)   | Chance finds register                           |
| Contractor will organize training among construction workers and supervisors to raise awareness on cultural heritage.   | ESIA   |            | Construction Contractor           | Heritage Management Plan  | Availability of cultural heritage awareness training program, and training records  | Cultural heritage awareness training records    |

| Mitigation Measure   | Source | Regulation | Responsible party       | Management Plan, if applicable    | Verification method / Monitoring of Compliance  | Reporting format   |
|--|--------|------------|-------------------------|-----------------------------------|---|--------------------|
|  |        |            |                         | Training Plan                     | Check that Cultural Heritage Chance Finds Procedure is in place   |                    |
| The Contractor will fence off any areas that require protection during construction works, with access provided for locals where applicable.                             | ESIA   |            | Construction Contractor | Cultural Heritage Management Plan | Availability and content of Cultural Heritage Management Plan, and maps of the construction sites with identified accesses for locals | Inspection reports |
| The Contractor will minimise publication of details on known cultural heritage resources to prevent theft or damage to sites, unless based on the advice of specialists. | ESIA   |            | Construction Contractor | Cultural Heritage Management Plan | No damage to known cultural heritage resources  | Inspection records |

**Table 7-3. Post-construction and pre-handover environmental and social mitigation management measures**

| Mitigation Measure   | Source | Regulation   | Responsible party       | Management Plan, if applicable | Verification method / Monitoring of compliance   | Reporting format                              |
|--|--------|--|-------------------------|--------------------------------|--|---|
| <b>Rehabilitation of soils</b>   |        |  |                         |                                |  |   |
| Contractor will undertake revegetation only with native species; soum to advise. MNS 5917: 2008 (Rehabilitation of land disturbed by mining operations. General technical requirements) will guide rehabilitation. | ESIA   | Law on Plant Protection.<br><br>Law on Environmental Protection.<br>Clause 31. | Construction Contractor | Reinstatement Plan             | Availability and content of Reinstatement Plan   | Communication protocols<br>Inspection records |
| Contractor will execute site rehabilitation including all waste removal and soil restoration at all sites impacted by construction activities.   | ESIA   |  | Construction Contractor | Reinstatement Plan             | Availability of Reinstatement Plan<br>Inspection of construction sites once the construction works are completed   | Reinstatement report                          |
| Hand over the wells created during construction, if any, to local authorities in good condition. The well will be functioning at the time of hand over.  | ESIA   |  | Construction Contractor | Water Management Plan          | Inspection of well condition before transfer to local authority<br>Availability of documentation confirming that wells have been accepted by local authority | Inspection records                            |

**Table 7-4. Operation phase environmental and social mitigation management measures**

| Mitigation measure   | Source | Regulation (if applicable) | Responsible party | Management Plan, if applicable | Verification method / Monitoring of compliance  | Reporting format  |
|--|--------|----------------------------|-------------------|--------------------------------|---|---|
| <b>Biodiversity, Flora and Fauna</b>   |        |                            |                   |                                |   |   |
| Provision of best-design bird flight diverters on conductors and earth wires along the entire route, following manufactures recommendations for spacing. This should cover the following locations: <ul style="list-style-type: none"> <li>Oriental plover display sites (VP02, VP06, VP14-VP17);</li> <li>Pallas sandgrouse habitat areas (VP5-VP7, VP8, VP10-VP12, VP15-18, VP20, VP22);</li> <li>Saker falcon sensitive sites (VP6, VP11-12, VP18);</li> <li>Steppe eagle sensitive sites (VP10-11, VP14, VP16-17);</li> <li>Cinereous vulture sensitive sites (VP6, VP10, VP12, VP14, VP16); and</li> <li>Swan goose sensitive sites (VP8).</li> </ul> | ESIA   |                            | NPTG              |                                | Availability of: Spill Prevention and Response Plan and related training program<br>Check availability of the spill kits      | Training records<br>Inspection records                          |
| Monitor Saker falcon and Steppe eagle species nests on the powerline towers and construct alternative structures for nesting if the nests on the OHTL become a collision risk issue.   | ESIA   |                            | NPTG              |                                | Installation of bird flight diverters for the Saker Falcon and Steppe eagle sensitive sites as confirmed by the Autumn survey | Autumn Bird survey<br>Inspection records                        |
| Engage with qualified bird specialists to undertake routine monitoring of powerlines for bird carcasses and to design alternative adaptive management measures to increase bird diverter placement or other measures in areas with high mortality rates.   | ESIA   |                            | NPTG              | O&M ESMMP                      | Appointment of Bird Expert<br>Verify monitoring reports   | Inspection records  |
| <b>Noise and Vibration</b>   |        |                            |                   |                                |   |   |
| Design of the substation and OHTL to GIP. Equipment should be chosen to comply with national and international WHO noise regulations. Any generators should be fitted with silencers. Other noise emitting equipment should be fitted with silencers or housed appropriately to avoid excessive noise emissions.   | ESIA   |                            | NPTG              |                                | Verify noise sources documentation  | Inspection records  |
| If noise complaints are received in relation to the substations, the noise level caused by the transformers should be verified and, if necessary, mitigated e.g. through noise control at source or at the NSR.  | ESIA   |                            | NPTG              | O&M ESMMP                      | Number of community grievances<br>Acoustic Study if needed  | Inspection of the Acoustic Study<br>Grievance form and register |
| Equipment should be kept well maintained and in good working order.  | ESIA   |                            | NPTG              | O&M ESMMP                      | Periodic verification of the working conditions of the equipment in the substation  | Inspection records  |
| <b>Waste Management</b>  |        |                            |                   |                                |   |   |



| Mitigation measure   | Source | Regulation (if applicable) | Responsible party | Management Plan, if applicable | Verification method / Monitoring of compliance   | Reporting format                    |
|--|--------|----------------------------|-------------------|--------------------------------|--|-------------------------------------|
| Development and implementation of an O&M Plan that addresses waste management from maintenance activities.   | ESIA   |                            | NPTG              | Waste Management in O&M ESMMP  | Availability of O&M ESMMP<br>Inspection of waste management along road                       | Inspection records<br>Waste records |
| Provision of regular training for staff on recycling and waste reduction and the practices necessary to minimise waste and facilitate good practice waste management.  | ESIA   |                            | NPTG              | Training Plan                  | Availability of Training Plan<br>Training Register   | Inspection records                  |
| Provision of a dedicated area for the storage of hazardous waste arisings.   | ESIA   | Mongolian Law on Waste     | NPTG              | O&M ESMMP                      | Twice yearly check the availability of waste collection bins and signage at public locations | Inspection records                  |
| Recycling of vehicle and plant maintenance waste i.e. oil or grease contaminated filters and recycling or re-use of empty chemical containers or bags.   | ESIA   | Mongolian Law on Waste     | NPTG              | O&M ESMMP                      | Twice yearly check the availability of waste collection bins and signage at public locations | Inspection records                  |
| Removal of hazardous waste by a specialist licensed company.   | ESIA   | Mongolian Law on Waste     | NPTG              | O&M ESMMP                      | Hazardous Waste Transfer Forms and Registers   | Inspection records                  |
| <b>Land Use</b>  |        |                            |                   |                                |  |                                     |
| <b>Engage with MRAM and the mining licence holders.</b>  | ESIA   |                            | NPTG              | Project SEP / RAP/ LRP         | Availability of agreements with mining concessionaires.<br>Minutes of meeting                | Inspection records                  |
| <b>Economy, Employment and Livelihoods</b>   |        |                            |                   |                                |  |                                     |
| Use of local supplies and contractors for O&M activities.  | ESIA   |                            | NPTG              | O&M ESMMP                      | Check data on supplies and contractors   | Inspection records                  |
| Recruiting from the local community where feasible.  | ESIA   |                            | NPTG              | O&M ESMMP                      | Check data on employee origin  | Inspection records                  |
| <b>Community Health, Safety and Security</b>   |        |                            |                   |                                |  |                                     |
| Appropriate design and ongoing maintenance to ensure reduction in EMFs – where necessary additional measures could be employed such as shielding with specific metal alloys; modifications to size, spacing and configuration of towers to address any localised issues. | ESIA   |                            | NPTG              | O&M ESMMP                      | Check schedule and results of O&M works<br>Availability of additional measures, if any.      | Inspection records                  |
| Appropriate design and ongoing maintenance to reduce health and safety risks e.g. adequately earthed and earthing cable, signs,  | ESIA   |                            | NPTG              | O&M ESMMP                      | Availability of Community Health and Safety Plan   | Inspection records                  |

| Mitigation measure   | Source | Regulation (if applicable) | Responsible party     | Management Plan, if applicable | Verification method / Monitoring of compliance   | Reporting format            |
|--|--------|----------------------------|-----------------------|--------------------------------|--|-----------------------------|
| fencing and other barriers such as anti-climb barriers of barbed wire will be used.  |        |                            |                       |                                | Check schedule and results of O&M works  |                             |
| Capacity building and awareness campaigns will be undertaken by NPTG to enable local communities to be aware of the risks associated with higher voltage lines. Education/public outreach in the neighbouring communities to inform and refresh local people's knowledge regarding restriction zone requirements.  | ESIA   |                            | NPTG/ O&M contractors | O&M ESMMP<br>Project SEP       | Availability of Community Health and Safety Plan / Project SEP and meeting notes<br><br>Evidence of communication/ exchange of information | Inspection records          |
| The substations will be made secure at all times and unauthorized persons will be kept away from the premises. Security officers shall man the substations at all times to ensure security and report all incidents that might be out of the ordinary for prompt action.   | ESIA   |                            | NPTG/ O&M contractors | O&M ESMMP                      | Availability of Security Plan<br><br>Check schedule and results of O&M works   | Inspection records          |
| Appropriate firefighting facilities will be available at the substation.   | ESIA   |                            | NPTG                  | O&M ESMMP                      | Availability of Security Plan<br><br>Check schedule and results of O&M works   | Inspection records          |
| The use of fire within the RoW will not permitted.   | ESIA   |                            | NPTG/ O&M contractors | O&M ESMMP                      | Availability of Security Plan  | Inspection records          |
| Design of the OHTL to ensure that EMF levels are within accepted guidelines for occupational and human health exposure.  | ESIA   |                            | NPTG                  | O&M ESMMP                      | Availability of Community Health and Safety and Workers' H&S Plans<br><br>Check results of monitoring plan                                 | Inspection records          |
| If considered necessary (e.g. complaints), NPTG model the levels of exposure given the boundary conditions e.g. geometry of the site and conductors, current flows. A bi-dimensional model would suffice in most of the cases. In the case of the presence of other parallel or crossing lines, or if the line is deviating from a straight line, in the vicinity of the receptor, a three-dimensional model may be required | ESIA   |                            | NPTG                  | O&M ESMMP                      | Availability of O&M ESMMP<br><br>Check results of additional studies, if any.  | Inspection records          |
| <b>Labour and Working Conditions including Occupational Health and Safety</b>  |        |                            |                       |                                |  |                             |
| A Labour Plan and HR policy for the O&M phase should be developed by the NPTG within the O&M ESMMP. Where possible, opportunities for local communities and service should be sought.  | ESIA   |                            | NPTG                  | O&M ESMMP                      | Check the availability of the HR policy and Labour Management Plan   | Inspection records          |
| Presence of a Labour Grievance Mechanism   | ESIA   |                            | NPTG/ O&M contractors | Project SEP                    | Check implementation of labour grievance mechanism   | Grievance form and register |
| An O&M ESMMS should be prepared by NPTG to manage worker risk. This should include necessary provisions to ensure that the   | ESIA   |                            | NPTG                  | O&M ESMMP                      | Availability of O&M ESMMP incorporating OHS and emergency preparedness and response  | Inspection records          |

| Mitigation measure   | Source | Regulation (if applicable) | Responsible party | Management Plan, if applicable           | Verification method / Monitoring of compliance               | Reporting format   |
|--|--------|----------------------------|-------------------|--|--|--------------------|
| risk of exposure of the workers, especially at the substations, is assessed, managed and monitored.  |        |                            |                   |  |  |                    |
| An Emergency Preparedness and Response Plan should be developed by NPTG.   | ESIA   |                            | NPTG              | Emergency Preparedness and Response Plan | Availability of the Emergency Preparedness and Response Plan | Inspection records |
| Functional testing, commissioning, performance, testing and reliability testing of the complete Project should be undertaken.  | ESIA   |                            | NPTG              | O&M ESMMP                                | Availability of O&M ESMMP                                    | Inspection records |
| NPTG should ensure that all staff are adequately trained. PPE will be provided for the workforce. Staff working near noisy machinery and power tools will be provided with earmuffs to protect them against noise-induced hearing loss damage. | ESIA   |                            | NPTG              | O&M ESMMP                                | Availability of Labour Management Plan within O&M ESMMP      | Inspection records |
| Regular maintenance of equipment will reduce the risk of injury from failing equipment.  | ESIA   |                            | NPTG              | OHS Plan                                 | Availability of O&M ESMMP incorporating OHS Plan             | Inspection records |
| Adequate earthing of equipment to prevent shocks and malfunctioning of protection equipment.   | ESIA   |                            | NPTG              | OHS Plan                                 | Availability of O&M ESMMP incorporating OHS Plan             | Inspection records |
| Provision of a fire detection and protection system to international standards.  | ESIA   |                            | NPTG              | OHS Plan                                 | Availability of O&M ESMMP incorporating OHS Plan             | Inspection records |
| In line with Mongolia Regulations, regular inspection of the RoW to ensure non-permitted land uses are not occurring.  | ESIA   |                            | NPTG              | O&M ESMMP                                | Availability of O&M ESMMP                                    | Inspection records |
| Design of overhead line to ensure that EMF levels are within accepted guidelines for occupational exposure.  | ESIA   |                            | NPTG              | OHS Plan                                 | Availability of O&M ESMMP incorporating OHS Plan             | Inspection records |
| NPTG should implement the necessary provisions to ensure that the risk of exposure of the workers, especially at the substations, will be assessed and monitored.  | ESIA   |                            | NPTG              | OHS Plan                                 | Availability of O&M ESMMP incorporating OHS Plan             | Inspection records |

## 8. Environmental Monitoring

### 8.1. Introduction

The Client and Construction Contractor will establish an Environmental and Social Monitoring Programme, for the O&M and construction phases, respectively. Monitoring of Project activities will be undertaken in order to:

- Ensure the Project is implemented in compliance with national requirements and EBRD PRs;
- Monitor changes to baseline conditions during construction;
- Assess the efficiency of mitigation actions;
- Provide information on environmental and social performance to Lenders and permitting authorities as required; and
- Implement corrective actions, if required, if proposed mitigation measures are unable to eliminate/reduce potential construction related impacts.

### 8.2. Monitoring Plan

The minimum monitoring requirements for monitoring are defined in this ESMMP. The detailed monitoring requirements for construction and the construction monitoring plan, including the technical specifications and targets, will be incorporated into Construction ESMMP prepared by the Construction Contractor.

The construction monitoring plan will include, but will not be limited, to the following:

- Air quality; monitor where necessary dust concentration (PM10, PM2.5);
- Noise; where necessary, monitoring of noise level at noise sensitive receptors and the noise level of the plants and machinery;
- Biodiversity, monitoring the effectiveness of the mitigation measures and revise if necessary, monitor flora and fauna, illegal wildlife products being sold in association with Project personnel;
- Groundwater; water use / extraction from any permitted groundwater wells used including heavy metals testing;
- Waste; inspection between containers to monitor leaks or spills; and
- Soil Quality; soil analysis for suspect contaminated soil.

The detailed monitoring requirements for operation and the operation monitoring plan including the technical specifications and the targets will be incorporated into O&M ESMMP prepared by NPTG.

The operation monitoring plan will include, but will not be limited, to the following:

- Biodiversity; bird specialists will undertake routine monitoring of powerlines for bird carcasses and will monitor Saker Falcon and Steppe Eagle species nests on the powerline towers;
- Exposure of the workers to EMFs, especially at the substations;
- Noise levels at noise sensitive receptors situated in the vicinity of the substations, if complaints are received; and
- Biodiversity, monitoring the effectiveness of the reinstatement measures.

## 9. Training and Awareness

### 9.1. Introduction

A key component of the success of the ESMMP depends on effective capacity building and the training of all Project employees, including Contractors and sub-contractors.

### 9.2. Code of Conduct

A Project Code of Conduct will be prepared by the Client. This will be applicable to all Contractors, Subcontractors and site visitors.

### 9.3. Construction Phase Training

#### 9.3.1. Training Plan

Construction employee ESMS/ESMMP training sessions will be organised in accordance with a Training Plan developed by the Construction Contractor and approved by the Client. The Plan will outline training requirements, topics and areas of capacity building, and the staff who require on the job training. The initial training plan will be prepared and approved prior to the commencement of construction works. Training will be reviewed monthly, annually and on a need basis.

During construction, the Contractor ESMS Manager will update and implement the Training Plan. Training records will be maintained for each employee, to provide evidence for auditing/inspection purposes.

#### 9.3.2. Induction Training

The Construction Contractor will ensure that all workers have been inducted. All new employees will receive site induction to appraise them of ESMS aspects on site, the basic rules of work on site and the use of PPE and the prevention of injury to fellow employees.

Induction will also cover the following topics:

- ESMS Policies
- Project Standards
- Code of Conduct, including GBVH and prohibition of use of herder wells
- Environmental and social risks and impacts of Project activities
- ESMS instructions and ESMMP, including but not limited to:
  - requirement to minimise noise nuisance
  - sensitive biodiversity species and Project commitments.
  - measure to conserve water during construction and within any work camps required
  - penalties for breaching wildlife commitments and statutory regulations
  - bird species hotspots location and measures to be adopted within the hotspots
  - training on waste management to improve knowledge and awareness on reducing waste generation, waste types and their classification, and project waste management rules
  - fuel and chemicals handling and how to use spill kits
- Emergency Preparedness and Response Plan

After Induction, Project personnel will receive an Employee Handbook that contains information on employee training, emergency telephone numbers and basis ESMS requirements.

Personnel required to visit the construction site must also complete the site induction. Generic induction will consist of basic hazard awareness, safe work practices, and emergency procedures for fire, evacuation, etc.

### 9.3.3. Project Training

#### 9.3.3.1. ESMS and ESMMP

All those involved in the management and implementation of any aspect of the ESMS and Construction ESMMPs will be adequately trained. Training should include:

- Why the environment needs to be protected and conserved
- How construction activities can impact on the environment
- What can be done to mitigate such impacts
- Awareness of the ESMMP
- Awareness of the emergency preparedness and response plans
- Social responsibility during construction e.g. being considerate to local residents

#### 9.3.3.2. Job-specific

Prior to commencement of new assignments all workers will receive adequate training and information covering:

- Knowledge of materials, equipment, and tools
- Potential risks to health
- Precautions to prevent exposure to potential health risks
- Hygiene requirements
- Use of task specific PPE
- Appropriate response to operational incidents and accidents

Where necessary, training will be provided for employees carrying out specific job functions to educate and train them on topics, such as PPE use, safe driving, working in confined spaces, handling hazardous materials, etc.

#### 9.3.3.3. Toolbox Talks

Toolbox talks will be held as necessary to address specific issues before commencing work. For specific situations, where necessary external training experts will be invited to provide technical support.

## 9.4. Operation Phase

The requirements for training during O&M will be determined by the NPTG and included in the O&M ESMMP.



# 10. Monitoring of Compliance, Auditing and Reporting

## 10.1. Requirements for Compliance Monitoring

All controls, inspections, audits and reporting will be undertaken in accordance with the ESMS requirements and procedures. These requirements will be reflected in the Construction ESMMP and the O&M ESMMP.

## 10.2. Inspections and Internal Audits

During construction, site inspection/monitoring will be undertaken by the Construction Contractor to ensure that works are being undertaken in conformance with the requirements of the ESMS and Construction ESMMP. This will include internal audits conducted by the Contractor ESMS Manager according to the Construction ESMMP to assess its effectiveness and relevance as follows:

- A bi-annual and full annual review
- Following a reportable incident, or a significant non-compliance
- Following an addition, up-date or change order to the ESMMP

During operation, site inspection/monitoring will be undertaken by NPTG to ensure the Project is operated and maintained in conformance with the requirements of the ESMS and O&M ESMMP.

Construction and O&M inspections will be undertaken on a daily, weekly and monthly basis by the roles identified in the Construction ESMMP and by the O&M ESMMP, and will be recorded using Checklists, Forms and Registers. Any non-conformances will be recorded, and appropriate corrective measures undertaken. The modalities, roles and responsibilities of inspections and internal audits and the procedures to manage accidents, incidents and non-conformances during the operations will be defined in the relevant ESMMP.

## 10.3. External Audit Reporting requirements

During construction the Construction Contractor will report to the Client / PIU. The format for reporting will be agreed between the Client and Construction Contractor, however Table 10-1 provides an overview of the ESMS reporting, responsible party and frequency of submissions. The reporting format will be reviewed at least bi-annually.

**Table 10-1. ESMS reporting requirements**

| Type of report             | Report   | Responsibility                       | Frequency             | Submit to |
|----------------------------|--|--------------------------------------|-----------------------|-----------|
| <b>Checklists</b>          | Inspection records   | Construction Contractor ESMS Manager | As required           | Client    |
| <b>Forms and registers</b> | Waste management and disposal documentation                | Construction Contractor ESMS Manager | As required           | Client    |
|                            | Non-conformances/ Accidents/ Incidents Forms and Registers | Construction Contractor ESMS Manager | As required           | Client    |
|                            | Chance Finds Form  | Construction Contractor ESMS Manager | As required           | Client    |
|                            | Community Grievance Forms and Registers                    | Construction Contractor ESMS Manager | As required / Monthly | Client    |
|                            | Labour Grievance Forms and Registers                       | Construction Contractor ESMS Manager | As required           | Client    |
| <b>Project Reports</b>     | Pre-Construction Report                                    | Construction Contractor ESMS Manager | Once                  | Client    |

| Type of report | Report                               | Responsibility                       | Frequency            | Submit to |
|----------------|--------------------------------------|--------------------------------------|----------------------|-----------|
|                | Project Performance Report           | Construction Contractor ESMS Manager | Monthly or as agreed | Client    |
|                | Post-construction Restoration Report | Construction Contractor ESMS Manager | Once                 | Client    |
|                | Project Performance Report to EBRD   | NPTG ESMS Manager                    | Monthly or as agreed | EBRD      |

## 10.4. Accidents, Incidents and Non-conformances

During construction, the Construction Contractor will implement a Non-Conformance and Corrective Action Procedure to ensure that all non-conformances are identified and recorded, and that appropriate corrective action is taken to rectify all identified non-conformances, preventing their reoccurrence in the future.

During construction, the Construction Contractor will also implement an Accident, Incident and Near Miss Procedure to ensure that environmental incidences and health and safety incidences and accidents, including near-misses, are identified and recorded, and that appropriate corrective action is taken to prevent reoccurrence in the future.

During operation, the NPTG will follow a similar procedure, in accordance with their existing internal practices and as agreed with EBRD.

The general procedure to be followed is outlined below.

### 10.4.1. Non-conformance procedures

A non-conformance is a deviation from:

- Project policies and procedures;
- Legal requirements;
- Project permits/licenses; and
- Project requirements as set out in the ESMMP.

Non-conformances may be identified through the following activities:

- Daily/weekly/monthly site inspections/monitoring, and recorded in the Checklists/Inspection records;
- Third party audit findings;
- Accidents, Incidents and Near-misses;
- Meetings notes;
- Performance reviews; and
- Grievances (internal or external).

Where necessary, a Corrective Action will be identified to address a Non-conformance. The Corrective Action can be a remedial action to address the immediate problem and, where necessary, further action to understand the root cause of the problem and identify further action required to address the root cause.

All Non-conformances and Corrective Actions will be reported in a Non-conformance and Corrective Action Form and Register.

### 10.4.2. Accident/Incident procedures

All accidents and incidents (including accidents, spills, work-related illnesses, damages, near misses, etc) will be reported in the Accident and Incidences Form and Register.

The following procedure will be followed:

- If an accident/incident/near miss occurs, the Site Manager must be alerted immediately, and immediate action must be taken to minimise the impact or the potential impact. Depending on the nature of the accident or incident, the following will need to be employed:
  - Emergency preparedness and response plan and procedure

- Spill emergency response procedure
- Once the immediate accident/incident/near miss has been addressed, the Site Manager must advise the ESMS Manager.
- The Client should also be informed of the accident/incident, in accordance with procedures agreed within the Construction Contractor.
- The Site Manager will complete as far as possible an Accident, Incident and Near Miss Form, which will be submitted to the ESMS Manager.
- The ESMS Manager will review and complete the Form.
- The ESMS Manager will maintain a Register of all Accidents, Incidents and Near Misses.
- The ESMS Manager and Site Manager and other nominated persons as necessary, will determine what further action or investigation is required, and record this on the Accident, Incident and Near Miss Form.
- Subsequent investigation and verification activities will be undertaken by the nominated person(s) to determine the root cause(s) of the incident or accident.
- Once the cause is identified, the corrective action is to be documented in a Corrective Action Form. The Corrective Action Form will identify the corrective action required and the person responsible for delivering the action, together with an agreed timeframe for implementation. The Corrective Action Form reference number is to be added to the Accident, Incident and Near Miss Form by the ESMS Manager.
- Following implementation of the corrective action, a review of the effectiveness of the corrective action will be undertaken by the ESMS Manager or nominated representative.
- Where investigation indicates that the accident/incident/near miss arose as a result of a non-conformance, this will also be logged by the ESMS Manager in the Non-Conformance and Corrective Action Register.
- On the successful closure of the implementation of corrective actions, the Corrective Action Form will be signed off by the ESMS Manager and Site Manager, and the updated to "action closed". The Accident, Incident and Near Miss Register and, as necessary, Non-Conformance and Corrective Action Register will be updated by the ESMS Manager.

For any serious accidents or incidents, the Construction Contractor will complete an Accident Report within two weeks for submission to the Client.

# 11. Implementation Schedule

Table 11-1 provides a summary of the main actions and implementation schedule for the development of the ESMMP by the Client and Construction Contractor.

**Table 11-1. Summary of main actions for implementation**

| Action  | Responsibility                   | Time                                    |
|---|----------------------------------|---|
| Set up the PIU and appoint the <b>Client</b> ESMS Lead  | Client / EBRD                    | Prior to construction                   |
| Develop and implement the Project ESMS. This will include: <ul style="list-style-type: none"> <li>• Policies</li> <li>• Project ESMMP</li> <li>• Project Management Plans</li> <li>• Legal &amp; Permit register</li> <li>• Project SEP</li> <li>• Project RAP/LRP</li> <li>• Roles and roles and responsibilities</li> <li>• Project schedule/programme</li> </ul> | Client                           | Prior to construction                   |
| Undertake pre-construction surveys – final siting of pylons and temporary roads, and identification of wells and structures to be relocated   | Client / Construction Contractor | Prior to construction                   |
| Prepare RAP/LRP, if required  | Client                           | Prior to construction                   |
| Undertake pre-construction surveys – archaeology and ecology  | Construction Contractor          | Prior to construction                   |
| Implement Project SEP   | Client                           | Prior to and during construction        |
| Appoint the Construction ESMS Manager and ESMS team   | Construction Contractor          | Prior to construction                   |
| Undertake pre-construction surveys – archaeology and ecology  | Construction Contractor          | Prior to construction                   |
| Prepare pre-construction report   | Construction Contractor          | Prior to construction                   |
| Develop Construction ESMMP  | Construction Contractor          | Prior to construction                   |
| Develop Training Plan   | Construction Contractor          | Prior to construction                   |
| Prepare pre-construction report   | Construction Contractor          | Prior to construction                   |
| Prepare Construction SEP  | Construction Contractor          | Prior to construction                   |
| Maintain permit register and obtain permits   | Construction Contractor          | Prior to construction                   |
| Implement Construction ESMMP  | Construction Contractor          | During construction                     |
| Implement Construction SEP  | Construction Contractor          | During construction                     |
| Implement Training Plan   | Construction Contractor          | During construction                     |
| Inspections and monitoring  | Construction Contractor          | During construction                     |
| Construction performance reporting  | Contractor to Client             | During construction                     |
|   | Client to EBRD                   | During construction                     |
| Post-construction rehabilitation and Reinstatement Report   | Construction Contractor          | Post-construction and prior to handover |
| Develop O&M ESMMP   | NPTG                             | Prior to operation                      |
| Implement Project O&M SEP   | NPTG                             | During operation                        |
| Implement O&M Training Plan   | NPTG                             | During operation                        |
| Implement O&M ESMMP   | NPTG                             | During operation                        |
| O&M performance reporting   | NPTG to EBRD                     | During operation                        |



