

SECTION A: INTRODUCTION AND BACKGROUND

CHAPTER A3: METHODOLOGY

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3. ESIA METHODOLOGY

3.1 INTRODUCTION

This Chapter of the Environmental and Social Impact Assessment (ESIA) sets out the overall approach to the preparation of the ESIA of the Oyu Tolgoi copper and gold Project, Mongolia. The Chapter presents the background to the ESIA, the legal and institutional frameworks for ESIA preparation and the approach adopted in the selection of impact assessment criteria. The Chapter also summarises the key stages in the preparation of the ESIA, including Project scoping, public consultation and disclosure activities.

3.2 ESIA APPROACH

The Oyu Tolgoi ESIA builds upon an extensive body of studies, reports and Detailed Environmental Impact Assessments (DEIAs) to meet Mongolian national requirements that have been prepared for Project design and development purposes and for Mongolian approvals under the *Environmental Protection Law (1995)*, the *Law on Environmental Impact Assessment (1998 and amended in 2001)* and the *Minerals Law (2006)*. (Details of these laws are provided in *Chapter A2: Policy and Legal Framework* of this ESIA.) These initial DEIAs were prepared over a 6 year period between 2002 and 2008 on behalf of the Project by the Mongolian consultancy firm EcoTrade LLC.

The work conducted for the DEIAs has been utilised in the development of this ESIA. Numerous supplementary studies have also been undertaken, in recognition of the continuously evolving Project design. The original DEIAs provide baseline information for both social and environmental issues, and for this ESIA these have been updated with more recent monitoring and survey data and additional social analysis completed since the original DEIAs were prepared, principally through the commissioning of a Socio-Economic Baseline Study¹ and the preparation of a Social Impact Assessment for the Oyu Tolgoi Project².

The original DEIAs were prepared in accordance with Mongolian Government requirements that the impact assessment for the Project be split into separate components to facilitate technical review. Following submission and approval of the initial DEIAs the Mongolian Government has requested that an updated combined ESIA (this document) be prepared by Oyu Tolgoi whereby the discussion of impacts and mitigation measures is Project-wide, reflecting the latest project design.

The format and content of the original DEIAs were in accordance with Mongolian standards. While the DEIAs were prepared taking account of World Bank and IFC guidelines, they were not intended to comprehensively address overarching IFI policies such as the IFC Policy on Social and Environmental Sustainability, or the EBRD Environmental and Social Policy. For example, the DEIAs did not address social and community issues in a comprehensive manner. Hence the current ESIA has been undertaken to address social issues, to respond to Mongolian government (legal) requirements and to comply with current IFI good practice.

This ESIA has been prepared as a synthesis document that brings together applicable parts of the previous DEIAs, the Project SIA and other studies and activities that have been prepared and undertaken by and for the Oyu Tolgoi Project. Studies that have been previously completed are used and presented within the ESIA and consultation and engagement processes are described and presented to show alignment with international good practice.

Studies that have been previously completed are referenced or presented within the ESIA as appropriate. In addition, consultation and stakeholder engagement processes are described and presented in alignment with international good practice and lender requirements.

3.2.1 Previous DEIAs Undertaken for the Oyu Tolgoi Project

Table 3.1 below provides a summary of the previous DEIAs prepared for the Oyu Tolgoi Project.

¹ Oyu Tolgoi Project Social, Economic and Environmental Subset, Final Report, Centre for Policy Research and Population Training and Research Centre, Ulaanbaatar, Mongolia. September 2009

² Oyu Tolgoi Socio-Economic Impact Assessment, Final Report, Centre for Policy Research and Population Training and Research Centre, Ulaanbaatar, Mongolia. September 2009

Table 3.1: Previous DEIA Studies for the Oyu Tolgoi Project

EIA Study Title	Description	Date	Status
Oyu Tolgoi Project Environmental Baseline Study	This study covers geography, geology, hydrology, hydrogeology, soil, climate, air quality, flora and fauna, the socio-economic status and infrastructure of the Oyu Tolgoi Project site and its surrounding areas.	Nov 2002	Submitted Nov 2002 as DEIA. Screening approval not required for baseline study
Oyu Tolgoi Project EIA Volume I: Transport and Infrastructure Corridor from Oyu Tolgoi to Gashuun Sukhait	EIA of the original road and power line proposal from Gashuun Sukhait (GS) to Oyu Tolgoi via the western route. See <i>Chapter A5 Figure 5.6</i> . Provides approval for access through the South Gobi Strictly Protected Area (SGSPA).	Apr 2004	Approved May 2004
Supplementary EIA Volume I: for Route Changes to the Oyu Tolgoi to Gashuun Sukhait Transport Corridor	Assessment of the revised Eastern route to GS and includes an assessment of existing environmental damage caused to the western route from coal traffic. See <i>Chapter A5 Figure 5.6</i> .	Dec 2006	Approved March 2007
Oyu Tolgoi Project EIA Volume II: Water Supply from the Gunii Hooloi (GH) and Galbyn Gobi (GG) Groundwater Aquifer Areas	Provides an evaluation of the proposed aquifers for the provision of a sustainable water supply to the Oyu Tolgoi Project.	Jun 2005	Approved September 2005
Supplementary EIA Volume II: Supplementary EIA of GH and GG Groundwater Aquifer Areas	Provides an update of the approved EIA Volume II from 2005. Updated assessment of potential impacts and risks, and upgrade of groundwater monitoring in GH area reflecting higher water demand.	Dec 2010	Initial Screening by MNET in Dec 2009. Final review and approval by the Water Authority and MNET in March 2011.
Supplementary EIA Volume II: Supplementary EIA for GH bore field pipelines and associated infrastructure.	The report was updated further based on an engineering report of Dec 2008. The report covers pipelines, wells, pumps, ponds, lagoon, power supply and access roads from the GH Borefield to the Oyu Tolgoi site.	Dec 2009	Initial draft 2008. Updated Dec 2009. Approved Mar 2010
Oyu Tolgoi Project Volume III: Oyu Tolgoi Mining and Processing Facilities	EIA of the open pits, underground, and concentrator, tailings, and all facilities and support infrastructure located within the Oyu Tolgoi Mine Licence Area. The assessment was largely based on the 2005 Integrated Development Plan (IDP), but reflected the general permitting layout of May 2006. The maximum production rate was assumed to be 85,000 tpd.	May 2006	Approved December 2007
Oyu Tolgoi Project Volume IV: Coal Fired Steam Power Plant	EIA documentation drafted for a 3x100 MW coal fired power plant in 2006.	2006	Draft Technical Summary & DEIA completed but not submitted
Oyu Tolgoi Project Volume V: Domestic Airport Relocation.	The Project includes the construction of a temporary gravel Airstrip 10 km north of the Oyu Tolgoi Mine Licence Area with 2000 m runway, taxiway, safety end-strip, apron, control tower, passenger terminal, car parking, 15 x 15 m waiting hall, illumination of runway, electric power that is supplied by 40 kVA power generator, surface water drainage system and fence. This EIA covers the new airport construction and operation. This facility is a temporary facility and will be replaced by the Permanent Airport.	Jun 2007	Approved September 2007
Environmental Impact Assessment for the Permanent Airport	EIA for the construction and operation of the Permanent Airport.	2011	Approved 2011
Environmental Impact Assessment for the Undai River Diversion	EIA for the diversion of the Undai River	2011	Awaiting approval by MNET (as of January 2012)

Additional environmental studies, which relate to specific components of the Project and which have not required a full-scale DEIA, have been undertaken to achieve regulatory approvals. These are summarised in the table below:

Table 3.2: Additional Environmental Approvals Studies and Environmental Impact Assessments Completed for the Oyu Tolgoi Project

Project EIA Component	Description	Date	Status
Petrovis Temporary Fuel Station Facility at Oyu Tolgoi site,	Completed for the fuel facility built in 2004 within the licence area	2005	Approved 2005
Oyu Tolgoi Fuel Depot and Fuel station	The fuel station expanded in 2008 and a new fuel depot was constructed. The fuel station has 2.0 ha area, 4 half-concealed tanks of 25 m ³ capacity for A-92, A-80 fuel type, 10 tanks of 50 m ³ capacity for diesel and 2 dispensers.	Jan 2010	Submitted to the MNET on 18 Feb 2010 and approved 13 Sept 2010.
Shaft 1	EIA of the shaft, head frame facilities, waste rock and water disposal.	2005	Approved June 2005
Shaft 2	EIA of the shaft, head frame facilities, waste rock and water disposal.	2006	Approved Dec. 2007
Waste Water Treatment Plant	Supplementary documentation for the construction camp waste water treatment plant with a 4000 person equivalent capacity.	Feb. 2007	Approved May 2007
Quarry Batch Plant and Quarry	Assessment of the existing hard rock quarry, concrete batching plant and crusher located at the northern boundary of the Oyu Tolgoi Licence Area.	March 2007	Approved in April 2007
20 MW Diesel Power Plant	The assessment included the initial development of 6 x 2 MW Diesel Power Station (DPS) followed by a stage two addition of 4 x 2 MW diesel generators to the DPS.	Jul 2007	Approved Sept. 2007
Chemicals	Covers the importation and use of chemicals for construction and development.	Apr 2008	Approved April 2008.

3.2.2 Previous Socio-Economic Studies Undertaken for the Oyu Tolgoi Project

Socio-economic aspects are covered in the original Mongolian DEIA process and in this current ESIA this analysis has been extended to draw further on the significant body of reports, surveys and studies held by the Community and Social Relations Department (CSR D) of Oyu Tolgoi. Key studies are listed below and a more comprehensive list is provided in Volume II:

- Oyu Tolgoi Housing Options Analysis, Taktics4, November 2007;
- Oyu Tolgoi Influx Risk Assessment, Barclay & Associates, October 2007;
- Oyu Tolgoi Project Social, Economic and Environmental Subset. Final Report, Centre for Policy Research and Population Training and Research Centre, Ulaanbaatar, Mongolia. September 2009;
- Oyu Tolgoi Social Impact Assessment, Final Report, Centre for Policy Research and Population Training and Research Centre, Ulaanbaatar, Mongolia. September 2009;
- CRSD Small Scale Study of Herders' Customary Water Arrangement conducted within Gunii Khooloi area, Bayan bagh, Khanbogd soum, Omnogovi aimag; July – September 2008;
- CRSD Assessment on current condition of pastureland and water sufficiency in Gunii Hooloi area – undertaken to assess the herders' request to use the Project's Gunii Hooloi boreholes; July 2009; and
- CRSD 5 year Social and Economic Management Plan, 2010.

3.3 ESIA REQUIREMENTS

The following sections provide an overview of Mongolian and international requirements related to the requirement for environmental impact assessment.

3.3.1 Requirements of Mongolian Law

The principal Mongolian laws relating to environmental impact assessment are:

- Law of Mongolia on Environmental Impact Assessment dated 22 January 1998 and amended on 22 November 2001 ('EIA Law'); and
- Minerals Law dated 8 July 2006 ('Minerals Law').

The EIA law sets out a process for conducting a Detailed Environmental Impact Assessment (DEIA) for new projects and the expansion of existing projects. The EIA law does not require social impacts to be considered (although appropriate amendments to incorporate such requirements may be made in the near future). Under the EIA Law, proposed new projects and project expansions are subject to an initial screening process by the Ministry of Nature Environment and Tourism (MNET) following submission of a project description and technical and economic feasibility study. This process will result in one of the following outcomes:

- The Project may be implemented without the need for a DEIA;
- The Project may be implemented pursuant to specific conditions;
- A DEIA will be required; or
- The Project may be rejected on the grounds of (i) non-conformity with legislation; (ii) adverse impacts on the environment; or (iii) insufficient information is provided.

A DEIA report must include the following components:

- Environmental baseline and indices;
- A description of the Project and alternatives;
- Recommendations for minimising and mitigating impacts on the environment and eliminating significant impacts;
- Accident risk assessment;
- Environmental protection plan;
- Environmental monitoring programme;
- Considerations of the opinions of citizens and government bodies; and
- A rehabilitation plan and consideration of cultivation of vegetation within the project area.

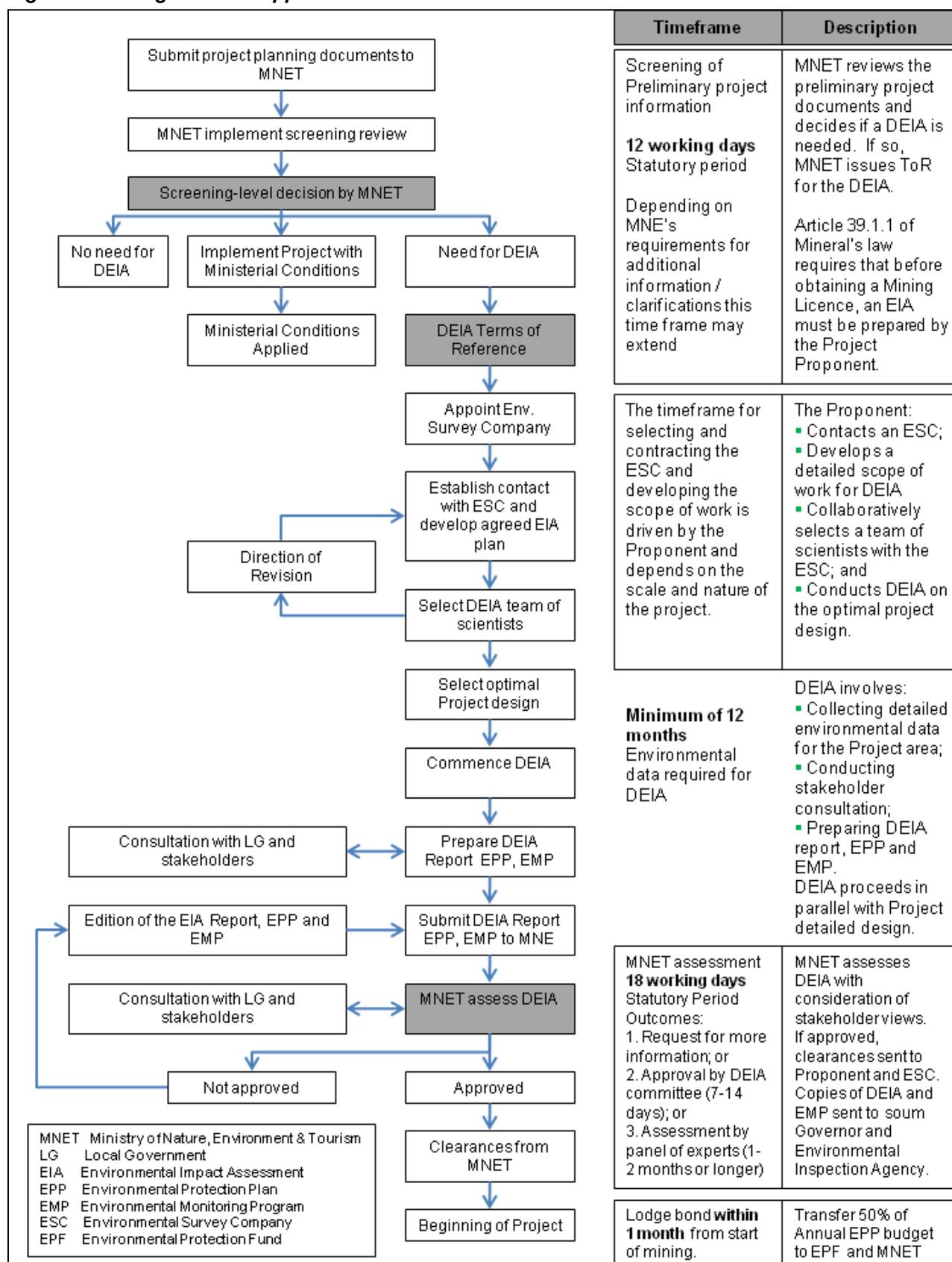
The Minerals Law specifically requires public health issues to be addressed in the DEIA and requires environmental protection plans to include measures to protect people, animals, plants, air and water from the adverse impacts of mining. More specifically, environmental protection plans must include the following:

- Measures for addressing the storage and control of toxic and potentially toxic substances;
- Measures for the protection, utilisation and conservation of surface and groundwater;
- Measures to address the construction of tailings dams and to ensure mine area safety;
- Measures dealing with the rehabilitation of the mine area; and
- Other measures as may be appropriate for the particular type of mining operation.

The environmental protection plan must also provide for monitoring and recording of all adverse environmental impacts arising from the project activity. Annual reports must be submitted to national and regional government bodies. To ensure compliance with environmental protection activities, the mine licence holder must deposit 50% of the annual environmental protection budget with MNET. If the mine licence holder fails to implement environmental protection measures, the government will use the deposited funds to implement necessary measures.

Figure 3.1 below illustrates the basic elements of the EIA approvals process in Mongolia.

Figure 3.1: Mongolian EIA Approvals Process



3.3.2 Requirements for Project Financing

The ESIA is also used to satisfy the requirements of prospective lenders to the Project in respect of social and environmental assessment. The requirements pertinent to the Project are:

- International Finance Corporation (IFC) Performance Standard 1: Social and Environmental Assessment and Management Systems;
- European Bank for Reconstruction and Development (EBRD) Performance Requirement 1; and
- Equator Principles 1, 2 & 3.

3.3.3 IFC Requirements

The IFC Policy on Social and Environmental Sustainability notes that the IFC strives for positive development outcomes in the projects that it supports. Social and environmental sustainability of projects is identified as an important component of such outcomes, which IFC expects to achieve by applying a comprehensive set of social and environmental performance standards. The first of these performance standards deals with social and environmental assessment.

PS1: Social and Environmental Assessment and Management Systems

PS1 underscores the importance of managing social and environmental performance throughout the life of a project by using a dynamic social and environmental management system. Specific objectives of this Performance Standard are:

- to identify and assess social and environment impacts, both adverse and beneficial, in the project's area of influence;
- to avoid, or where avoidance is not possible, minimise, mitigate, or compensate for adverse impacts on workers, affected communities, and the environment;
- to ensure that affected communities are appropriately engaged on issues that could potentially affect them; and
- to promote improved social and environment performance of companies through the effective use of management systems.

3.3.4 EBRD Requirements

In accordance with its 2008 Environmental and Social Policy, EBRD seeks to ensure, through its environmental and social appraisal and monitoring processes, that the projects it finances:

- are socially and environmentally sustainable;
- respect the rights of affected workers and communities; and
- are designed and operated in compliance with applicable regulatory requirements and good international practice.

To translate this objective into successful practical outcomes, EBRD has adopted a comprehensive set of Performance Requirements (PRs) covering key areas of environmental and social impacts and issues. PR 1 specifically addresses impact assessment.

PR 1: Environmental and Social Appraisal and Management

This Performance Requirement outlines the process of appraising, managing and monitoring environmental and social issues associated with a project consistent with the European Union environmental impact assessment directive (85/337/EEC as amended).

Environmental and social impacts and issues will be appraised in the context of the project's "area of influence". This comprises not only "the Project" over which the project proponent will have full control over design and management, but also support facilities or businesses (such as contractors), associated

facilities or businesses³, and areas or communities potentially affected by cumulative impacts. For these facilities, businesses, areas or communities the project proponent will maximise its influence to comply with EBRD policy requirements as far as reasonable possible.

Key elements of PR 1 include:

- To identify and assess environmental and social impacts and issues, both adverse and beneficial, associated with the project;
- To adopt measures to avoid, or where avoidance is not possible, minimise, mitigate, or offset/compensate for adverse impacts on workers, affected communities, and the environment;
- To identify and, where feasible, use opportunities to improve environmental and social performance; and
- To promote improved environmental and social performance through a dynamic process of performance monitoring and evaluation.

3.3.5 Equator Principles

Commercial lenders to the Project are likely to be signatories to the Equator Principles.

The Equator Principles (EPs) are a voluntary set of standards for determining, assessing and managing social and environmental risk in project financing.

EP 1: *Review and Categorisation* requires that a project proposed for financing be categorised based on the magnitude of potential impacts and risks in accordance with the environmental and social screening criteria of the IFC. EP 2: *Social and Environmental Assessment* requires that for category A or B projects, the applicable social and environmental impacts and risks be addressed through a Social and Environmental Assessment process. EP 3: *Applicable Social and Environmental Standards* refers to the IFC Performance Standards, which include PS1: *Social and Environmental Assessment and Management Systems*.

3.4 KEY STAGES OF THE ESIA

3.4.1 ESIA Screening

The first stage in the international ESIA process involves 'screening' or categorisation of the Project in line with the expected environmental risk (as required by Equator Principle 1 and the IFC and EBRD screening criteria). The Oyu Tolgoi Project has been categorised as Category A (i.e. is subject to a comprehensive ESIA process) and is also Category A under MNET procedures.

3.4.2 Scoping and Early Consultation

Scoping is a key element of the impact assessment process and is a requirement of IFC PS 1 and EBRD PR1. As part of the regulatory approvals process in Mongolia, the MNET required the EIA preparer for the Oyu Tolgoi Project to *"take the suggestions and ideas of local residents during the detailed environmental impact assessment and to enclose them into the report"*⁴.

Early Consultation Activities

The Project began initial consultation activities in March 2003 (shortly after the MNET screening report was issued), continuing in July and November 2003.

The March and November 2003 consultations covered stakeholder groups ranging from local communities to parliament standing committees. The consultation held in July 2003 focused on herdsmen and Khanbogd *Soum* residents. Those consulted were generally supportive of the Project.

³ Associated facilities or businesses are not funded by the EBRD as part of a project and may be separate legal entities yet whose viability and existence depend exclusively on the Project and whose goods and services are essential for the successful operation of the Project

⁴ Law on Environmental Impact Assessment dated 22nd January 1998 and amended on 22 November 2001.

Local communities made clear their interest in regular access to information, especially in relation to impacts to water, soil and pastureland, and the Company's provisions for employment, training, and community assistance. The Project committed itself to a consultation programme that would continue over the life of the Project, with the communities themselves participating in designing the consultation programme.

Oyu Tolgoi's consultation records summarize the meetings held and individuals and groups consulted. They also provide summaries of the questions and issues raised in individual consultations, public meetings and surveys, and summaries of the outcomes and actions taken or to be taken by Oyu Tolgoi.

Details of scoping activities are set out in *Chapter A6*.

Consultation Related to Scoping of the SIA

A socio-economic baseline study and impact assessment for the Project was undertaken in 2008-9 which involved significant consultation activities. Fieldwork included focus group discussions, group and individual interviews and the collection of secondary information from relevant *soum* sources, officials and annual statistics. Stakeholder engagement activities undertaken as part of the assessment included:

Focus group discussions with over 140 participants across the five *soums* in the Project Area of Influence;

Semi-structured interviews with over 70 officials and public and private service providers; and

Workshops to discuss potential impacts, issues of concern and preliminary mitigation strategies.

3.4.3 Compilation of Environmental Baseline Data

Baseline data has been collected through a combination of the following:

- Secondary data review of public sources of information, mapping and graphics sources;
- Collection of data from Project field sampling programmes and surveys, for example for surface and groundwater quality, dust measurement, fauna surveys and vegetation surveys;
- Anecdotal evidence provided through interviews both with residents in permanent housing in *soum* centres and with herders living within the Project Area of Influence;
- Specific monitoring programmes undertaken by Oyu Tolgoi in accordance with MNET requirements and in compliance with international standards; and
- Laboratory analyses.

Most recently, the following additional activities (both baseline studies and impact assessment related activities) have been undertaken as part of this ESIA:

- Re-evaluation (QA/QC) of dust modelling results;
- Continued development of the air dispersion model for emissions and dust generation within the Mining Licence Area to take account of the current plant design and layout;
- Modelling of potential climate change scenarios and their impacts on the Oyu Tolgoi Project;
- Preparation of a greenhouse gas inventory for the Project;
- A baseline noise survey taking account of the location of sensitive receptors;
- Consideration of the social and environmental baseline in the design and management of the tailings storage facility and the waste rock dump;
- Initiation of a long-term study of migratory wildlife patterns within the Project Area and potential interactions of Oyu Tolgoi; and
- Preparation of a resettlement action plan (RAP) and undertaking a household survey/completion audit to evaluate and document the effectiveness of the resettlement process.

3.4.4 Compilation of Social Baseline Data

The *Omnogovi Social, Economic and Environmental Baseline Survey* (USEBS) undertaken during 2008 was commissioned by Oyu Tolgoi and was the first such study to be undertaken in Mongolia⁵. The USEBS was prepared at *aimag* level to provide comprehensive baseline information for use by the Mongolian authorities. The results have provided an excellent database for a number of follow-up initiatives to be taken by both the *aimag* society and the Oyu Tolgoi Project.

It was recognised by the Oyu Tolgoi Project that the USEBS had covered too large an area to be suitable for use by the Project the study of direct Project impacts. Based on the USEBS, the Oyu Tolgoi Project commissioned a socio-economic impact assessment (SIA) on the Project's impact area focusing specifically on the neighbouring *soums*, namely Khanbogd, Bayan-Ovoo, Tsogttsetsii, Manlai and Dalanzadgad⁶. The USEBS was used to derive a more focused baseline study⁷ (referred to as the Oyu Tolgoi Project Social, Economic and Environmental Subset) which was used for the development of the Oyu Tolgoi SIA. The SIA report describes the anticipated socio-economic impact of mine construction and operations, as well as the key inter-relationships between socio-economic and environmental impacts and the cumulative impacts contributed by other mining projects in the Project Area of Influence.

3.4.5 Impact Categorisation and Significance

To provide a consistent approach to impact assessment, the following criteria have been used to define the significance of impacts.

- **Duration:** Short, Medium and Long Term;
- **Extent:** Highly Localised, Localised, Restricted and Widespread; and
- **Likelihood:** Highly Unlikely, Unlikely, Likely, Certain.

Impacts have been classed as either Positive or Adverse, and impacts have been classified into one of the following five categories:

- **Positive:** Advantageous or positive impact to a resource or receptor;
- **Negligible (Adverse):** Impact that is typically short term and/or highly localised and/or highly unlikely;
- **Minor (Adverse):** Impact that is typically short to medium term and/or localised and/or unlikely;
- **Moderate (Adverse):** Impact that is typically medium term and/or restricted and/or likely; and
- **Major (Adverse):** Impact that is long term and/or widespread and/or likely to certain. In addition, impacts that are materially in breach of Project standards are adverse and major.

Impact assessment rankings are inherently subjective and are based on the broad experience of the ESIA team in performing such assessments for a wide range of industrial developments.

A series of tables are presented at the end of each chapter to summarise the impacts according to standardised assessment criteria. The approach has been to quantify impacts wherever possible and to highlight those adverse impacts which are assessed to be moderate or major.

⁵ The Omnogovi *aimag* Khural of Citizens' Representatives, Governor's Office and Omnogovi Development and Research Foundation. Omnogovi *aimag* Socio-economic and Environmental Baseline Survey, 2008. Available at www.umnugovi.mn

⁶ Oyu Tolgoi Social Impact Assessment, Final Report, Centre for Policy Research and Population Training and Research Centre, Ulaanbaatar, Mongolia. September 2009.

⁷ Oyu Tolgoi Project Social, Economic and Environmental Subset, Final Report, Centre for Policy Research and Population Training and Research Centre, Ulaanbaatar, Mongolia. September 2009.

3.4.6 Design of Mitigation Measures and Monitoring

Mitigation measures that are generally consistent with Good International Industry Practice⁸ have been built into the Project design and will be implemented throughout construction, operations and closure. For each area of impact, mitigation measures have been prepared describing the steps and actions to be taken. These measures are specified for each project phase through construction to operation and closure. In addition to mitigation and management measures, means to manage the residual impacts through the life of Project are set out in the appropriate Management Plans contained in *Section D* of the ESIA. The following hierarchy of mitigation measures has been followed:

- “Designing-out” impacts by adopting an initial design that avoids impacts;
- Assessing alternatives and, where feasible, adopting those with less or lower impacts;
- Modifying the initial design to reduce remaining impacts;
- Applying mitigation measures to manage remaining impacts; or
- Establishing fair compensatory measures to address residual impacts that remain after implementation of the above steps.

3.4.7 Environmental and Social Management Systems

The ESIA describes the organisational structure for social and environmental management at Oyu Tolgoi together with responsibilities for environmental monitoring and reporting. Reflecting the organisational structure of Oyu Tolgoi an Environmental Management System (EMS) has been developed which is the principal management tool used by the Environment Department for the monitoring and management of environmental performance. In parallel, the Community Relations and Sustainable Development (CRSD) Department has developed its Socio-Economic Management Plan (SEMP) to monitor and manage socio-economic impacts related to the Project. Both of these systems are described in *Section D: Management Plans* of this ESIA. The work of both of these departments, and their respective management plans/systems are mutual supportive and this is reinforced through this ESIA by the development of an over-arching Environmental and Social Management System (ESMS) to focus actions by Oyu Tolgoi onto key issues and impacts in an integrated manner.

3.4.8 Rehabilitation and Closure

The preparation of a rehabilitation and closure plan, prior to the development of a Project, is an integral part of the mine planning process by Oyu Tolgoi. This approach to mine planning recognises that mining represents a temporary use of the land and that appropriate closure of mining operations contributes to the effective use of natural resources in the long-term. The plan will be reviewed on a regular basis during the operational life of the Project prior to closure to take account of:

- Significant changes in the risk profile represented by the closed mine site with respect to environmental sensitivities;
- Significant approved changes to the scope, extent or system of mining and mineral treatment with respect to the original plans;
- Changes in the national regulatory framework with respect to permitted levels of emissions and any other contaminants and also to standards which would apply to environmental aspects of the post-closure mine-site (e.g. permitted levels of heavy metals in soils; quality of mine-water discharges to surface water courses);
- International good practice concerning mine closure planning (as set out in the IFC EHS Guideline for Mining, and EBRD requirements including the EU Mine Waste Directive 2006/12/EC), and the Rio Tinto mine closure standard; and
- Improvements in available technologies and management techniques in the mitigation and remediation of impacts due to mining activity.

⁸ Defined as the exercise of professional skill, diligence, prudence and foresight that would reasonably be expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally (IFC PS2)

Chapter D21: Mine Closure Framework sets out Project commitments to meet Mongolian regulatory requirements, international good practice and the Rio Tinto Closure Standard. A detailed Mine Closure and Rehabilitation Plan is currently under preparation by Oyu Tolgoi to update the plan set out in the Mongolian Feasibility Study for the Oyu Tolgoi Project.

3.5 CUMULATIVE IMPACTS

The ESIA has also addressed cumulative impacts. These are defined as:

The combination of multiple impacts from existing projects, the proposed project, and/or anticipated future projects [which] may result in significant adverse and/or beneficial impacts that would not be expected in case of a stand-alone project⁹.

Cumulative impacts may occur not only in relation to mining activities, but may occur due to other industrial or development activities as the economy and the population of the Project Area of Influence grow. The scope of cumulative impacts addressed by this ESIA is set out in *Chapter A1: Introduction*.

In the case of the Oyu Tolgoi ESIA, cross-sectoral impacts have been addressed in each chapter. For example, whilst dust in itself may not be a significant impact on a community, the combined impact of dust nuisance, noise nuisance and traffic could be deemed significant. A summary chapter of cumulative impacts is also provided in the ESIA.

⁹ International Finance Corporation Guidance Notes: Performance Standards on Social and Environmental Sustainability, 31 July 2007. Para. G22.